

LOCATION: J:\2023\W21.0353\Section 2\Engineering\design\consolidated Street Details.dwg
DATE/TIME: April 28, 2023 10:28am
PLOT/ED BY: jllahm

Subdivision Control Ordinance

SECTION 6-102-5. IMPROVEMENTS AND INSTALLATIONS

A. GENERAL

- Subdivision improvements shall be designed, furnished, and installed in accordance with requirements herein and other applicable criteria. Whenever requirements of any other governmental unit are higher or more restrictive than this Ordinance, those requirements shall control any application for plat approval.
- Prior to final approval of a plat and any construction in a subdivision, the subdivider shall submit copies of the erosion control plan and construction drawings for street drainage facilities and all other required improvements to the Board of Commissioners at least thirty (30) days before construction begins. Construction drawings for the sanitary sewer system shall also be submitted to the Johnson County Board of Health, Indiana State Board of Health, Indiana Department of Environmental Management, and such other State agencies as may be appropriate, at least sixty (60) days before construction begins.
- All construction within the County road/street right-of-way shall require a permit and a bond through the County Highway Department.
- All culverts and bridges to be incorporated into the County road system shall conform to the current requirements of the Johnson County Bridge and Culvert Acceptance Policy.
- Inspection of construction of all required improvements shall be under the direction of the Board of Commissioners. The subdivider shall sign an agreement for Inspection and Testing Services with the County, as prescribed in the Appendix, Forms 12 and 13.

B. STREETS

Improvements for streets shall be performed to meet the following minimum standards and requirements:

1. Pavement Construction

- The County Planning Engineer shall be notified at least twenty-four (24) hours in advance of subgrade work, placement of stone base, concrete paving, or asphalt paving, but work may proceed if the County Engineer fails to inspect within seventy-two (72) hours of notification.
- The Director shall, when necessary and prudent, and at the developer's expense, have core samples taken from the finished work to verify thickness and quality.
- Subgrade
 - Subgrade and proposed building areas, as shown on the approved plans, shall be graded to a smooth, true surface and to the required depth, and all soft and spongy places not affording a firm foundation will be dug out and refilled with

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- | | |
|--|---------|
| Residential developments | 25 feet |
| Commercial and industrial developments | 50 feet |
- Collector streets:

Width, with curb and gutter	32 feet*
Width, without curb and gutter	28 feet
Radius at intersections	
Residential developments	25 feet
Commercial and industrial developments	50 feet

*Measured back-to-back of curb
 - Landscape islands are encouraged for cul-de-sacs only in residential subdivisions. The maximum radius of such islands shall be ten (10) feet. Geometrics of cul-de-sacs with landscaping will be reviewed individually and may require a larger overall diameter than listed above.
 - At an intersection of a subdivision street, or commercial or industrial drive, with an existing street or road, the subdivider shall install deceleration, acceleration and passing lanes along an existing street in accordance with Figure 1, 'Acceleration, Deceleration, and Passing Blister,' located in the Appendix of this Ordinance.
 - All road work involving construction of passing blisters and/or accel/decel lanes shall require a one-inch (1") overlay of bituminous surface, which shall extend across the full width of the existing roadway as well as the new features. Limits of this work shall be the extreme ends of the tapers and/or blister. Butt joints shall be milled at the ends of the work to ensure a smooth transition.
 - The overlaid area shall be striped as shown on approved construction plans. Striping material shall be thermoplastic in accordance with Indiana Department of Transportation specifications. Pavement curing shall take place for thirty (30) days prior to placement of the striping. Temporary tape striping may be required, at the discretion of the County Highway Department, until the thermoplastic markings are placed.
 - Additional off-site rights-of-way may be required for construction of the passing blisters or the tapers. The right-of-way shall be obtained and dedicated prior to the approval of County Highway Department permits.
 - Stone or asphalt shoulders shall be required adjacent to all passing blisters, tapers, and turn lanes. Stone shoulders shall be compacted #53 stone with a minimum thickness of six inches (6"). Both stone and asphalt compositions shall be placed flush with the new finished pavement, shall have a cross slope of six percent (6%) or three-quarters of an inch (3/4") per foot, and have a

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- compacted earth or stone. The entire area shall be so compacted as to meet a Proctor dry density of ninety-five percent (95%) or better. Stone backfill gradation shall have the approval of the County Planning Engineer. The subgrade shall be rolled with a roller weighing no less than ten (10) tons.
 - If dry, the subgrade shall be sprinkled or otherwise wetted prior to the time of laying the pavement. However, no pavement shall be laid on a muddy subgrade. The subgrade shall be maintained in a well-drained condition at all times during construction.
 - The subgrade condition must be approved by the County Planning Engineer or his representative before any concrete is placed. The final subgrade and stone base shall pass a proof roll test as directed by the County.
 - No stone base shall be placed until all utility road crossings are completed.
 - All utility road crossings shall be backfilled with No. 53 compacted aggregate stone, which shall be compacted so as to meet a Proctor dry density of ninety-five percent (95%) or better. Alternative backfill materials may be used upon approval by the County Planning Engineer.
 - If lime stabilization is required, the results of the soil tests used to determine the type and percent of lime used shall be submitted to the Planning Engineer for review and approval prior to placement. A two-inch (2") reduction in the required stone thickness may be allowed if approved by the County Planning Engineer.
- d. Concrete Street Pavement Standards
- Construction shall consist of reinforced or plain cement concrete laid as a pavement, in one course, on a 4" stone base and conforming with lines, grade, thicknesses, and cross-sections shown on plans or otherwise specified. The concrete shall reach a minimum four thousand (4000) P.S.I. compressive strength at twenty-eight (28) days.
 - Unless otherwise specified, concrete for pavement shall entrain five percent (5%) to seven percent (7%) air and shall conform to the Indiana Department of Transportation's most recent specifications, Section 500.
 - The test for slump of concrete for reinforced concrete pavement shall be in accordance with ASTM C143-S2, and for paving, the maximum slump shall be two inches (2"). In no case shall the water used, including any free water in the aggregate, exceed five and eight-tenths (5.8) gallons per bag (94 pounds) of cement used.
 - The two aggregates shall be proportioned to use the maximum amount of course aggregate to produce a workable mix. Fine aggregates shall not be less than thirty percent (30%) nor more than fifty percent (50%) of the total weight

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- minimum width of two (2) feet.
- At an intersection of two streets with different functional classifications (arterial, collector, local), any new pavement section within the right-of-way shall be composed of the structural material required for the street with the highest functional classification.
 - A graphical specification showing the proposed roadside ditch location and road widening for any adjacent street to a project is shown in Figure 2, 'Roadside Ditch Location and Road Widening Detail,' in the Appendix of this Ordinance.
3. Pavement Sections
- The minimum thickness of sub-base, base course, and pavement shall be as follows, unless otherwise allowed, in writing, by the County Planning Engineer:
- Local and cul-de-sac streets

A six-inch (6") plain concrete pavement on four inches (4") of compacted crushed stone on compacted subgrade, or four inches (4") of hot asphaltic concrete pavement (one inch (1") of surface and three inches (3") of binder) on nine inches (9") of compacted crushed stone base on a compacted subgrade.
 - Collector streets

A seven-inch (7") plain concrete pavement on four inches (4") of compacted crushed stone on compacted subgrade, or a seven-inch (7") hot asphaltic concrete pavement (one inch (1") of surface, two inches (2") of binder and four inches (4") of base) on eight inches (8") of compacted crushed stone base on compacted subgrade.
 - Arterial streets

An eight inch (8") reinforced concrete pavement on four inches (4") of compacted crushed stone on compacted subgrade, or a nine-inch (9") hot asphaltic concrete pavement (one inch (1") of surface, two inches (2") of binder and six inches (6") of base) on eight inches (8") of compacted crushed stone base on a compacted subgrade.
 - Higher standards than indicated in this Section may be required by the Commission or the Board of Commissioners to accommodate extraordinary traffic volumes or other abnormal characteristics. All materials, mixtures, and workmanship shall conform to the Indiana Department of Transportation's current specifications, except as modified by County Specifications.

4. Curbs and Gutters

For all proposed major residential, commercial, and industrial subdivisions, the subdivider shall provide curbs and gutters. Curbs and gutters in residential areas may be an approved roll type with four inch (4") curb and twenty-four inch (24") minimum width made of six

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- of the aggregate used in each cubic yard.
- Ready-mixed concrete shall be used in street construction except in extreme emergencies. Each ready-mix supplier shall provide certified mix analyses for all concrete provided.
 - Construction shall proceed in an orderly fashion with the contractor assuring that adequate equipment and sufficient labor to expedite the work is on the job site at all times.
 - Expressways, arterial highways, and primary thoroughfares shall be constructed with a minimum eight inch (8") thickness concrete and be reinforced with a minimum of one layer of 6 x 6/6 W.W.F. Secondary thoroughfares, collector streets, and minor residential streets shall be a minimum six inch (6") thickness concrete, with no reinforcing steel.
 - During construction activity, concrete trucks and other construction traffic shall not be allowed on a poured lane until a minimum of fourteen (14) days curing time has elapsed, or until concrete has reached design strength.
 - At the close of each day's work, a construction joint shall be made not less than ten feet, zero inches (10'-0") from the preceding transverse contraction joint. Sections less than ten feet, zero inches (10'-0") shall not be permitted.
 - The upper edges of all preformed expansion material in joints shall be parallel to the surface of the pavement and level therewith.
 - Transverse expansion joints shall be constructed only as specified on plans.
 - In the construction of an expansion joint with load transfer, the joint shall comply with plan details.
 - A joint holder will be required to hold the dowel bars accurately in place perpendicular to the cross section of the pavement and to the line of the joint.
 - A dummy joint shall be constructed at four feet, zero inches (4'-0") off back of curb and parallel with the curb line.
 - Contraction joints shall be installed at eighteen feet, zero inch (18'-0") intervals, at least one quarter of slab thickness, early enough to control cracking, but late enough to prevent damage by blade action if sawed, to slab surface and to the concrete immediately adjacent to the joint.
 - At junctions with an unpaved street, new pavement shall be thickened for at least twelve feet, zero inches (12'-0"), gradually increasing thickness to not less than one and one-third (1 1/3) times as thick as the designed slab. Three-quarter inch (3/4") by fifteen inch (15") dowel bars at eighteen inch (18") centers shall be properly placed in this end section and carefully bent down

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Subdivision Control Ordinance

- bag concrete, and shall be six inch (6") vertical face in other areas and on arterial streets. Curbs shall have one and one-half inch (1 1/2") minimum depth control joints every ten feet, zero inches (10'-0"), and one-half inch (1/2 ") expansion material at all sides of structures.
5. Sidewalks
- For all proposed major residential, commercial, and industrial subdivisions, the subdivider shall provide sidewalks on both sides of the street, and a common area sidewalk shall be provided along the frontage of County roads. The sidewalks shall be at least four feet, zero inches (4'-0") wide and four inches (4") thick, underlain with adequate granular material, sloped one-quarter inch (1/4") per foot toward the street and be located no closer than one foot, zero inches (1'-0") from property lines, and no closer than one foot, zero inches (1'-0") from the back of the curb. Handicap access ramps shall be provided where sidewalks join streets, at street intersections, and at the necks of cul-de-sacs.
6. Roadside Swales
- New and existing streets not having curbs and gutters shall provide the following:
- Side ditch swales measuring a minimum of one foot, zero inches (1'-0") deep at their centerline at a point four feet, zero inches (4'-0") inside the right-of-way line.
 - A shoulder width based on the road classification and dictated by the County Highway Engineer. In no case shall the shoulder be less than two feet (2) in width.
 - A swale or culvert at all driveways sized according to amount of storm water flow, as required to keep a ten-year rainfall event. All culverts shall extend at least five feet, zero inches (5'-0") beyond either edge of the paved driveway edge.
 - Culverts shall be installed under the roadway where necessary and be sized to carry, flowing full, a minimum of a ten-year rainfall event. All culverts shall extend at least five feet, zero inches (5'-0") beyond either edge of the paved roadway.
 - Relief of side ditches and swales along the roadway shall be accomplished through the use of off-street retention basins or existing drainage channels.

7. Street Identification Signs

It shall be the responsibility of the subdivider to provide and install street identification signs at all street intersections within the subdivision prior to the construction of any permanent improvements other than those specifically set forth by this Ordinance. Said signs and posts shall conform to the following standards or be of a design approved by the County Commissioners:

- Each signpost shall consist of a two-inch (2") galvanized Type A post, twelve feet, zero inches (12'-0") long with a minimum three feet (3') below grade, weighing two (2) pounds per foot.

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- after concrete is thoroughly set. The adjoining last fifty feet, zero inches (50'-0") of unpaved street shall be carefully graded and compacted to blend with new pavement.
- Wire mesh, if shown on plans or requested by the County Highway Engineer, shall be placed as directed and comply with provisions of AASHTO M 55" welded steel wire fabric for concrete reinforcement.
 - Unless otherwise specified, mesh shall be placed in the middle third of concrete and parallel to finished subgrade. The ends shall be more than two inches (2") back from joints, and the edges not more than three inches (3") from forms. Sheets shall be lapped the width of one mesh.
 - Asphalt filler shall meet the detailed requirements of the Indiana Department of Transportation.
 - Immediately upon completion of finishing process, the concrete shall be properly cured by use of curing blankets, plastic sheets, or liquid membrane forming compounds conforming to ASTM C309-53T. Failure to comply with requirements herein will result in rejection of the work.
- e. Asphaltic Concrete Street Pavement Standards
- Construction shall consist of a full-depth hot asphaltic concrete pavement on a compacted subgrade or hot asphaltic concrete on a compacted crushed stone base, with pavement thickness coordinated with the County Highway Engineer.
 - All materials, mixtures, and workmanship shall conform with current Indiana Department of Transportation specifications and all other applicable portions of Section 6-102-5 of this Ordinance.
 - Stub ends of streets shall have each layer of asphalt material extend at least two (2) feet beyond the end of the subsequent layer.

2. Minimum Paved Surface Dimensions

a. Local and cul-de-sac streets:

Width, with curb and gutter	28 feet*
Width, without curb and gutter	24 feet
Terminus diameter on cul-de-sac	
Residential use only	90 feet
School bus turn-arounds	110 feet
Radius at intersections	

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- Each sign shall be of a metal, double-blade design, green reflectorized with four-inch (4") or larger white gothic letters, mounted at the top of the post, with the street name on both sides.
 - Street signs shall be located within the street right-of-way, but no closer than six feet, zero inches (6'-0") from the edge of the traveled portion of the street, as shown on construction drawings.
8. Stop and Speed Limit Signs
- It shall be the responsibility of the subdivider to provide and install stop signs and speed limit signs prior to issuance of any building permits, including those for model homes. Permits for model homes may be issued if temporary signs are installed. The maximum posted speed limit shall be twenty-five (25) MPH unless otherwise approved by the Board of County Commissioners. Said signs and posts shall conform to the following standards or be of a design approved by the Board of County Commissioners:
- Each signpost shall consist of a two-inch (2") galvanized Type A post, twelve feet, zero inches (12'-0") long with a minimum three feet (3') below grade, weighing two (2) pounds per foot.
 - Each stop sign shall be a minimum of thirty inches (30") in width, and be of high-intensity finish (no baked enamel finish).
 - Each speed limit sign shall be a vertical rectangle with dimensions of twenty-four inches (24") by thirty inches (30") and be of high-intensity finish (no baked enamel finish).
 - Stop signs shall be installed so that the edge of the sign is a minimum of two feet, zero inches (2'-0") from the edge of the traveled portion of the street. The sign height shall be a minimum of seven feet, zero inches (7'-0") from the top of the curb to the bottom of the sign.
 - Speed limit signs shall be installed so that the edge of the sign is a minimum of two feet, zero inches (2'-0") from the back edge of the curb, or a minimum of two feet, zero inches (2'-0") from the back edge of a shoulder, if present or proposed, as shown on construction drawings.

C. DRAINAGE

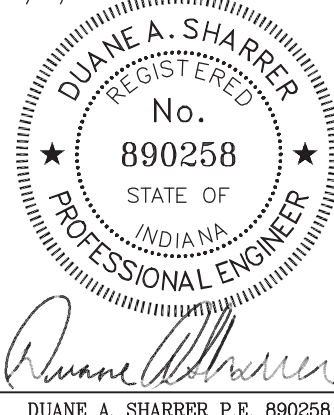
- A drainage system shall be designed and constructed by the subdivider to provide for the proper drainage of surface water from the entire subdivision and the drainage area of which it is a part. The system shall be constructed and installed in accordance with plans and specifications approved by the County Commissioners and Drainage Board.
- In designing a drainage system, the subdivider shall be guided by the following minimum standards:

Johnson County Subdivision Ordinance 50 Adopted February 19, 2002

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ALLAN H. WEIHE, P.E., L.S. - FOUNDER

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PROJECT NO:	BY	DATE
W21.0353-2		04/28/2023
DWG NAME:		
CADD SHEET CHAIRS:		
DESIGNED BY:		
CHECKED BY:		
DRAWN BY:		
MEN		
CHECKED BY:		
DATE:		04/28/2023

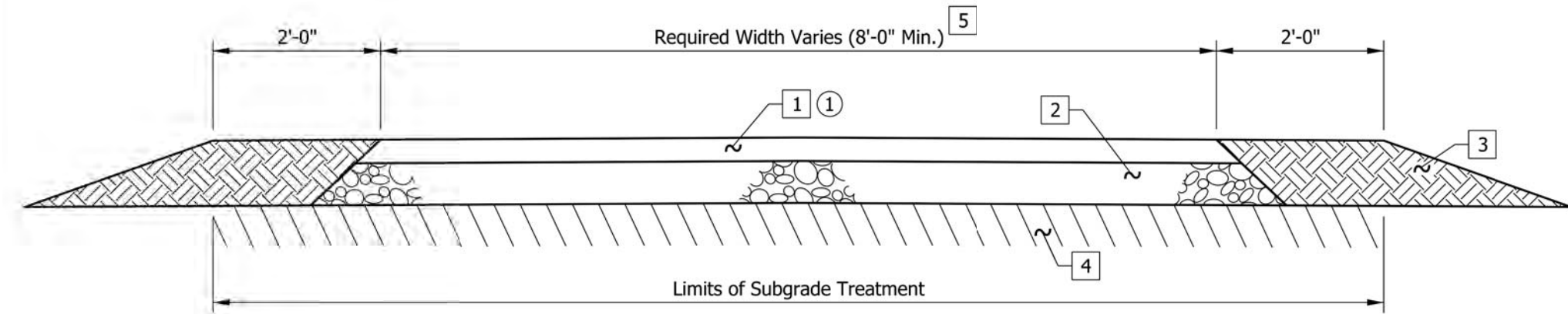


DUANE A. SHARRER P.E. 890258

LENNAR
DEERFIELD SECTION 2
RUNYON ROAD, NORTH OF OLIVE BRANCH ROAD, JOHNSON COUNTY, IN
STREET DETAILS
Section 3, Township 13 North, Range 3 East, White River Township, Johnson County, Indiana

SHEET NO.
C405
PROJECT NO.
W21.0353-2

LOCATION: I:\2023\W21.0353-2\Section 2\Engineering\design\crosswalk\Sheet Details.dwg
DATE/TIME: April 28, 2023 10:28am
PLOTTER: HP - plotters



NOTE:
1 Construct safety edge as required for Surface and Intermediate layers at edge of pavement.

- LEGEND**
- 1 HMA for Sidewalk Consisting of 140 lb/yd² HMA Surface, Type B, on 220 lb/yd² HMA Intermediate, Type B
 - 2 6" Compacted Aggregate No. S3, Base
 - 3 Earth Shoulder
 - 4 Subgrade Treatment Type III, 6" of Soil Compacted to the Density and Moisture Requirement
 - 5 Width and Cross Slope as Required

INDIANA DEPARTMENT OF TRANSPORTATION

NON-MOTORIZED VEHICLE USE FACILITY
HMA PAVEMENT SECTION

SEPTEMBER 2017

STANDARD DRAWING NO. E 604-NVUF-01

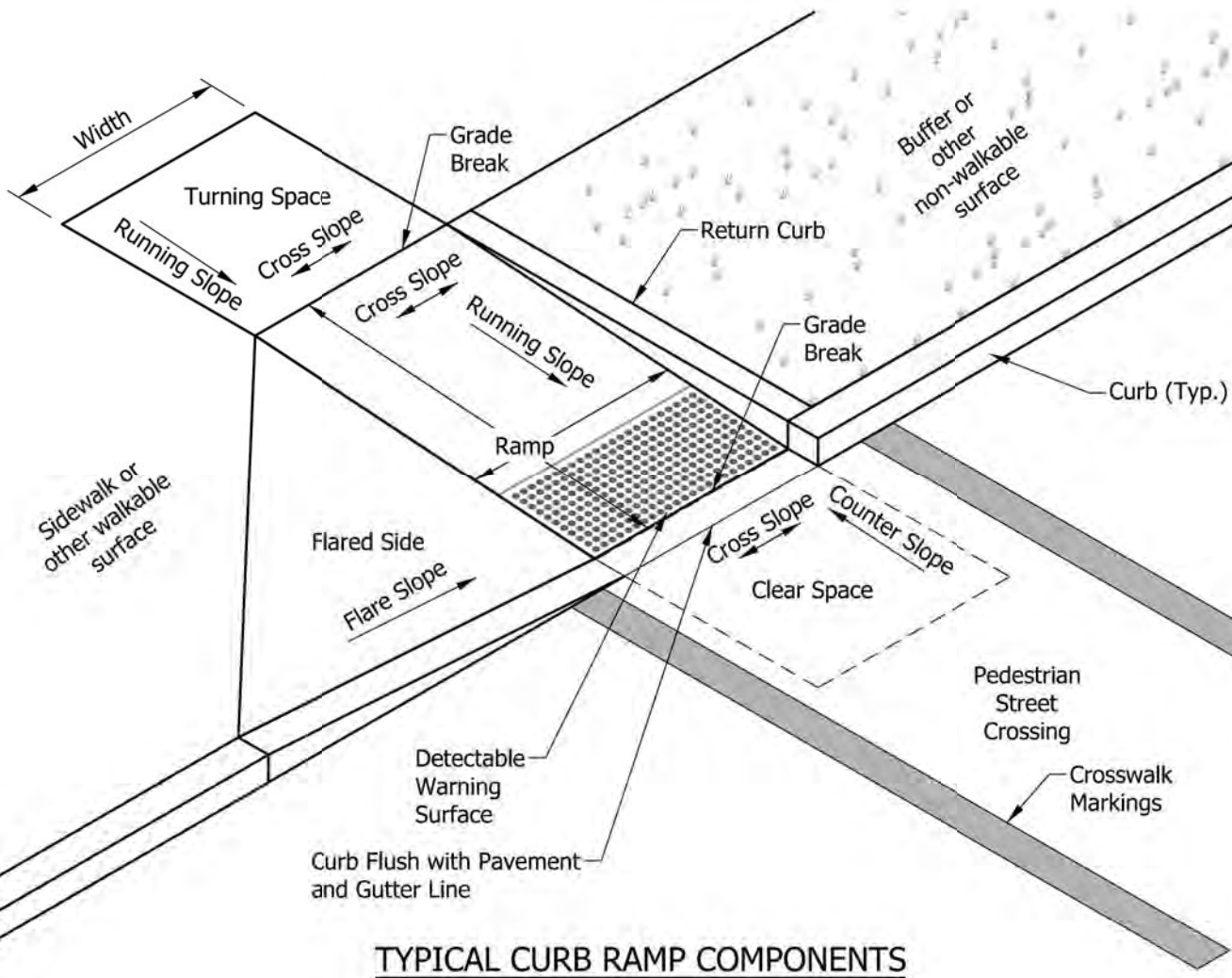
REGISTERED PROFESSIONAL ENGINEER
No. 10200124
STATE OF INDIANA

/s/ Elizabeth W. Phillips 04/27/17
DESIGN STANDARDS ENGINEER DATE

/s/ John Leckie 04/28/17
CHIEF ENGINEER DATE

INDEX	
SHEET NO.	SUBJECT
1	Curb Ramp Drawing Index and General Notes
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4	Perpendicular Curb Ramp Component Details
5	One-Way-Directional Perpendicular Curb Ramp Typical Placement
6	One-Way-Directional Perpendicular Curb Ramp Component Details
7	Parallel Curb Ramps Typical Placement
8	Parallel Curb Ramp Component Details
9	Blended Transition Curb Ramp, Depressed Curb Ramp and Diagonal Curb Ramp Typical Placement
10	Blended Transition Curb Ramp Component Details
11	Median Cut-Through and Median Perpendicular Curb Ramp Typical Placement
12-13	Detectable Warning Surface Placement and Configuration
14	Detectable Warning Surface Details

- GENERAL NOTES:**
- All slopes are absolute rather than relative to the sidewalk or roadway grade. Slopes at least 0.50% less than the maximum are preferred.
 - Ramp or Blended Transition. A ramp or blended transition shall be used to lower or raise the sidewalk to connect with the street or highway.
 - Turning Space. A turning space shall be provided at the top of a perpendicular ramp, bottom of a parallel ramp, or where the pedestrian travel requires a change in direction. A common turning space may be shared by adjacent ramps. The turning space shall have a minimum clear dimension of 4 ft x 4 ft. Where the turning space is constrained at the back of the sidewalk by a curb, retaining wall, building, or feature over 2 inches in height, the minimum clear dimension shall be 4 ft x 5 ft, with the 5-ft dimension in the direction of the ramp running slope.
 - Flared Side. A flared side shall be used adjacent to a walkable surface. A flared side may be used adjacent to a non-walkable surface. A flared side shall have a maximum slope of 10.00% measured parallel to the back of the curb.
 - Return Curb. A return curb is placed perpendicular to the roadway curb. A return curb may be used adjacent to a non-walkable surface. A return curb shall not be used adjacent to a walkable surface. The return curb may be omitted where the non-walkable surface is flared and the curb adjacent the roadway is tapered to meet the flush curb at the bottom of the ramp.
 - Clear Space. A clear space shall be provided beyond the bottom grade break of a curb ramp wholly contained within the crosswalk and wholly outside the parallel vehicular travel path. The clear space shall have a minimum clear dimension of 4 ft x 4 ft.
 - Detectable Warning Surface. A detectable warning surface shall consist of truncated domes and be placed at each street, highway, or railroad crossing. The detectable warning surface shall extend a minimum of 2 ft in the direction of pedestrian travel and be placed the entire width of a ramp, blended transition, or turning space.
 - Running Slope. The running slope of a ramp, blended transition, or turning space shall be measured parallel to the direction of pedestrian travel.
 - A running slope of 2.00% or less is considered level.
 - A ramp shall have a maximum running slope of 8.33% but shall not require a ramp length to exceed 15 ft.
 - A blended transition shall have a maximum running slope of 5.00%.
 - A turning space shall have a maximum running slope of 2.00%.
 - Width. Unless otherwise noted, minimum width of a ramp, blended transition, or turning space, excluding flared sides or return curb, shall be 4 ft.
 - Grade Break. A grade break at the top and bottom of a ramp, blended transition, or turning space shall be perpendicular to the running slope. Grade breaks shall not be within the ramp, blended transition, turning space, or detectable warning surface. Grade breaks shall be flush. Vertical discontinuities shall not be greater than 1/2 in. Where a discontinuity is greater than 1/4 in. the surface shall be beveled with a slope not steeper than 1V:2H.
 - Cross Slope Exceptions. The cross slope of a ramp, blended transition, or turning space shall be measured perpendicular to the direction of pedestrian travel.
 - The maximum cross slope at a pedestrian street crossing without posted yield or stop control shall be 5.00%.
 - The maximum cross slope at a pedestrian street crossing with posted yield or stop control shall be 2.00%.
 - The maximum cross slope at a midblock crossing shall be the established grade of the adjacent roadway.
 - Counter Slope. A counter slope is the cross slope of the gutter or street adjacent the running slope of the ramp, blended transition, or turning space. See Standard Drawing E 604-SWCR-14 for counter slope details.
 - Objects such as a utility cover, vault frame, and grating shall be placed outside the curb ramp.
 - Curb ramps shall be placed within the marked crosswalk area.
 - Drainage inlets should be located uphill from a curb ramp to prevent ponding in the path of pedestrian travel.



TYPICAL CURB RAMP COMPONENTS

INDIANA DEPARTMENT OF TRANSPORTATION

CURB RAMP DRAWING INDEX
AND GENERAL NOTES

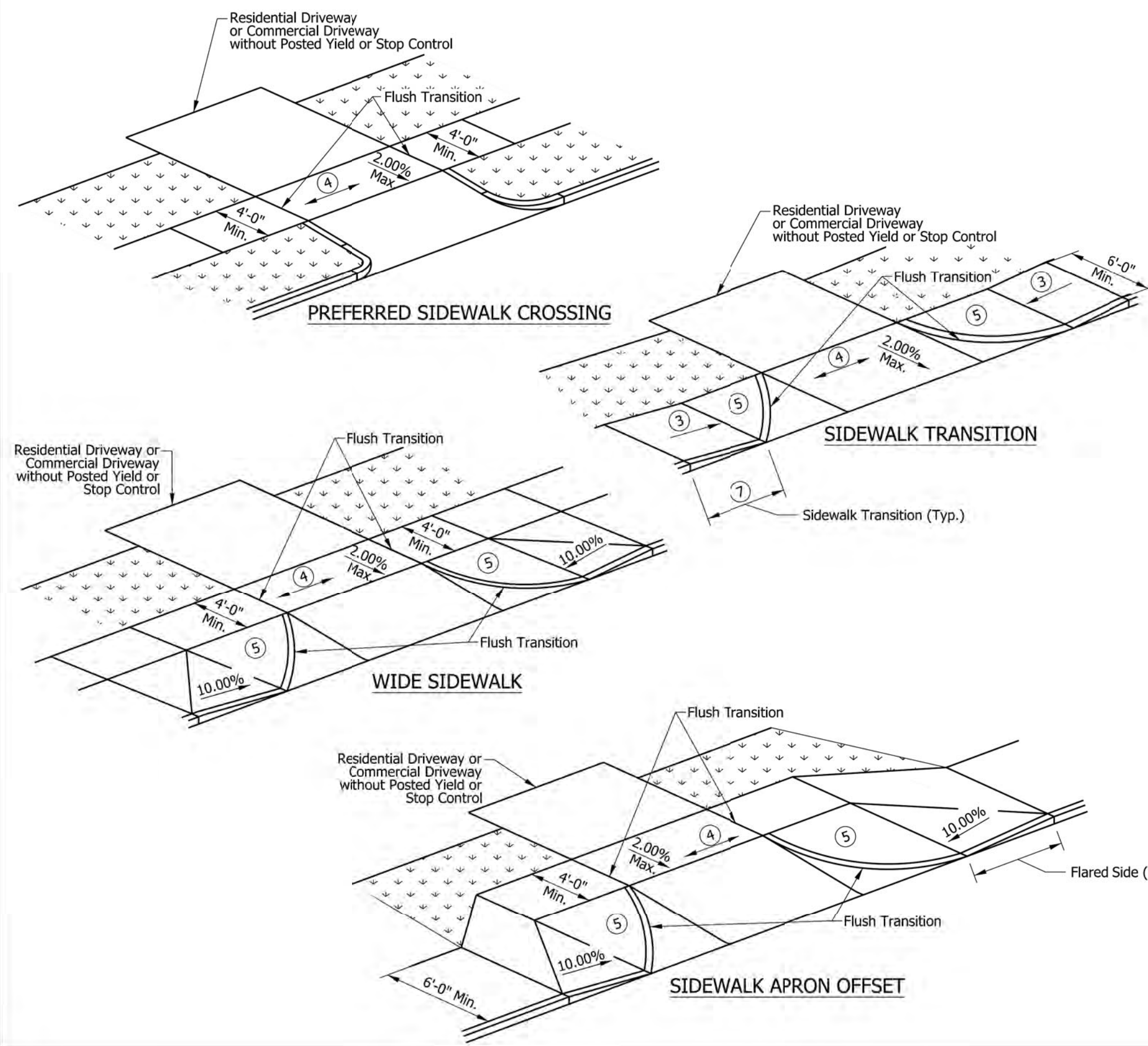
SEPTEMBER 2018

STANDARD DRAWING NO. E 604-SWCR-01

REGISTERED PROFESSIONAL ENGINEER
No. 10200124
STATE OF INDIANA

/s/ Elizabeth W. Phillips 03/20/18
DESIGN STANDARDS ENGINEER DATE

/s/ John Leckie 04/25/18
CHIEF ENGINEER DATE



- NOTES:**
- All slopes are absolute rather than relative to the sidewalk or roadway grade. Slopes at least 0.50% less than the maximum are preferred.
 - A sidewalk driveway crossing shall only be used on a sidewalk at a residential driveway or a commercial driveway without posted yield or stop control. A curb ramp shall be used at all other crossings. See Standard Drawing Series E 604-SWCR for curb ramp details.
 - Where a sidewalk transition is used to lower or raise the sidewalk to connect with a residential driveway or commercial driveway without posted yield or stop control, the running slope of the transition shall be 8.33% maximum.
 - The grade of the sidewalk across the driveway shall not exceed the grade of the adjacent roadway.
 - The area between the driveway and a flared side or sidewalk transition shall match the driveway profile and transverse slope.
 - A turning space is not required at the top of a sidewalk transition.
 - Objects such as a utility cover, vault frame, and grating shall be placed outside a sidewalk transition.
 - A detectable warning surface shall not be placed at the crossings of a residential driveway. A detectable warning surface may be placed at the crossing of a commercial driveway without yield or stop control.
 - See Standard Drawing E 604-SDWK-01 and -02 for Sidewalk Details.
 - See Standard Drawing Series E 610-DRIV for drives.

INDIANA DEPARTMENT OF TRANSPORTATION

SIDEWALK DRIVEWAY CROSSING

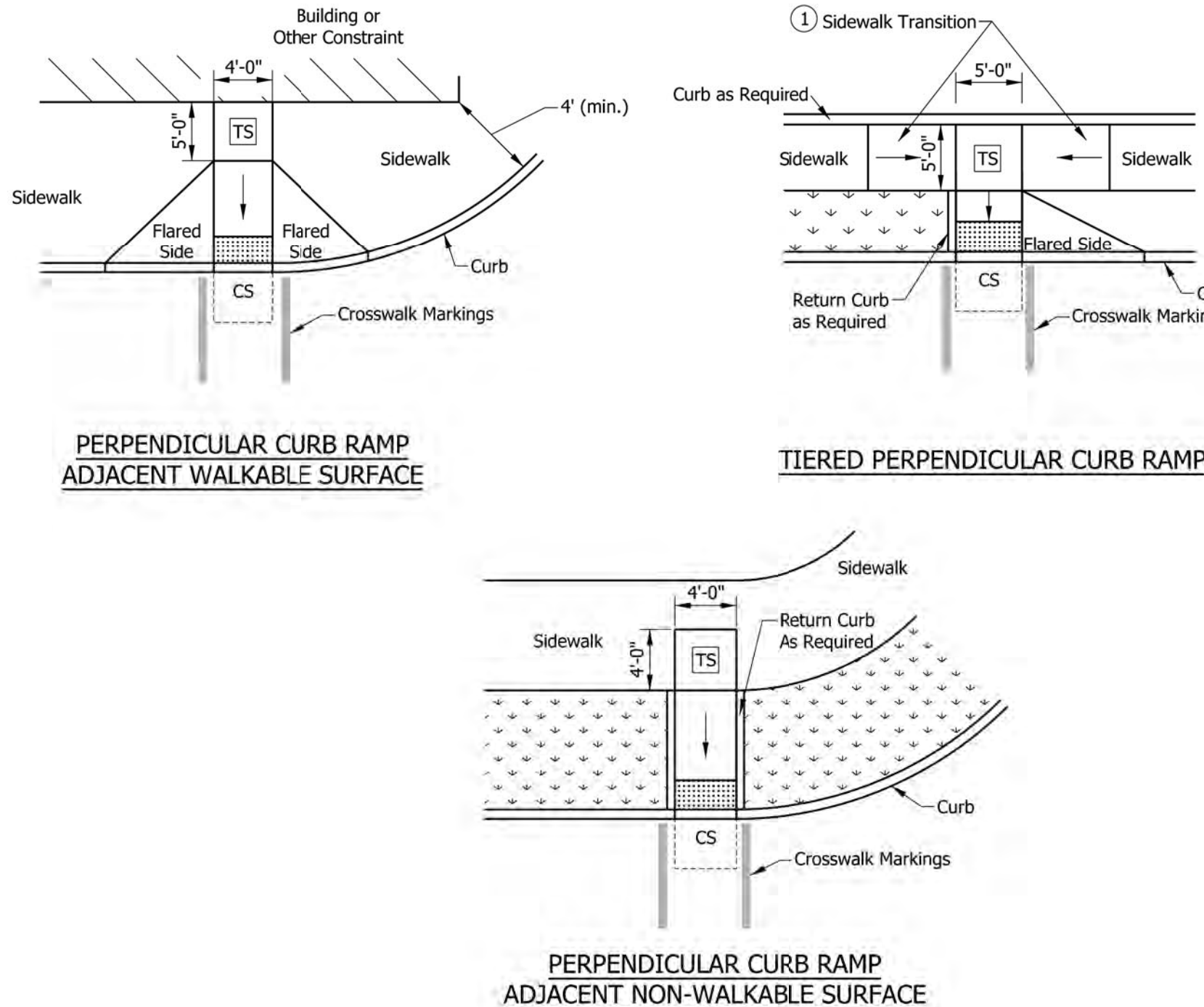
SEPTEMBER 2016

STANDARD DRAWING NO. E 604-SDWK-03

REGISTERED PROFESSIONAL ENGINEER
No. 10200124
STATE OF INDIANA

/s/ Elizabeth W. Phillips 03/16/16
DESIGN STANDARDS ENGINEER DATE

/s/ Mark A. Miller 03/18/16
CHIEF ENGINEER DATE



- NOTES:**
- Where insufficient width between the curb and back of sidewalk prevent a standard perpendicular curb ramp running slope, a sidewalk transition may be used to lower the sidewalk grade. The sidewalk transition running slope shall not exceed 8.33%. See Standard Drawing Series E 604-SDWK for sidewalk details.
 - The turning space shall have a minimum clear dimension of 4 ft x 4 ft and a running slope of 2.00% maximum. Where the turning space is constrained at the back of the sidewalk, the minimum clear dimension shall be 4 ft x 5 ft, with the 5-ft dimension in the direction of the ramp running slope.

INDIANA DEPARTMENT OF TRANSPORTATION

PERPENDICULAR CURB RAMP
TYPICAL PLACEMENT

SEPTEMBER 2018

STANDARD DRAWING NO. E 604-SWCR-02

REGISTERED PROFESSIONAL ENGINEER
No. 10200124
STATE OF INDIANA

/s/ Elizabeth W. Phillips 03/29/18
DESIGN STANDARDS ENGINEER DATE

/s/ John Leckie 04/25/18
CHIEF ENGINEER DATE

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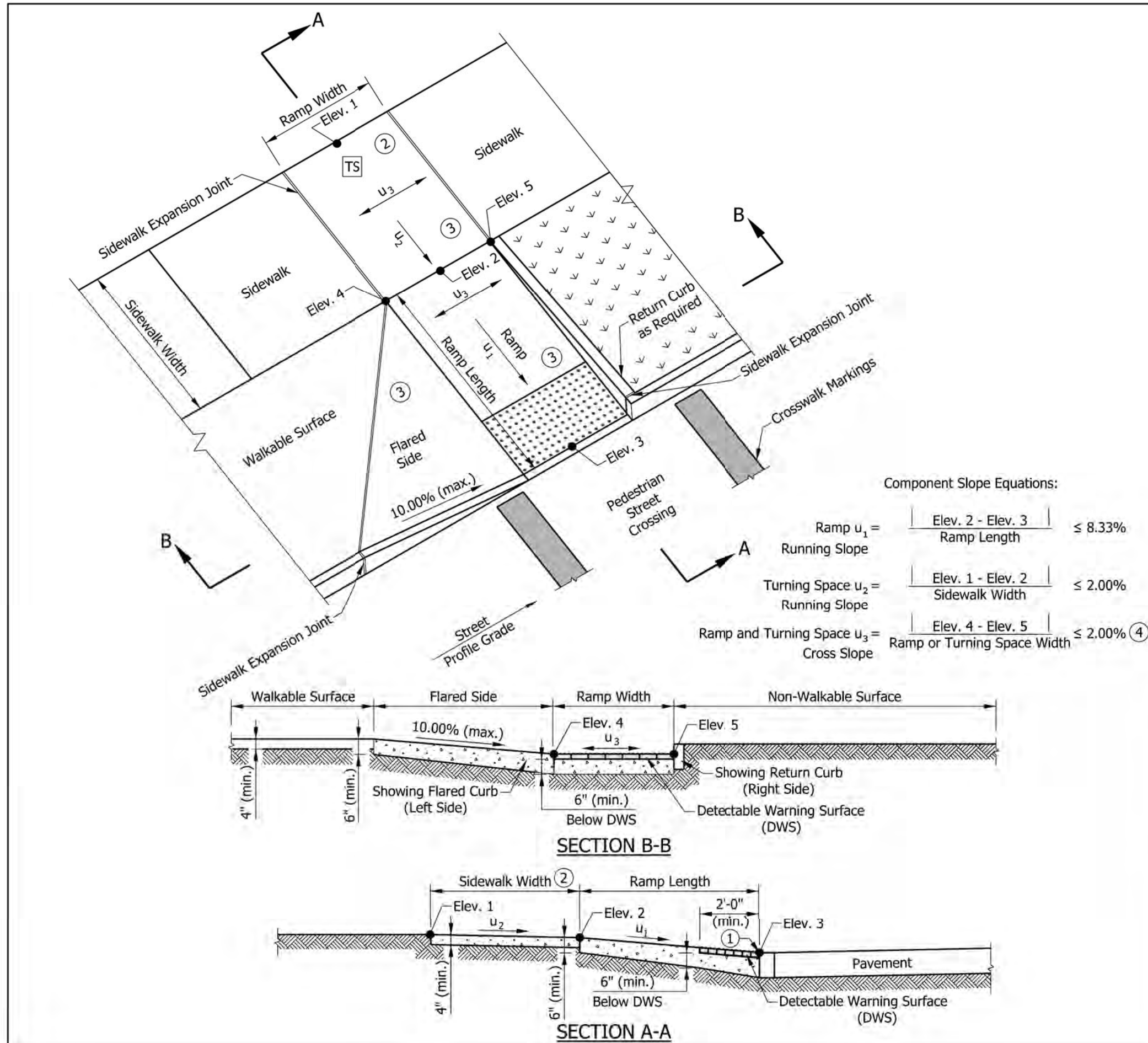
PROJECT NO: W21.0353-2
DWG NAME: C406 Sheet Details
DESIGNED BY: JSC
DRAWN BY: MEN
CHECKED BY: JP
DATE: 04/28/2023

BY: DATE: REVISIONS AND ISSUES:

DUANE A. SHARRER
REGISTERED PROFESSIONAL ENGINEER
No. 890258
STATE OF INDIANA
DUANE A. SHARRER P.E. 890258

LENNAR
DEERFIELD SECTION 2
RUNYON ROAD, NORTH OF OLIVE BRANCH ROAD, JOHNSON COUNTY, IN
STREET DETAILS
Section 3, Township 13 North, Range 3 East, White River Township, Johnson County, Indiana

SHEET NO.
C406
PROJECT NO.
W21.0353-2



NOTES:

- 1 The bottom edge of the ramp and top of curb shall be flush with the edge of adjacent pavement and gutter line.
- 2 The turning space shall have a minimum clear dimension of 4 ft x 4 ft. Where the turning space is constrained at the back of the sidewalk, the minimum clear dimension shall be 4 ft x 5 ft, with the 5-ft dimension in the direction of the ramp running slope. Where a tiered perpendicular curb ramp is used, a constrained turning space shall have a minimum clear dimension of 5 ft x 5 ft.
- 3 Curb ramp surface shall be coarse broomed transverse to the running slope.
- 4 See Standard Drawing E 604-SWCR-01 for cross slope exceptions.
- 5 See Standard Drawing E 604-SWCR-12, -13, and -14 for Detectable Warning Surface placement, configuration, and details.
- 6 See Standard Drawing E 604-CCSJ-01 for sidewalk expansion joint details.

LEGEND:

- Buffer or Other Non-Walkable Surface
- Ramp
- Detectable Warning Surface
- Turning Space

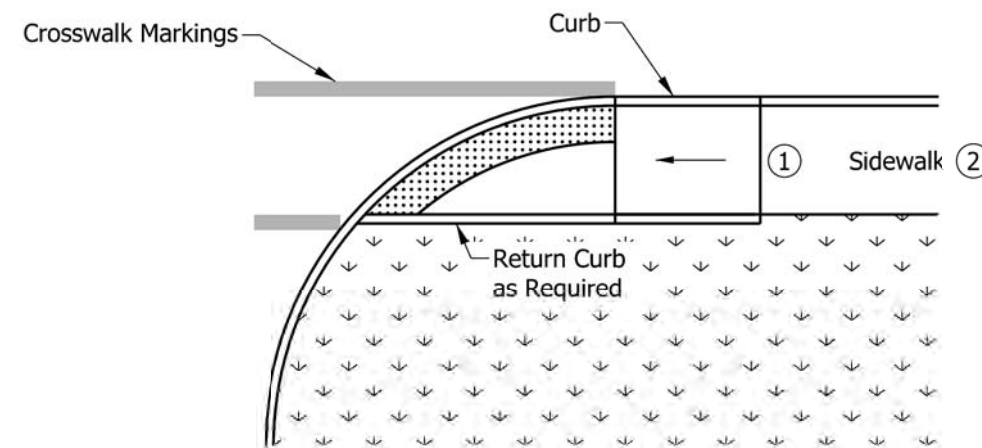
INDIANA DEPARTMENT OF TRANSPORTATION

PERPENDICULAR CURB RAMP
COMPONENT DETAILS

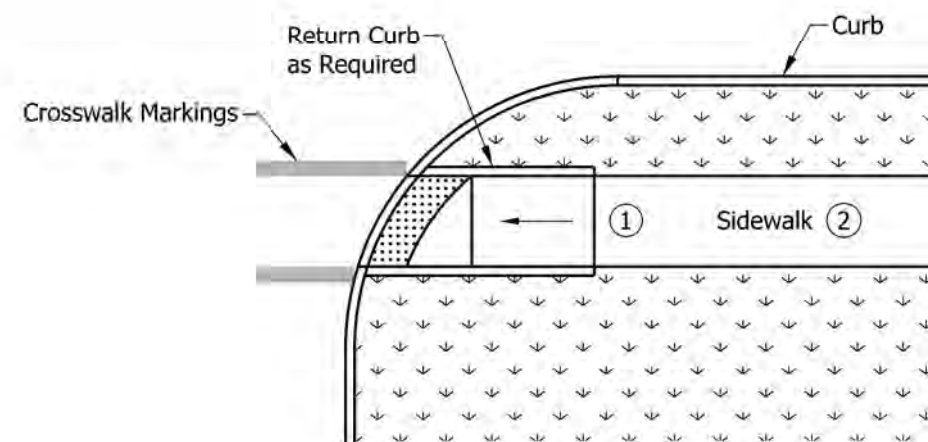
SEPTEMBER 2018

STANDARD DRAWING NO. E 604-SWCR-04

	/s/ Elizabeth W. Phillips DESIGN STANDARDS ENGINEER	03/29/18 DATE
	/s/ John Leckie CHIEF ENGINEER	04/25/18 DATE



ONE-WAY DIRECTIONAL PERPENDICULAR CURB RAMP ADJACENT CURB



ONE-WAY DIRECTIONAL PERPENDICULAR CURB RAMP WITH BUFFER

NOTES:

- 1 A turning space is not required at the top of the ramp for a one-way directional perpendicular curb ramp.
- 2 Where there is no buffer between the sidewalk and curb the preferred minimum sidewalk width is 6 ft. Where a buffer is placed between the sidewalk and curb, the preferred minimum sidewalk width is 5 ft. See Standard Drawing Series E 604-SDWK for sidewalk details.

LEGEND:

- Buffer or Other Non-Walkable Surface
- Ramp
- Detectable Warning Surface

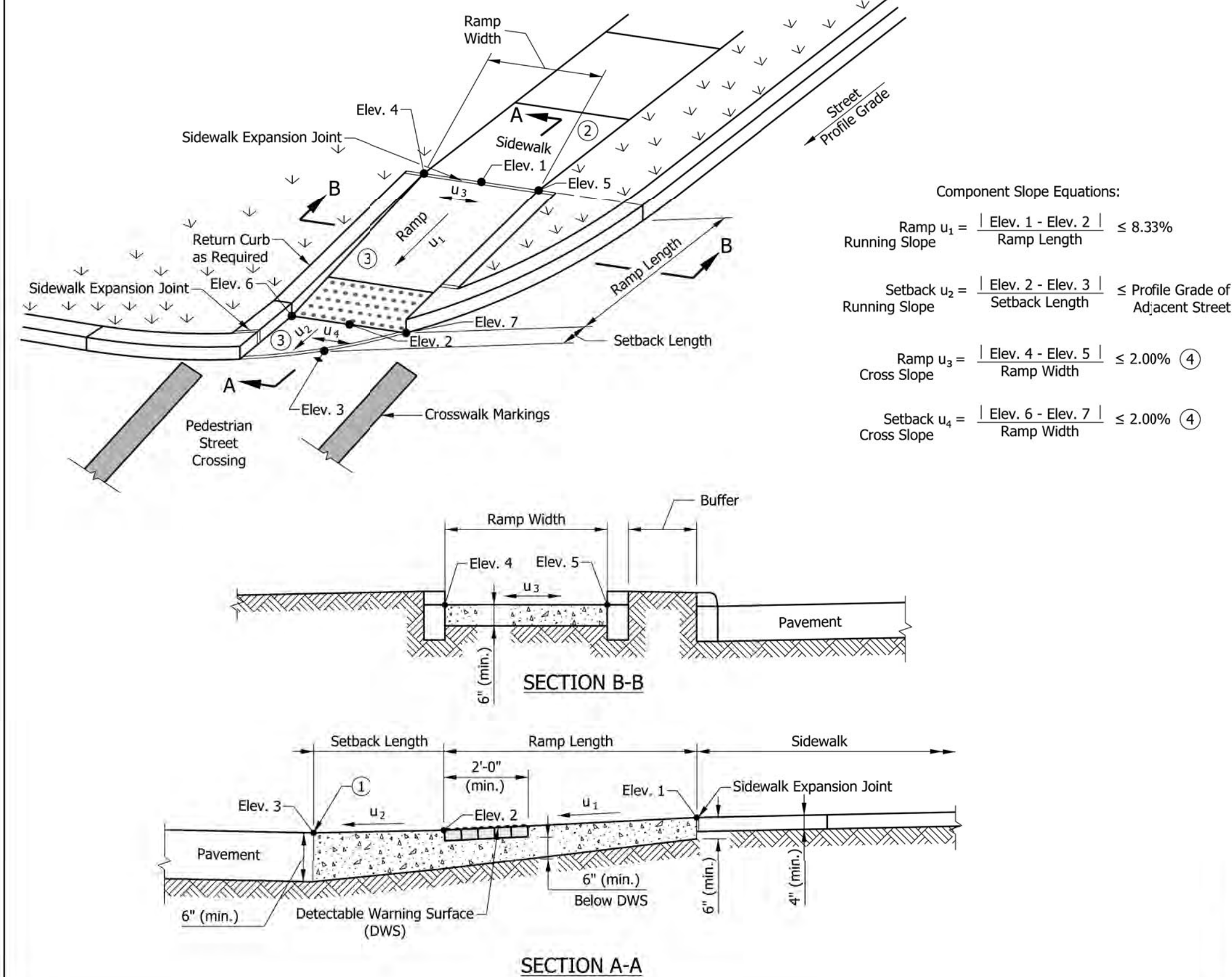
INDIANA DEPARTMENT OF TRANSPORTATION

ONE-WAY DIRECTIONAL
PERPENDICULAR CURB RAMP
TYPICAL PLACEMENT

SEPTEMBER 2016

STANDARD DRAWING NO. E 604-SWCR-05

	/s/ Elizabeth W. Phillips DESIGN STANDARDS ENGINEER	03/15/16 DATE
	/s/ Mark A. Miller CHIEF ENGINEER	03/18/16 DATE



NOTES:

- 1 The bottom edge of the ramp or setback and top of curb shall be flush with the edge of adjacent pavement and gutter line.
- 2 A turning space is not required at the top of the ramp for a one-way directional perpendicular curb ramp.
- 3 Curb ramp surface shall be coarse broomed transverse to the running slope.
- 4 See Standard Drawing E 604-SWCR-01 for cross slope exceptions.
- 5 See Standard Drawing E 604-SWCR-12, -13, and -14 for Detectable Warning Surface placement, configuration, and details.
- 6 See Standard Drawing E 604-CCSJ-01 for sidewalk expansion joint details.

LEGEND:

- Buffer or Other Non-Walkable Surface
- Ramp
- Detectable Warning Surface

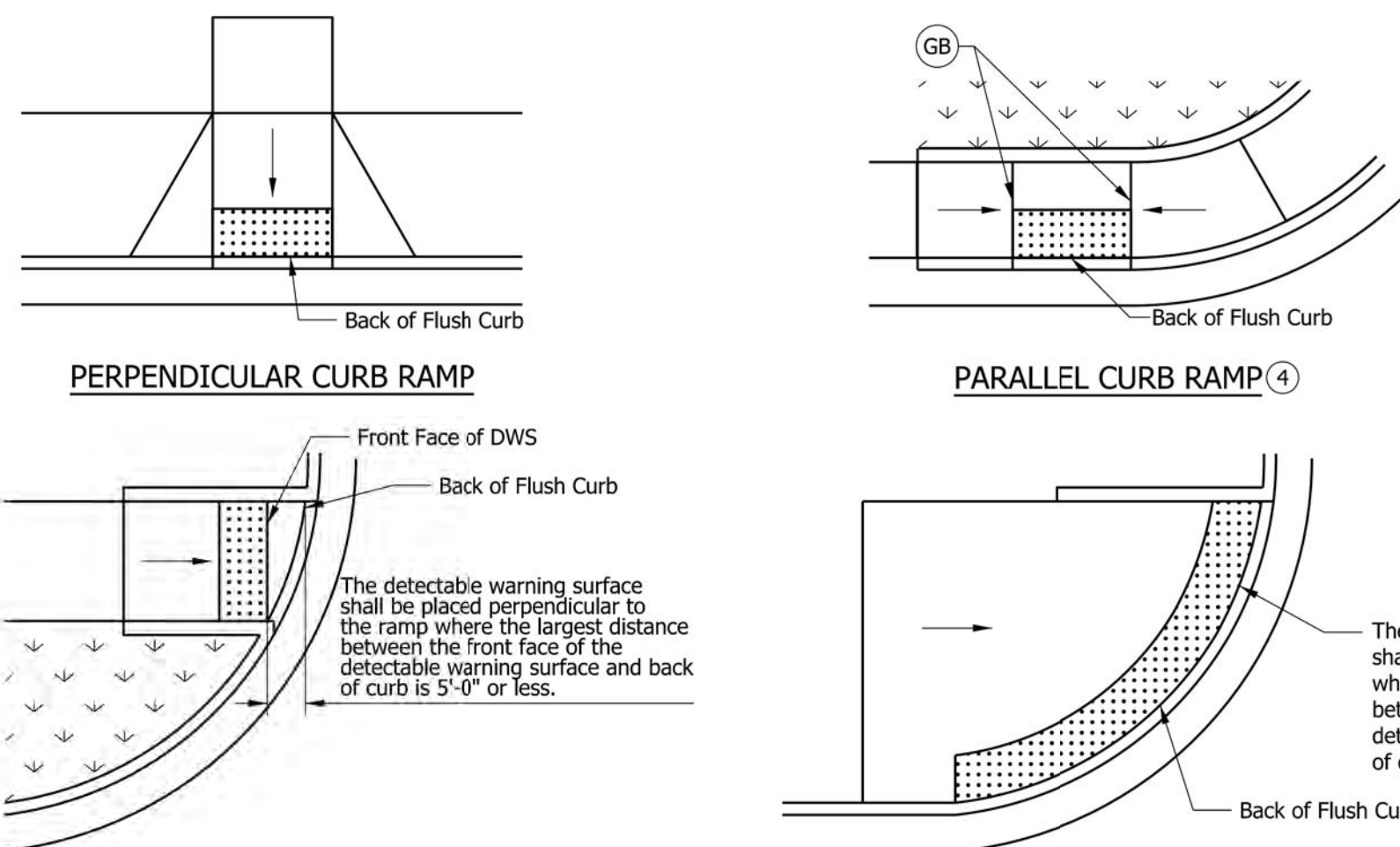
INDIANA DEPARTMENT OF TRANSPORTATION

ONE-WAY DIRECTIONAL PERPENDICULAR
CURB RAMP COMPONENT DETAILS

SEPTEMBER 2018

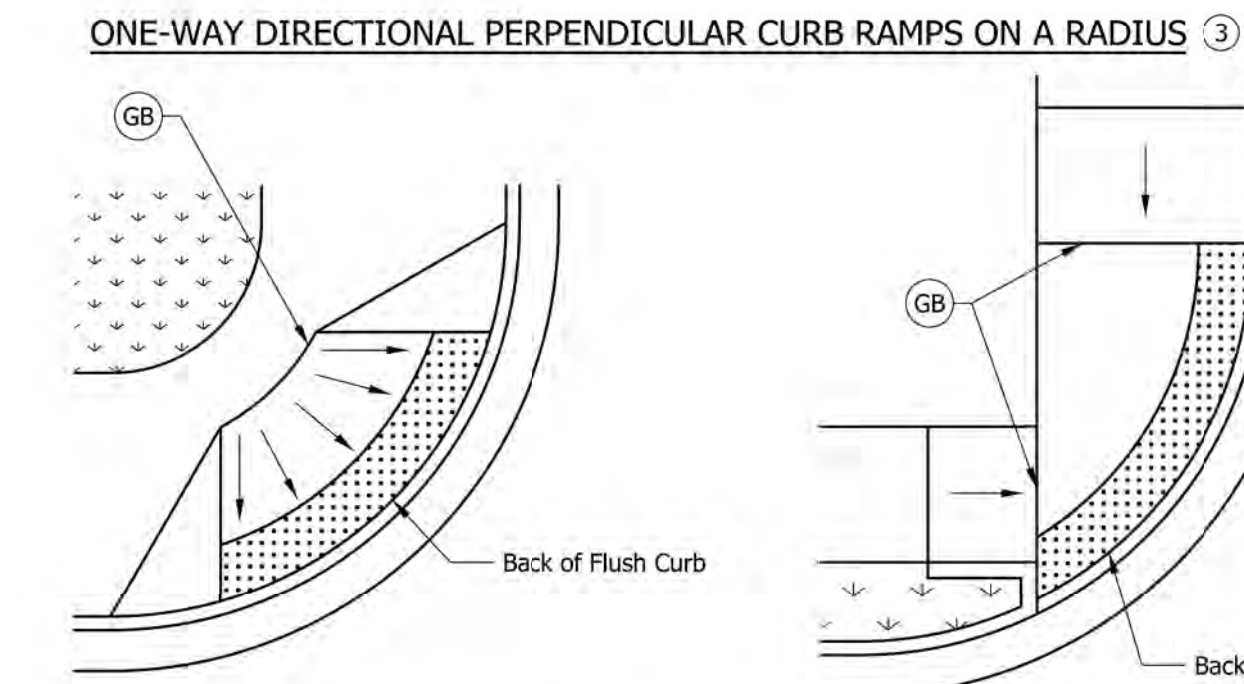
STANDARD DRAWING NO. E 604-SWCR-06

	/s/ Elizabeth W. Phillips DESIGN STANDARDS ENGINEER	03/29/18 DATE
	/s/ John Leckie CHIEF ENGINEER	04/25/18 DATE



PERPENDICULAR CURB RAMP

PARALLEL CURB RAMP (4)



ONE-WAY DIRECTIONAL PERPENDICULAR CURB RAMP ON A RADIUS (3)

BLENDED TRANSITION CURB RAMP (5)

DEPRESSED CORNER CURB RAMP (5) (7)

LEGEND:

- Buffer or Other Non-Walkable Surface
- Detectable Warning Surface (DWS)
- Ramp
- GB Grade Break

NOTES:

- 1 A detectable warning surface shall be placed at each street, highway, or railroad crossing. See Standard Drawing E 604-SDWK-03 for a detectable warning surface placement at a sidewalk driveway crossing.
- 2 The detectable warning surface shall extend a minimum of 2 ft in the direction of pedestrian travel and extend the full width as shown. The detectable warning surface shall not be placed across a grade break.
- 3 Where the distance from the face of the detectable warning surface is 5 ft or less from the back of curb, the detectable warning surface shall be placed perpendicular to the ramp. Where the distance from the face of the detectable warning surface is more than 5 ft from the back of curb, the detectable warning surface shall be placed at the back of curb as shown or in an alternate placement configuration. See Standard Drawing E 604-SWCR-13 for alternate detectable warning surface placement.
- 4 The detectable warning surface on a parallel curb ramp shall be placed on the turning space at the flush transition between the street and turning space at the back of curb.
- 5 The detectable warning surface on a blended transition or depressed corner shall be placed at the back of curb as shown or in an alternate placement configuration. See Standard Drawing E 604-SWCR-13 for alternate detectable warning surface placement.
- 6 See Standard Drawing E 604-SWCR-14 for detectable warning surface details.

INDIANA DEPARTMENT OF TRANSPORTATION

DETECTABLE WARNING SURFACE
PLACEMENT AND CONFIGURATION

SEPTEMBER 2018

STANDARD DRAWING NO. E 604-SWCR-12

	/s/ Elizabeth W. Phillips DESIGN STANDARDS ENGINEER	03/29/18 DATE
	/s/ John Leckie CHIEF ENGINEER	04/25/18 DATE

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PROJECT NO.:	W21.0353-2
DWG NAME:	C407 Street Details
DESIGNED BY:	WJS
DRAWN BY:	WJS
CHECKED BY:	JP
DATE:	04/28/2023

DUANE A. SHARRER
REGISTERED
No. 890258
STATE OF INDIANA
PROFESSIONAL ENGINEER

DUANE A. SHARRER P.E. 890258

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DEERFIELD SECTION 2

RUNYON ROAD, NORTH OF OLIVE BRANCH ROAD, JOHNSON COUNTY, IN

STREET DETAILS

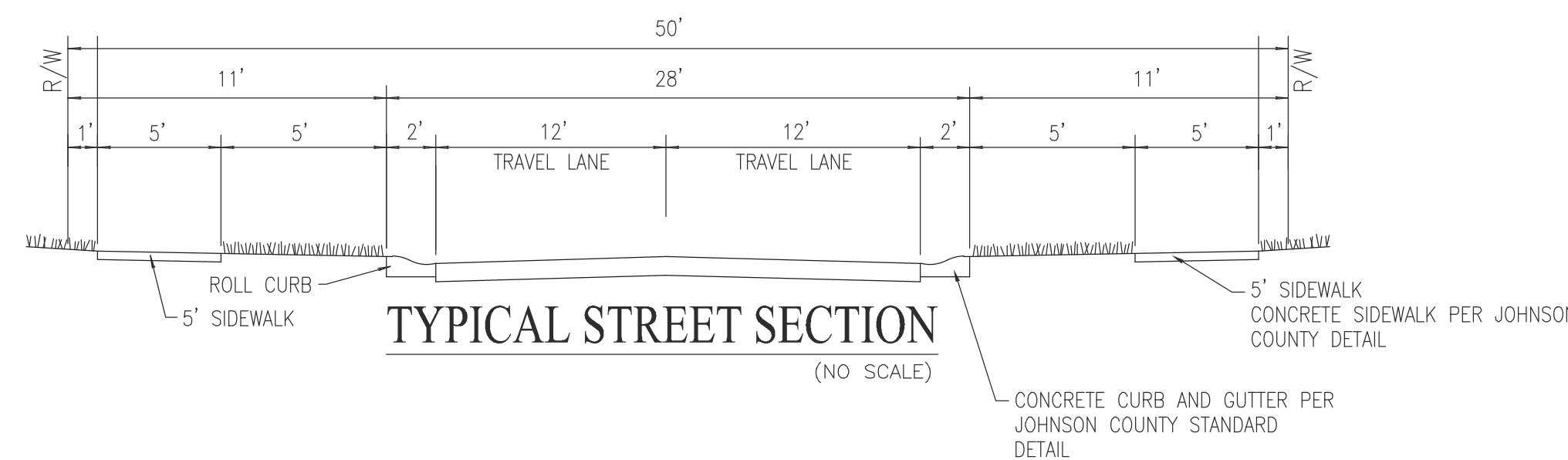
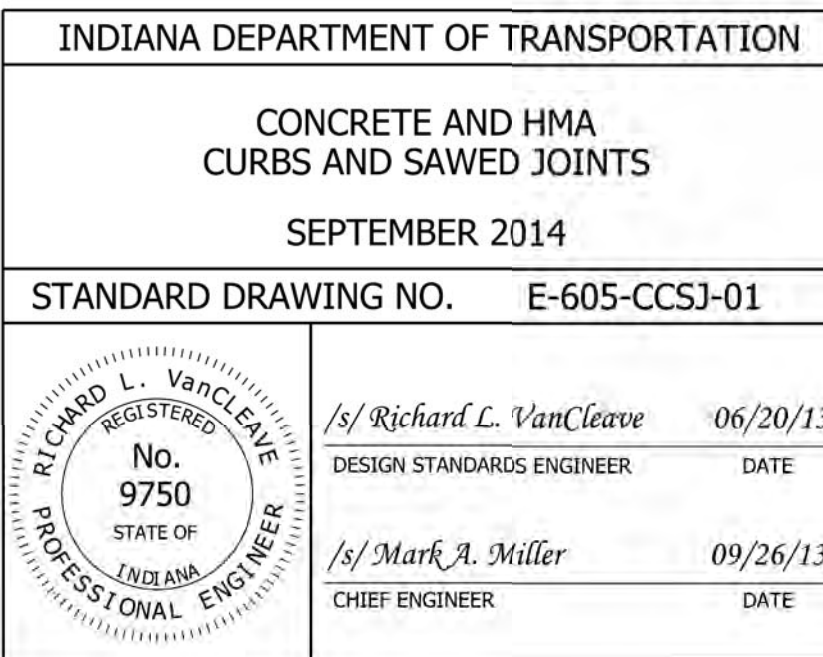
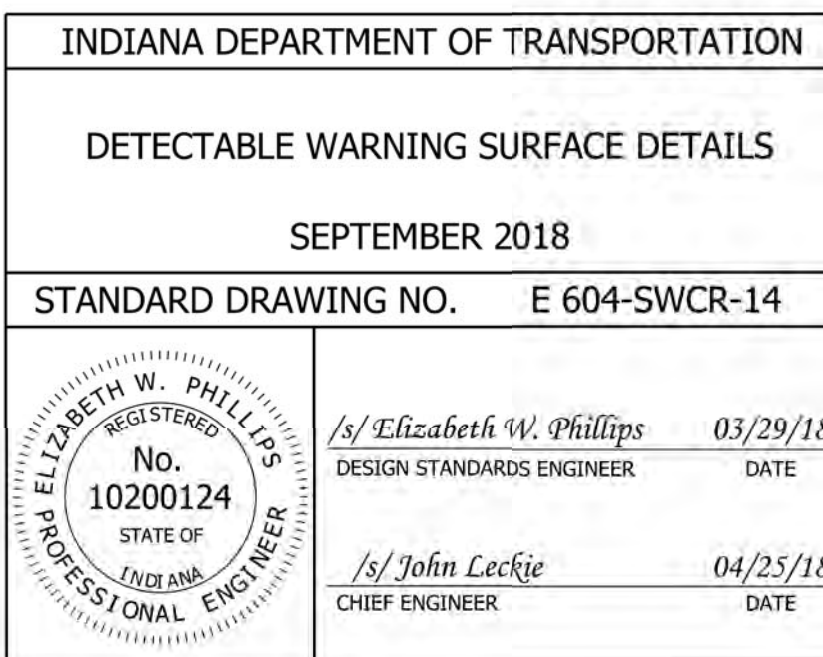
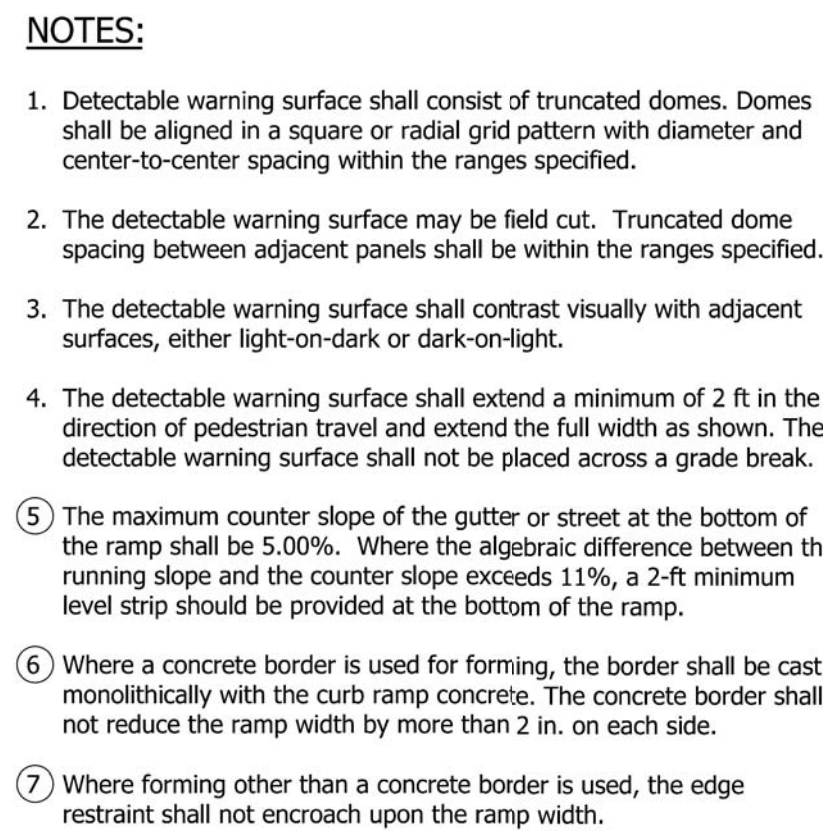
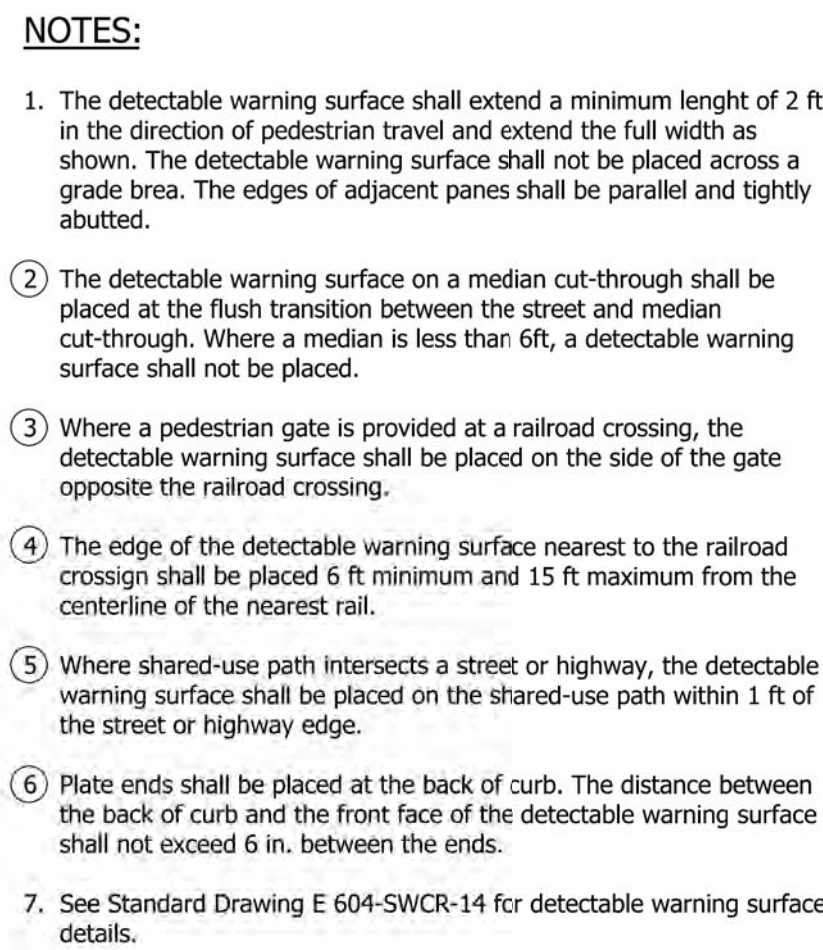
Section 3, Township 13 North, Range 3 East, White River Township, Johnson County, Indiana

SHEET NO.

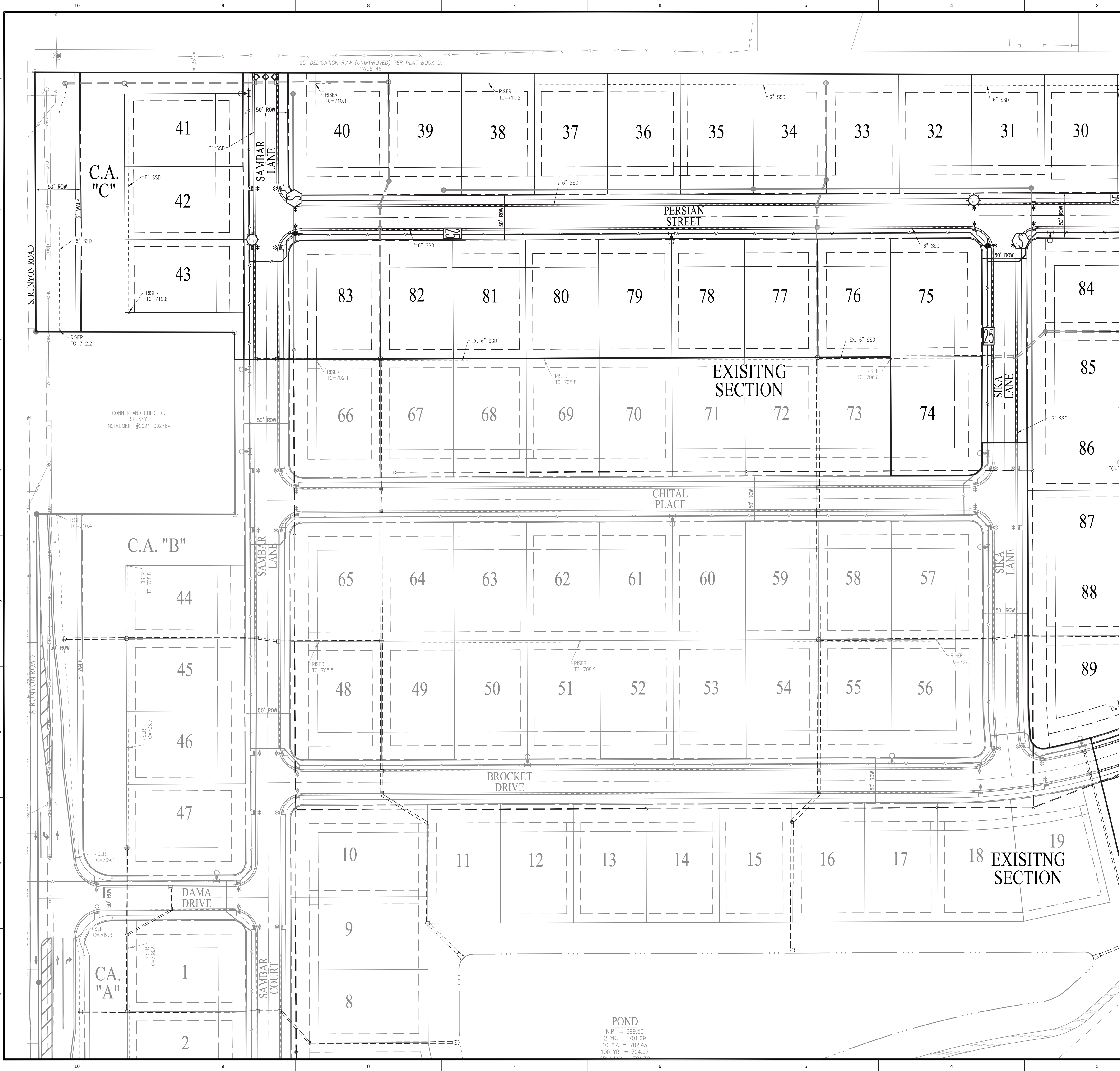
C407

PROJECT NO.

W21.0353-2

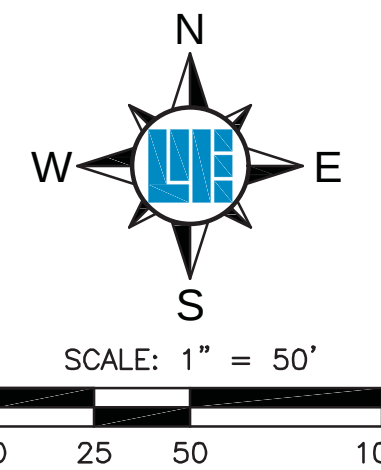
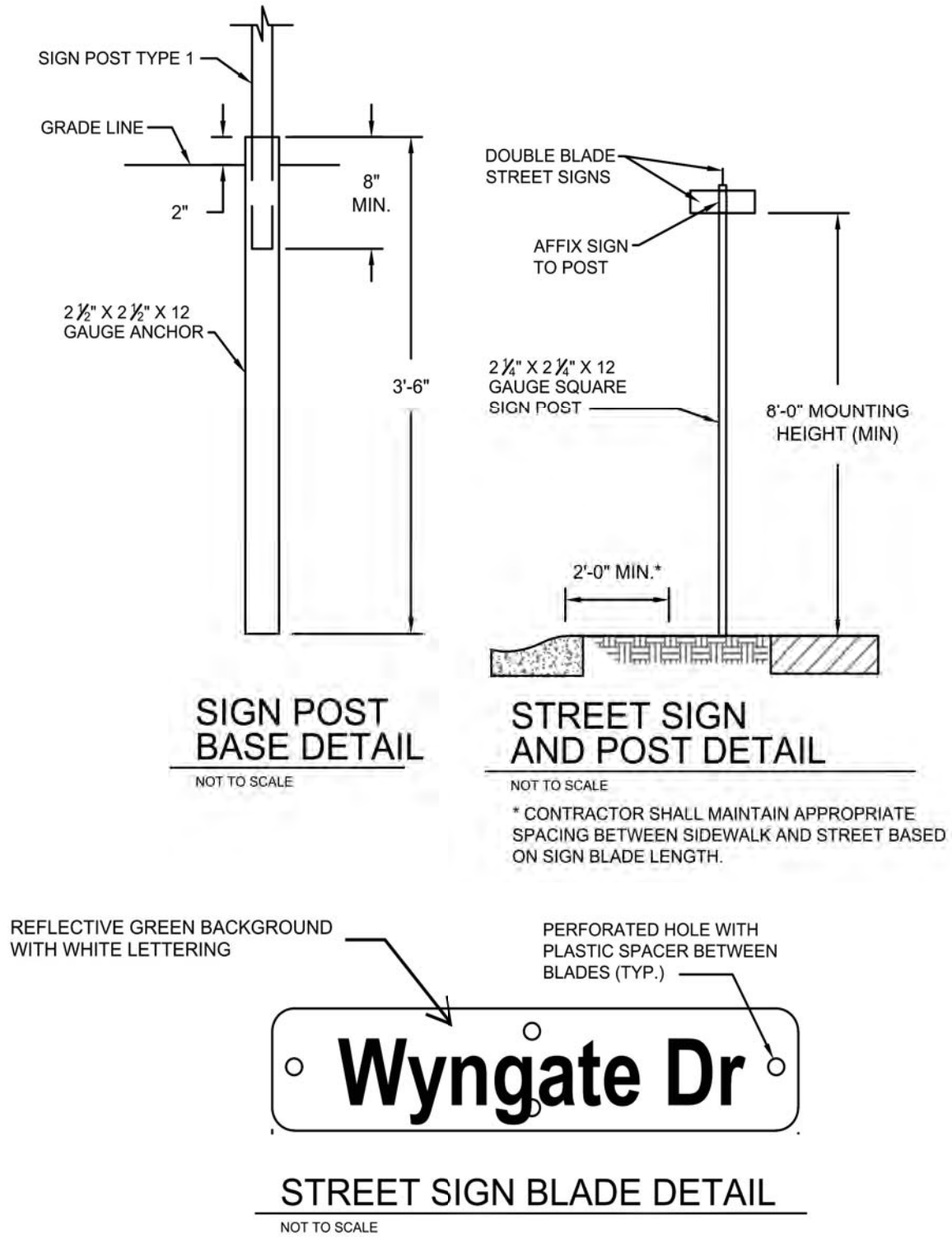


LOCATION: 142031W010353Section 2Engineeringdesign\corsec409 Traffic Control and SSD Plan.dwg
DATE/TIME: April 28, 2023 10:37am
PLOTTER: HP-1000



TRAFFIC LEGEND			
SYMBOL	TYPE	SPECIFICATION	QUANTITY
	SPEED LIMIT (25 MPH)	FIG. P-15D	6
	STOP SIGN	R1-1	6
	STREET SIGN	FIG. P-15D	6
	STREET LIGHT	SEE DETAIL	6
	TEMPORARY BARRIER	PER INDOT STANDARDS	3

NOTES
ALL TRAFFIC CONTROL SIGNS SHALL CONFORM TO CHAPTER 2 OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), CURRENT REVISION.



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PROJECT NO.: W21.0353-2
DWG NAME: C409 Traffic Control and SSD Plan
DESIGNED BY: JCS
DRAWN BY: MEN
CHECKED BY: JP
DATE: 04/28/2023

REVISIONS AND ISSUES

DATE	BY	REVISIONS AND ISSUES
04/28/2023		

DUANE A. SHARRER
REGISTERED
No. 890258
STATE OF INDIANA
PROFESSIONAL ENGINEER

DUANE A. SHARRER P.E. 890258

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DEERFIELD SECTION 2
RUNYON ROAD, NORTH OF OLIVE BRANCH ROAD, JOHNSON COUNTY, IN
TRAFFIC CONTROL, SIGNAGE AND SSD PLAN
Section 3, Township 13 North, Range 3 East, White River Township, Johnson County, Indiana

SHEET NO.
C409

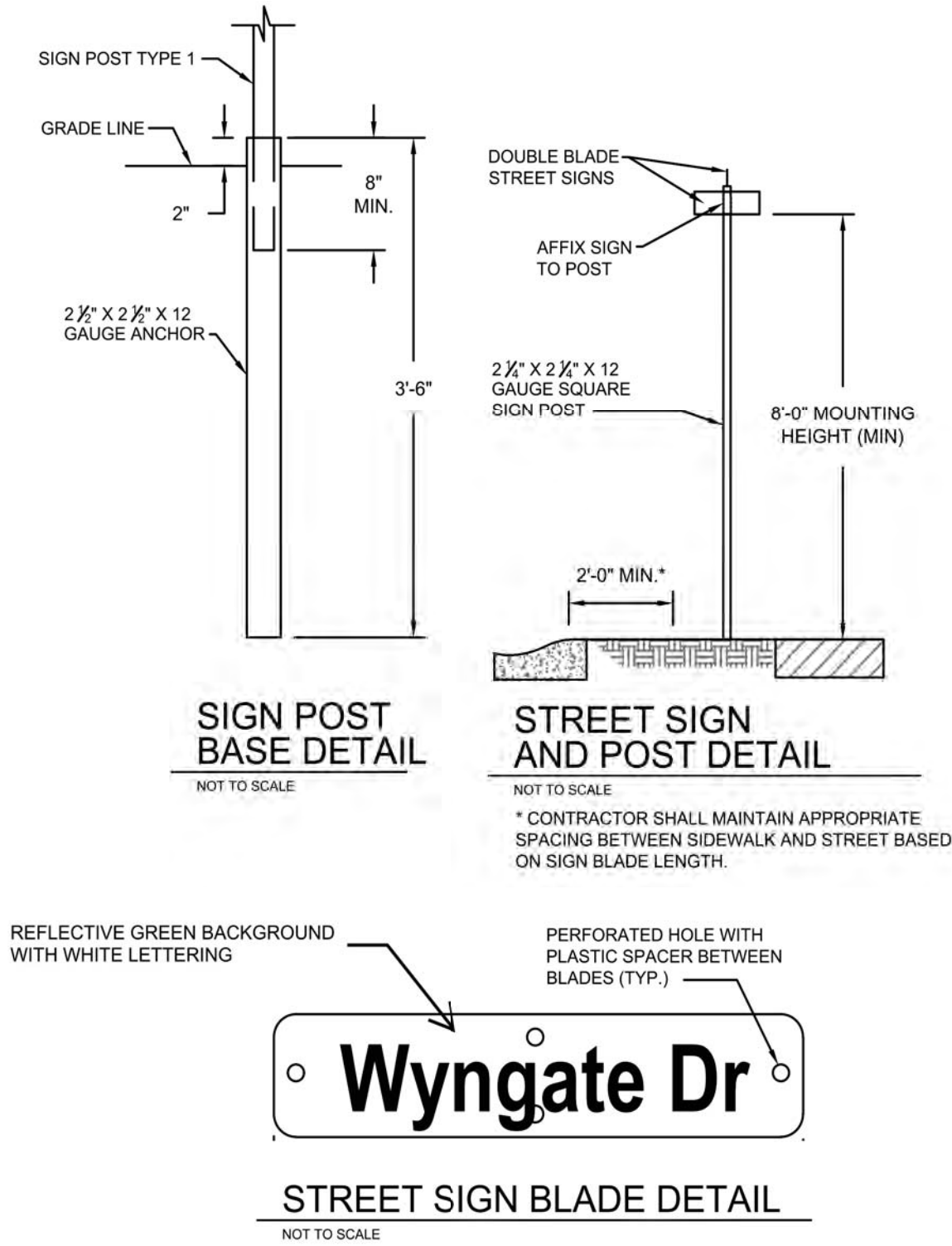
PROJECT NO.
W21.0353-2

LOCATION: W21.0353-2 Deerfield Section 2 Engineering design cross section C410 Traffic Control and SSD Plan.dwg
DATE: 04/28/2023
DRAWN BY: JLP
CHECKED BY: JLP
DATE: 04/28/2023
PLOT: 10:37 am
PLOTTER: HP DesignJet T1100e



TRAFFIC LEGEND			
SYMBOL	TYPE	SPECIFICATION	QUANTITY
	SPEED LIMIT (25 MPH)	FIG. P-15D	6
	STOP SIGN	R1-1	6
	STREET SIGN	FIG. P-15D	6
	STREET LIGHT	SEE DETAIL	6
	TEMPORARY BARRIER	PER INDOT STANDARDS	3

NOTES
ALL TRAFFIC CONTROL SIGNS SHALL CONFORM TO CHAPTER 2 OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), CURRENT REVISION.



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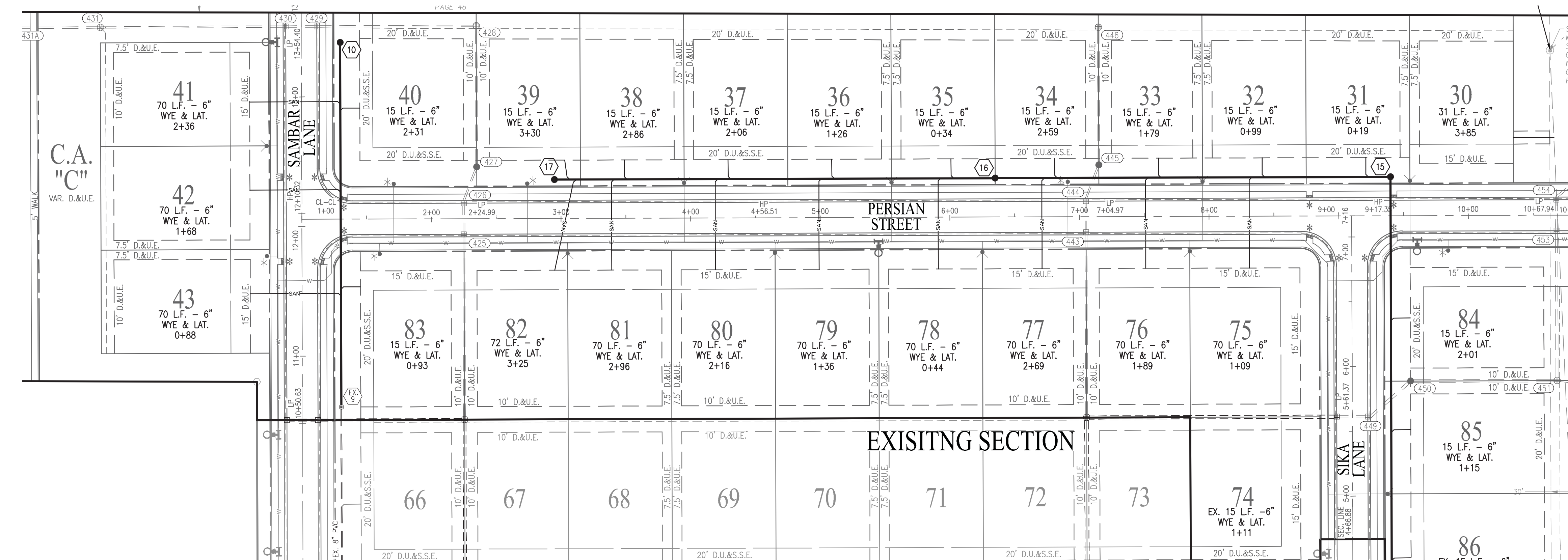
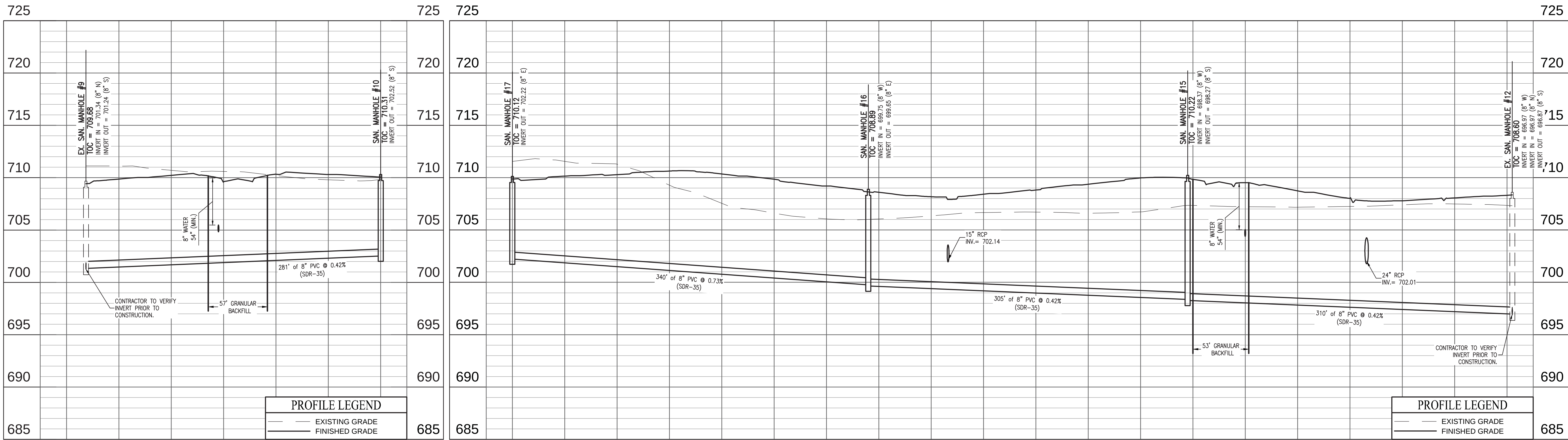
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PROJECT NO.	W21.0353-2
DWG NAME	C410 Traffic Control and SSD Plan
DESIGNED BY	JLP
DRAWN BY	JLP
CHECKED BY	JLP
DATE	04/28/2023

DUANE A. SHARRER
REGISTERED PROFESSIONAL ENGINEER
No. 890258
STATE OF INDIANA
DUANE A. SHARRER P.E. 890258

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DEERFIELD SECTION 2
RUNYON ROAD, NORTH OF OLIVE BRANCH ROAD, JOHNSON COUNTY, IN
TRAFFIC CONTROL, SIGNAGE AND SSD PLAN
Section 3, Township 13 North, Range 3 East, White River Township, Johnson County, Indiana

SHEET NO.
C410
PROJECT NO.
W21.0353-2



- ### SANITARY SEWER NOTES
1. THE CONTRACTOR SHALL CONTACT APPLICABLE UNDERGROUND-PLANT PROTECTION/LOCATION SERVICE AT LEAST 72 HOURS PRIOR TO ANY WORK.
 2. THE CONTRACTOR SHALL CONTACT THE OWNER AND/OR ENGINEER IF UTILITIES APPEAR TO BE IN CONFLICT WITH THE PROPOSED IMPROVEMENTS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
 3. THE PLANS SHOW THE LOCATION OF ALL KNOWN UTILITIES LOCATED WITHIN THE LIMITS OF CONSTRUCTION ACCORDING TO INFORMATION PROVIDED BY THE VARIOUS UTILITY COMPANIES. PREVIOUS CONSTRUCTION PLANS AND AS EVIDENCED BY OBSERVATION OF ABOVE GROUND CONDITIONS BY THE SURVEYOR. THE ACCURACY OF THIS INFORMATION IS NOT GUARANTEED.
 4. THE LOCATION AND PROTECTION OF UTILITY STRUCTURES, THEIR SUPPORT AND MAINTENANCE DURING CONSTRUCTION IS THE EXPRESS RESPONSIBILITY OF THE CONTRACTOR.
 5. THE CONTRACTOR SHALL CONTACT ALL APPLICABLE UTILITY OWNERS TO VERIFY ANY AND ALL FEES ASSOCIATED WITH THE INSTALLATION OF UTILITIES.
 6. ALL CONSTRUCTION ON THIS SITE TO BE PERFORMED IN COMPLIANCE WITH O.S.H.A. STANDARDS FOR WORKER SAFETY.
 7. ANY PART OF SANITARY TRENCHES RUNNING UNDER OR WITHIN 5' OF PAVEMENT TO BE BACKFILLED WITH GRANULAR MATERIAL.
 8. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY LOCATION, SIZE, AND ELEVATION OF EXISTING UTILITIES, STRUCTURES, PIPES, AND PAVEMENTS, AS RELATED TO THEIR WORK. NOTIFY ENGINEER OF ANY CONFLICT AND/OR DISCREPANCIES IN THE CONSTRUCTION DOCUMENTS.
 9. CLEARANCE BETWEEN STORM / SANITARY SEWER SYSTEMS AND DOMESTIC/FIRE LINE SERVICE, SHALL BE MAINTAINED AT 10' HORIZONTAL AND 18" VERTICAL.
 10. CONTRACTOR TO INSTALL CONCRETE CRADLES AT PIPE CROSSINGS WHEN THE VERTICAL SEPARATION AS MEASURED FROM THE EXTERIOR OF THE PIPES, BETWEEN SANITARY SEWERS, WATER MAINS AND STORM SEWERS IS 18" OR LESS.
 11. SANITARY SEWER MAINS WITHIN 10' OF WATER LINE SHALL BE C900 WATER MAIN GRADE PVC.
 12. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO ITS CONDITION PRIOR TO CONSTRUCTION.
 13. WHEN PERFORMING EXCAVATIONS DURING PERIODS OF WET WEATHER, PROVIDE ADEQUATE DEWATERING, DRAINAGE AND GROUND WATER MANAGEMENT TO CONTROL MOISTURE OF SOILS.
 14. COMPACTED "B" BORROW BACK FILL REQUIRED OVER ALL UTILITIES IN PAVED AREAS.
 15. ALL UTILITY STRUCTURES IN PAVED AREAS SHALL BE FLUSH WITH PAVEMENT AND SHALL HAVE TRAFFIC BEARING RINGS AND COVERS RATED FOR H20 LOADING.
 16. FOLLOW ALL LOCAL AND STATE CODES IN REFERENCE TO SANITARY SEWER INSTALLATION.
 17. SANITARY SEWER LATERALS SHALL BE BACKFILLED WITH GRANULAR MATERIAL, FOR THE ENTIRE LENGTH OF THE PIPE.
 18. ALL EXISTING MANHOLES SHALL BE ADJUSTED TO NEW FINISH GRADE ELEVATIONS.
 19. CLEANSOUTS ARE REQUIRED WITHIN 18-60 INCHES OF THE BUILDING AND EVERY 100 FEET ALONG THE LATERAL.
 20. LATERALS STATIONS ARE FROM THE NEAREST DOWNSTREAM MANHOLE.
 21. REFER TO ASTM D2321 FOR INSTALLATION OF PVC SANITARY SEWER.
 22. ALL SANITARY SEWER TO HAVE DEFLECTION AND LEAKAGE TESTING AS PER CODE 327 IAC 3-6-19.

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PROJECT NO.: W21.0353-2
DWG NAME: C500 Sanitary PIP
DESIGNED BY: JH
DRAWN BY: JH
CHECKED BY: JH
DATE: 04/28/2023

REVISIONS AND ISSUES

NO.	DATE	DESCRIPTION
1	04/28/2023	ISSUED FOR PERMIT

DUANE A. SHARRER
REGISTERED PROFESSIONAL ENGINEER
No. 890258
STATE OF INDIANA
DUANE A. SHARRER P.E. 890258

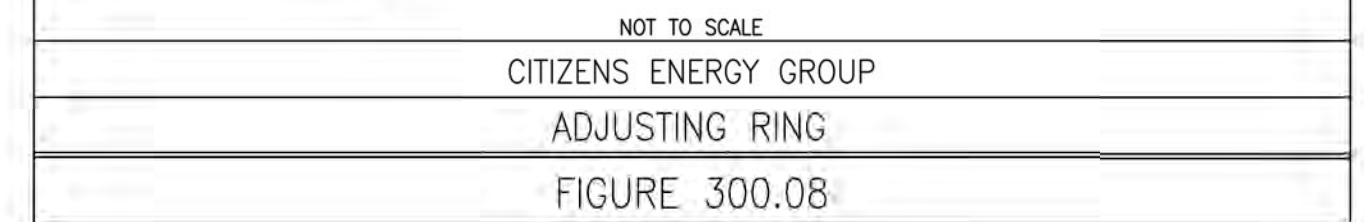
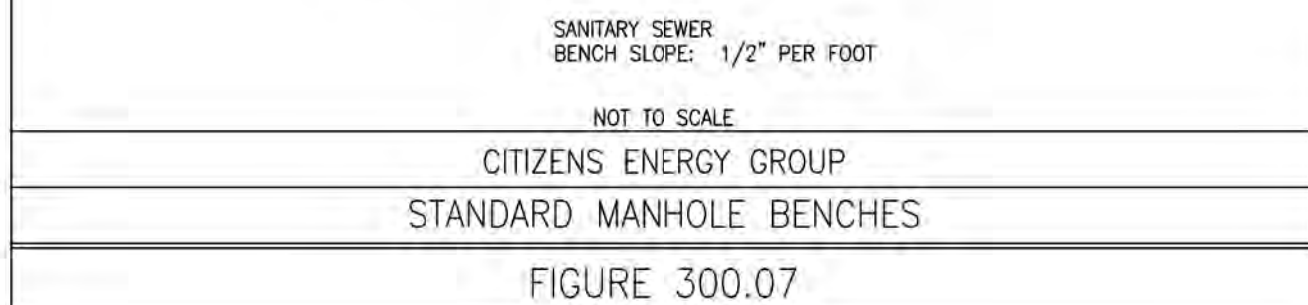
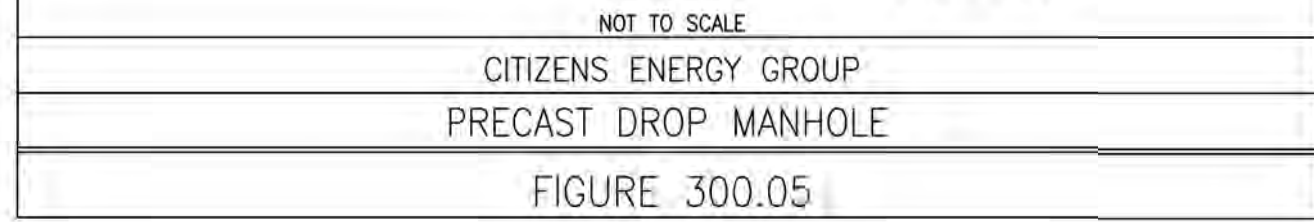
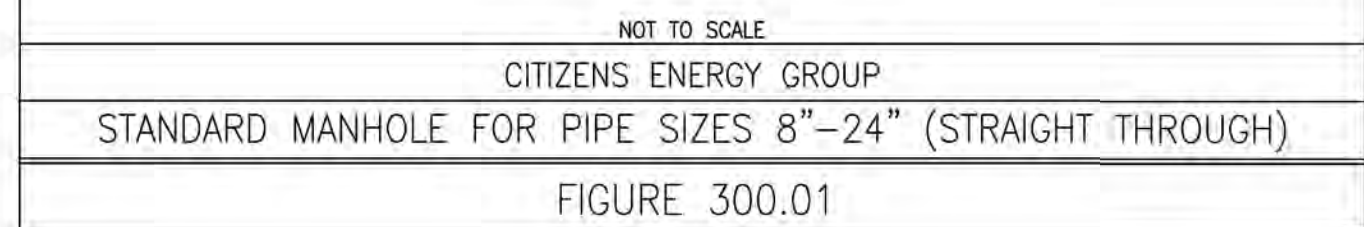
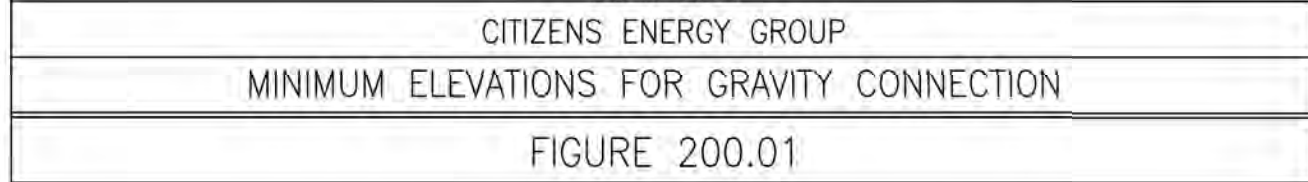
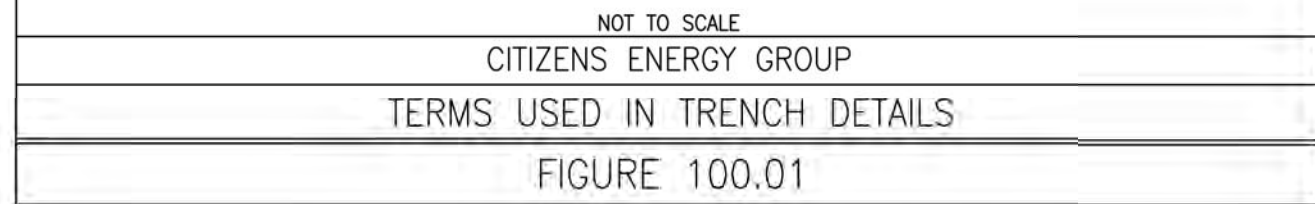
LENNAR
DEERFIELD SECTION 2
RUNYON ROAD, NORTH OF OLIVE BRANCH ROAD, JOHNSON COUNTY, IN
SANITARY SEWER PLAN AND PROFILE
Section 3, Township 13 North, Range 3 East, White River Township, Johnson County, Indiana

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WITHOUT NOTIFYING THE UNDERGROUND
LOCATION SERVICE TWO (2) WORKING
DAYS BEFORE COMMENCING WORK.

SHEET NO.
C500
PROJECT NO.
W21.0353-2

LOCATION: H:\2023\W21.0353\Section 2\Engineering\design\c500 Sanitary PIP.dwg
DATE/TIME: April 28, 2023 10:40am
PLOTTER: HP - plotters





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REVISIONS AND ISSUES	DATE	BY	PROJECT NO.
04/28/2023			VOL 1063.2
			DWG NAME
			6302 Sanitary Sewer Details
			DESIGNED BY:
			SCS
			DRAWN BY:
			BUEN
			CHECKED BY:
			JP
			DATE:



DUANE A. SHARRER
REGISTERED
No.
890258
STATE OF
INDIANA
PROFESSIONAL ENGINEER

Duane A. Sharrer

DUANE A. SHARRER P.E. 890258

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DEERFIELD SECTION 2

RUNYON ROAD, NORTH OF OLIVE BRANCH ROAD, JOHNSON COUNTY, IN

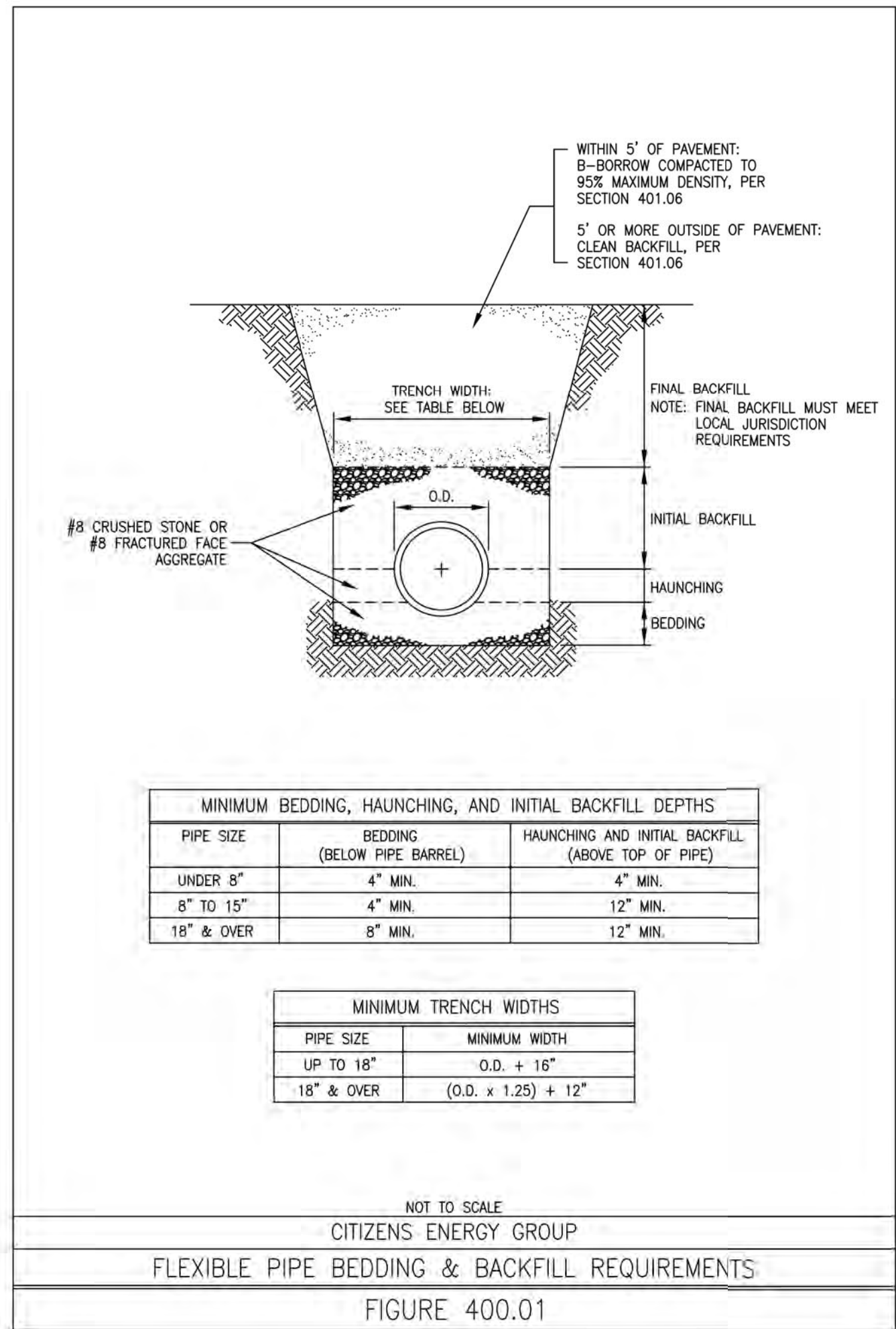
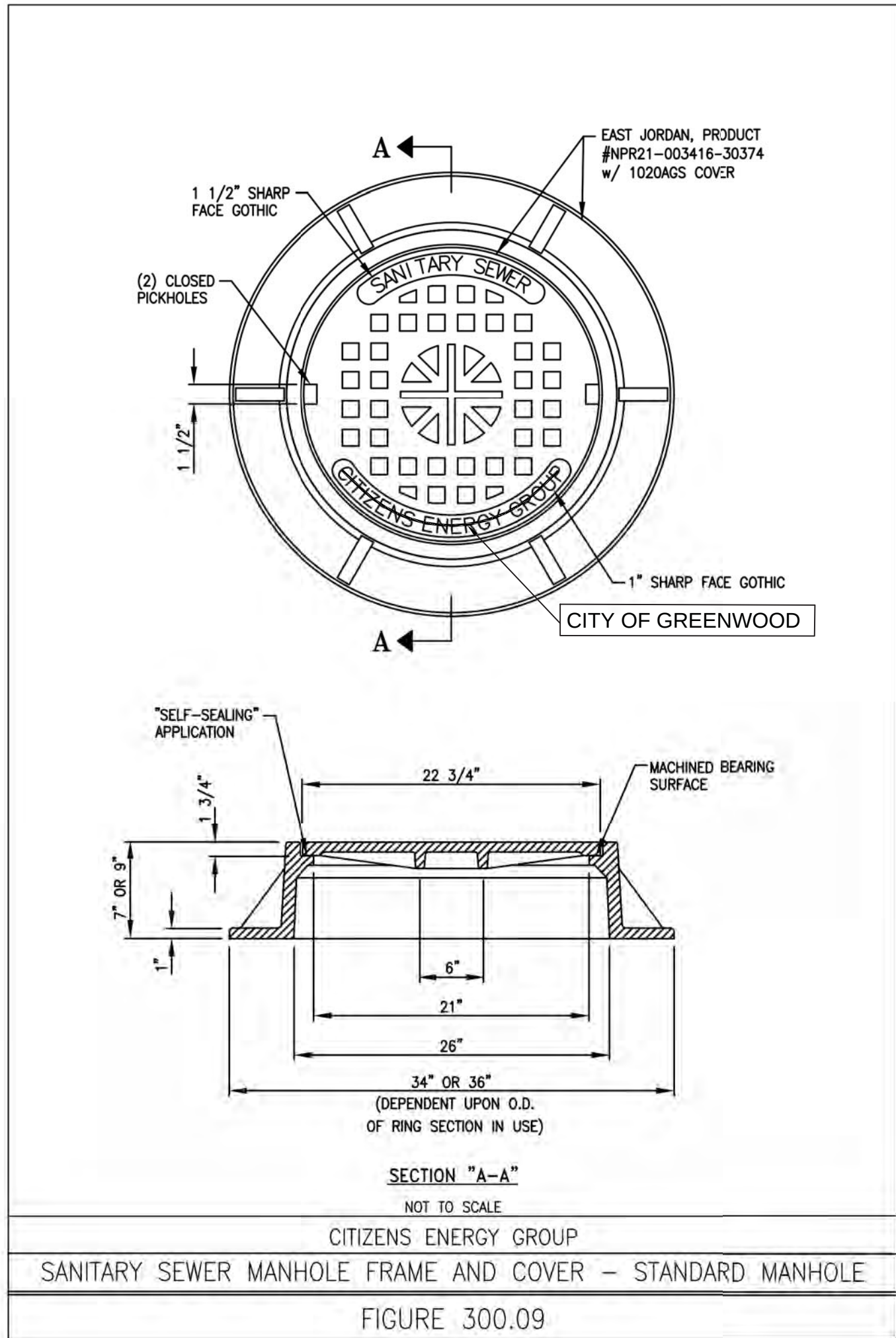
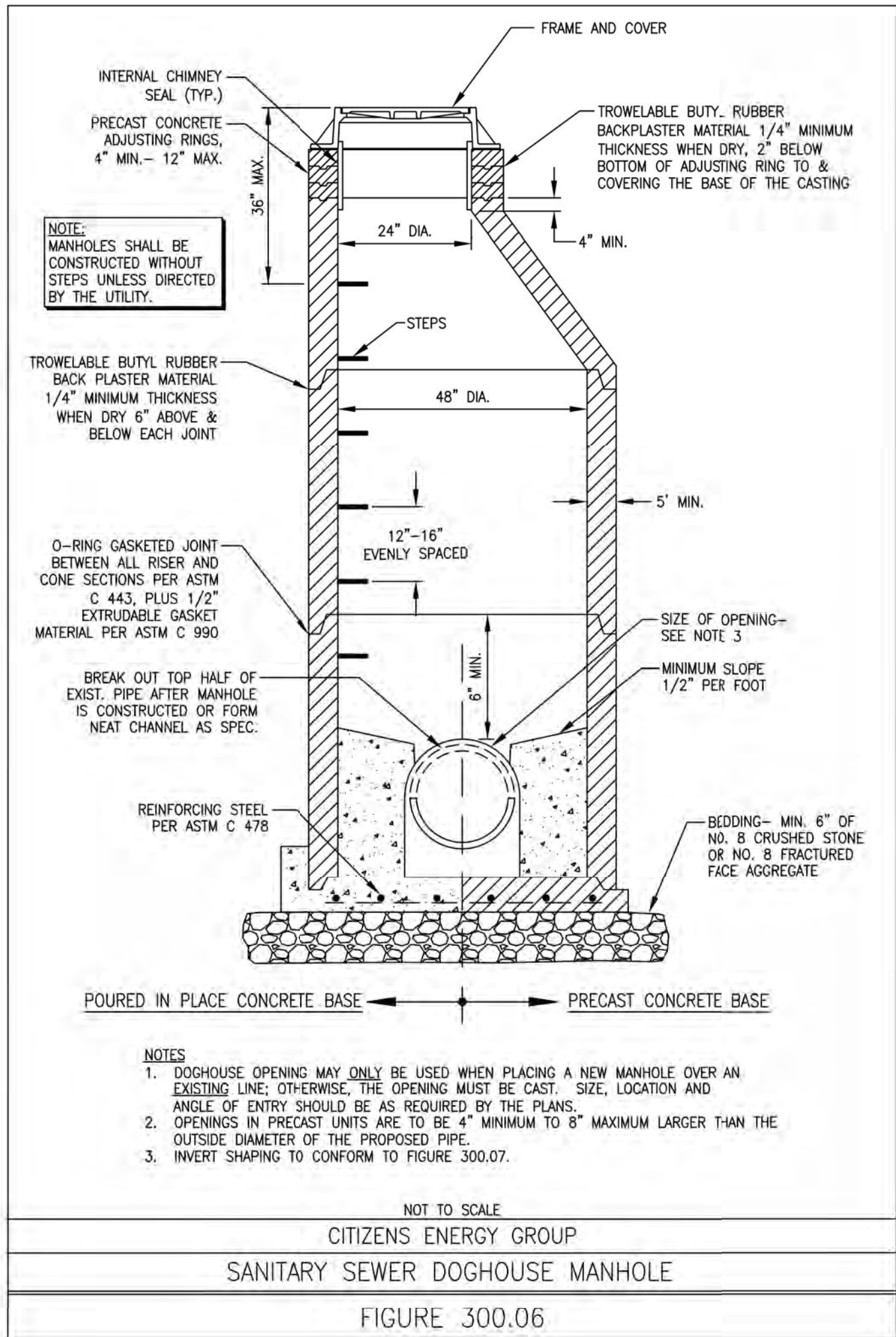
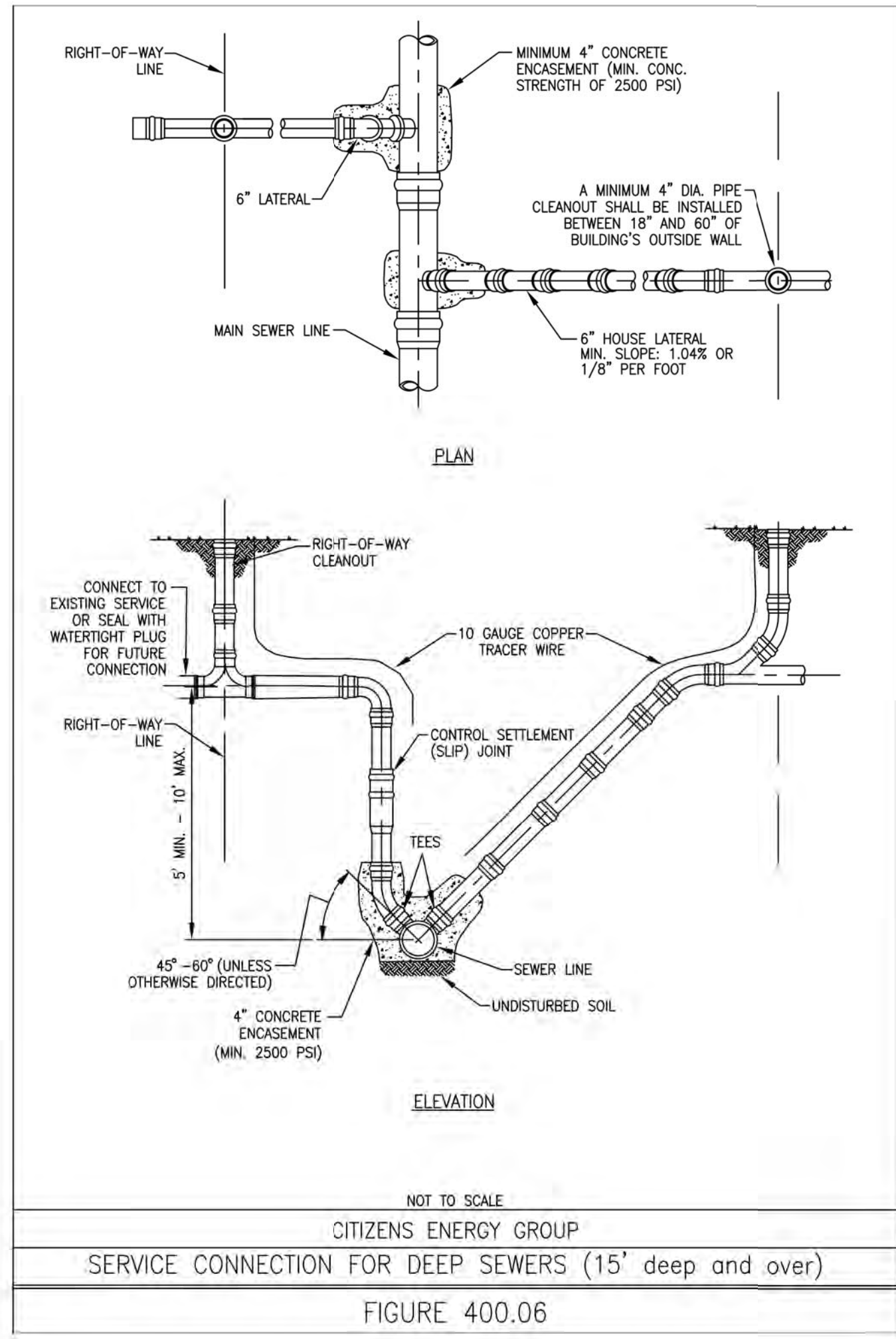
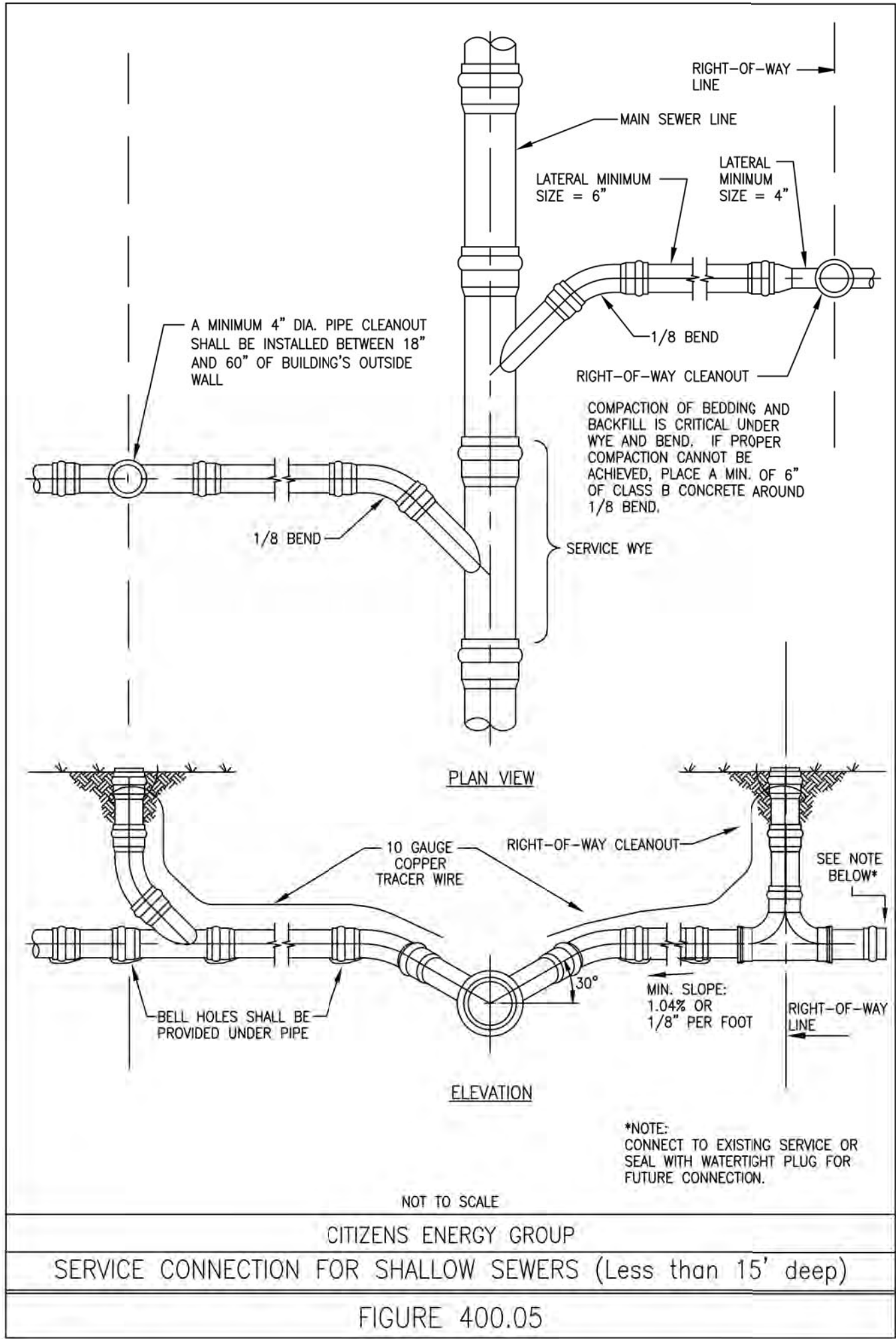
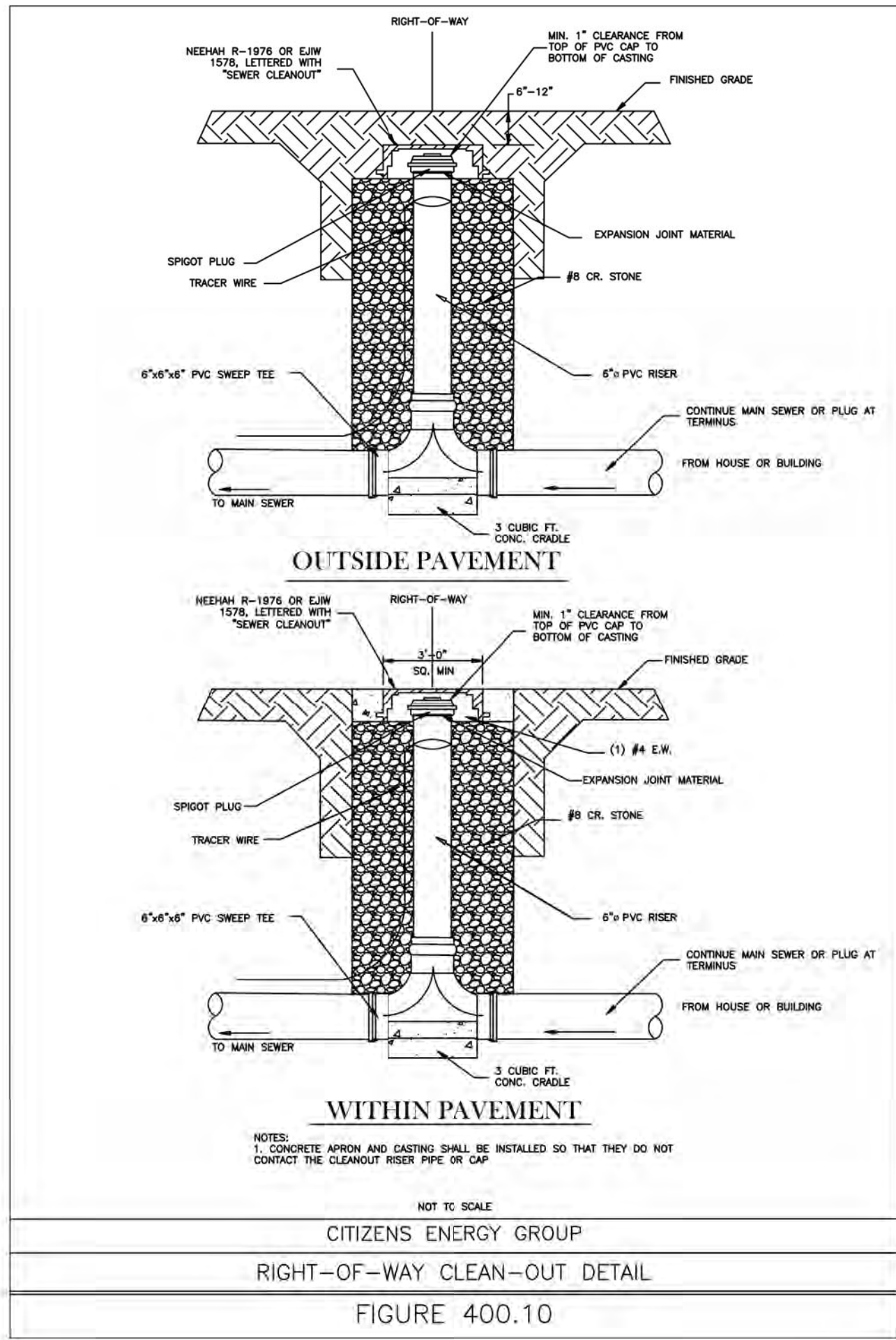
SANITARY SEWER DETAILS

SANITARY SEWER DETAILS

SHEET NO.
C502

PROJECT NO.
W21.0353-2

LOCATION: I:\2023\W21.0353\Section 2\Engineering\design\cross\C502 Sanitary Sewer Details.dwg
DATE/TIME: April 28, 2023 10:13am
PLOT/ED BY: jllmbs



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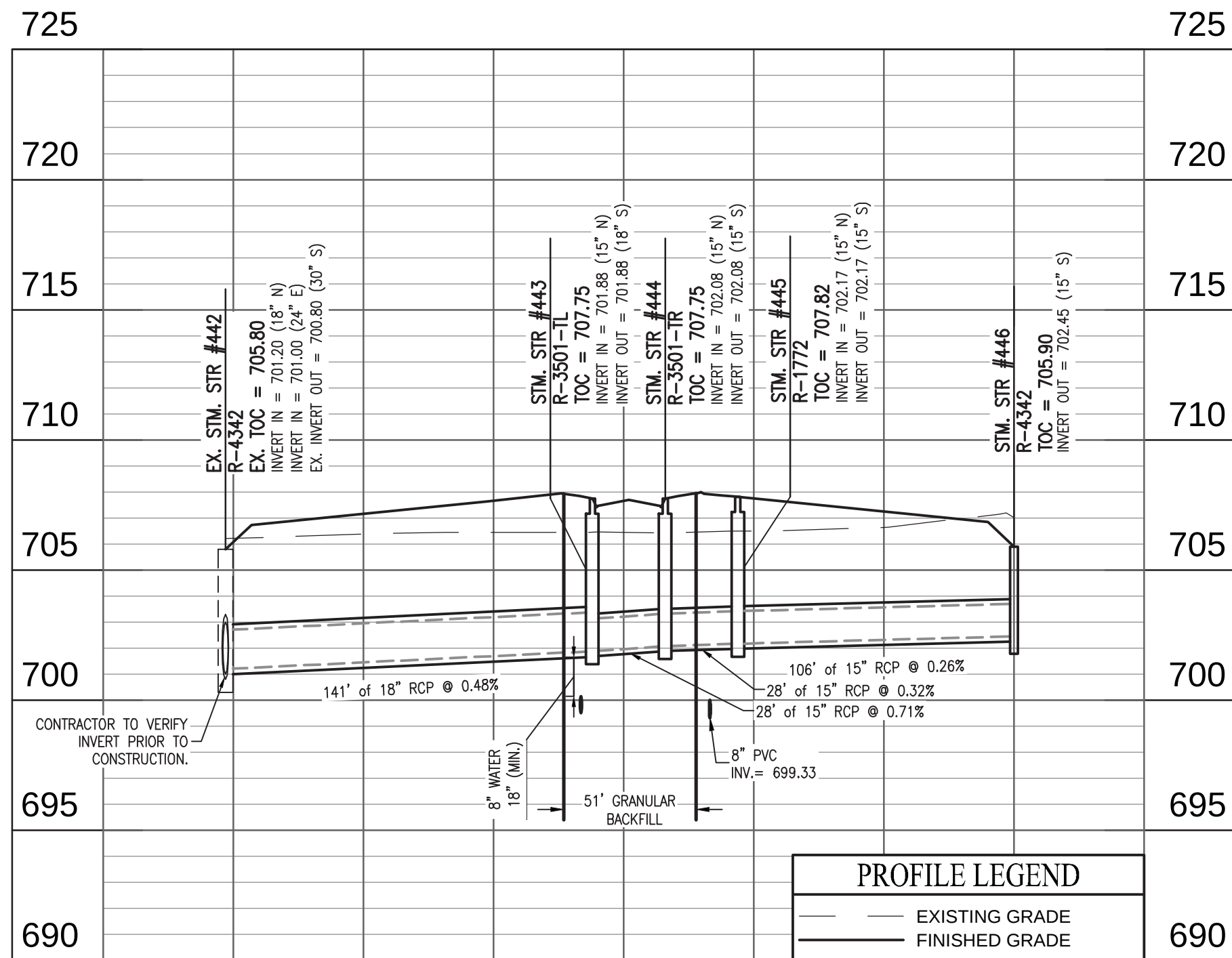
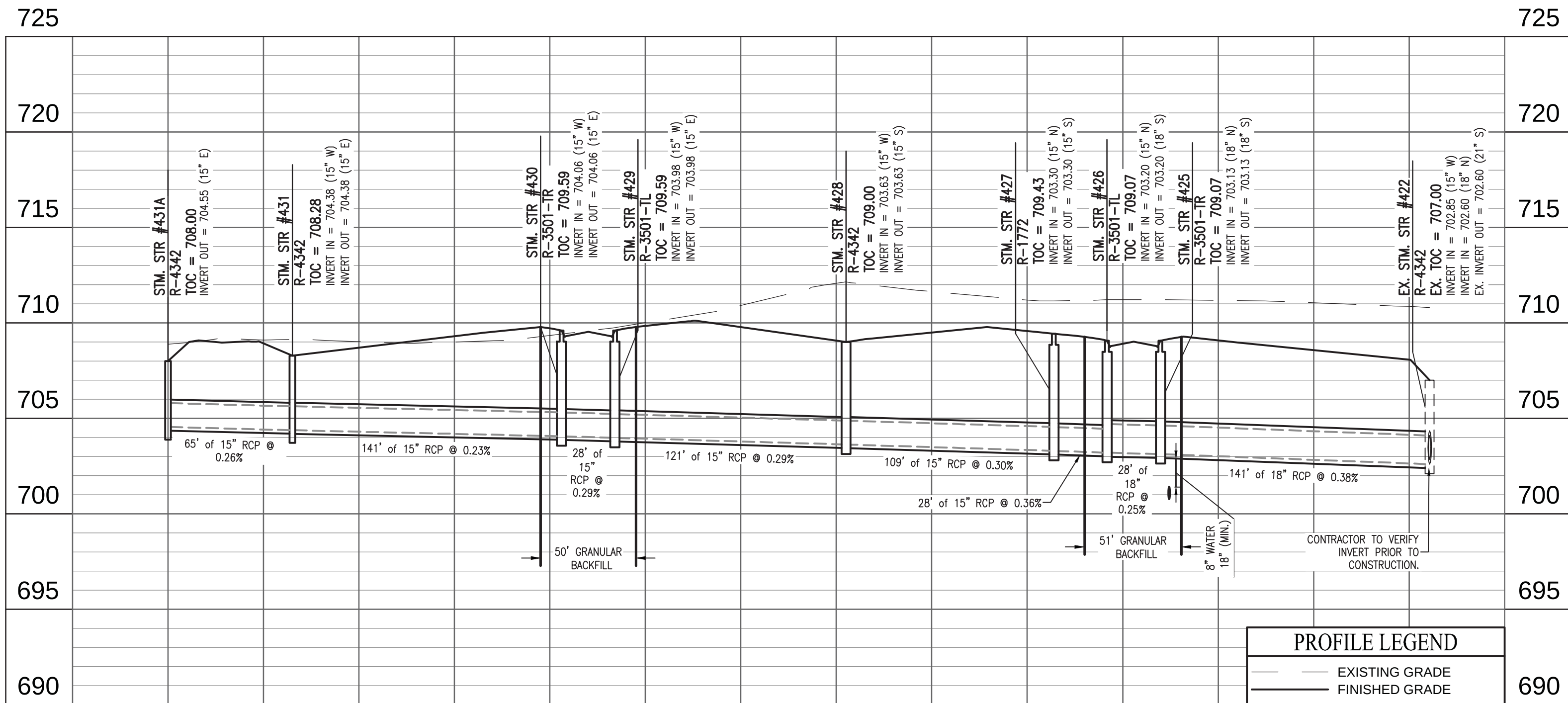
PROJECT NO.	BY	DATE	REVISIONS AND ISSUES
W21.0353-2			
DWG NAME			
DESIGNED BY			
DESIGNED BY			
DRAWN BY			
CHECKED BY			
DATE			

DUANE A. SHARRER
No. 890258
STATE OF INDIANA
PROFESSIONAL ENGINEER
DUANE A. SHARRER P.E. 890258

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DEERFIELD SECTION 2
RUNYON ROAD, NORTH OF OLIVE BRANCH ROAD, JOHNSON COUNTY, IN
SANITARY SEWER DETAILS
Section 3, Township 13 North, Range 3 East, White River Township, Johnson County, Indiana

SHEET NO.
C503
PROJECT NO.
W21.0353-2

LOCATION: I:\2023\W2103532\Section 2\Engineering\design\c600 Storm Plan.dwg
DATE/TIME: April 28, 2023 10:13am
PLOTTER: P1 - Illinois



STORM SEWER NOTES

- THE CONTRACTOR SHALL ADHERE TO ALL TERMS AND CONDITIONS AS OUTLINED IN THE EPA OR APPLICABLE STATE GENERAL N.P.D.E.S. PERMIT FOR STORMWATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITIES AND STORMWATER POLLUTION PREVENTION PLAN.
- REFER TO THE INDIANA DEPARTMENT OF TRANSPORTATION (INDOT) STANDARD SPECIFICATIONS, LATEST EDITION, FOR BASIC MATERIALS AND CONSTRUCTION METHODS.
- THE CONTRACTOR SHALL CONTACT APPLICABLE STATE UNDERGROUND LOCATION SERVICE AT LEAST 72 HOURS PRIOR TO ANY WORK AND SHALL CONTACT THE OWNER AND/OR ENGINEER SHOULD UTILITIES APPEAR TO BE IN CONFLICT WITH THE PROPOSED IMPROVEMENTS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
- THE PLANS SHOW THE LOCATIONS OF ALL KNOWN UTILITIES LOCATED WITHIN THE LIMITS OF CONSTRUCTION ACCORDING TO INFORMATION PROVIDED BY THE VARIOUS UTILITY COMPANIES, PREVIOUS CONSTRUCTION PLANS AND AS EVIDENCED BY OBSERVATION OF ABOVE GROUND CONDITIONS BY THE SURVEYOR. THE ACCURACY OF THIS INFORMATION IS NOT GUARANTEED.
- THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES TO LOCATE MAINS, CONDUITS, SERVICE LINES, AND OTHER FACILITIES WITHIN THE CONSTRUCTION LIMITS. THE LOCATION AND PROTECTION OF UTILITY STRUCTURES, THEIR SUPPORT AND MAINTENANCE DURING CONSTRUCTION (IN COOPERATION WITH APPLICABLE UTILITY COMPANY) IS THE EXPRESSED RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR SHALL CONTACT ALL APPLICABLE UTILITIES AND VERIFY ANY AND ALL FEES ASSOCIATED WITH THE INSTALLATION OF ALL UTILITIES.
- ALL CONSTRUCTION ON THIS SITE TO BE PERFORMED IN COMPLIANCE WITH O.S.H.A. STANDARDS FOR WORKER SAFETY.
- ANY PART OF STORM SEWER TRENCHES RUNNING UNDER OR WITHIN 5' OF PAVEMENT TO BE BACKFILLED WITH GRANULAR MATERIAL.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY LOCATIONS, SIZES, AND ELEVATIONS OF EXISTING UTILITIES, STRUCTURES, PIPES, PAVEMENTS AS RELATED TO THEIR WORK. NOTIFY ENGINEER OF ANY CONFLICT AND/OR DISCREPANCIES IN THE CONSTRUCTION DOCUMENTS.
- MINIMUM CLEARANCE BETWEEN STORM / SANITARY SEWER SYSTEMS AND DOMESTIC/FIRE LINE SERVICE, SHALL BE 10' HORIZONTAL AND 18" VERTICAL.
- CONTRACTOR TO INSTALL CONCRETE CRADLES AT PIPE CROSSING WHEN THE VERTICAL SEPARATION (AS MEASURED FROM THE EXTERIOR OF THE PIPES) BETWEEN SANITARY SEWERS, WATER MAINS AND STORM SEWERS IS 18" OR LESS.
- SANITARY SEWER LINES WITHIN 10', HORIZONTALLY, OF WATER LINES SHALL BE C900 WATER MAIN GRADE PVC.
- IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO ITS CONDITION PRIOR TO CONSTRUCTION.
- WHEN PERFORMING EXCAVATIONS DURING PERIODS OF WET WEATHER, PROVIDE ADEQUATE DEWATERING, DRAINAGE AND GROUND WATER MANAGEMENT TO CONTROL MOISTURE OF SOILS.
- COMPACTED "B" BORROW BACK FILL REQUIRED OVER ALL UTILITIES IN PAVED AREAS.
- FOLLOW ALL LOCAL AND STATE CODES IN REFERENCE TO STORM SEWER INSTALLATION.
- ALL EXISTING MANHOLE AND CATCH BASIN GRATES SHALL BE ADJUSTED TO NEW FINISH GRADE ELEVATIONS.
- EXISTING PIPES WITHIN CONSTRUCTION LIMITS ARE TO BE CLEANED OUT TO REMOVE ALL SILT AND DEBRIS.
- ALL STORM PIPE CONNECTIONS AT STRUCTURES SHALL BE GROUTED TO ASSURE CONNECTIONS AT STRUCTURES ARE WATERTIGHT.
- ALL STORM SEWER STRUCTURES IN PAVED AREAS SHALL BE FLUSH WITH PAVEMENT AND SHALL HAVE TRAFFIC BEARING RING AND COVERS RATED FOR H20 LOADING.
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- ALL FITTINGS AND ACCESSORIES INCLUDING BUT NOT LIMITED TO END CAPS, CLEANOUTS, REDUCERS, ETC., SHALL BE HDPE MATERIAL, IF SPECIFIED, COMPARABLE WITH STORAGE PIPES.
- PROVIDE BACKFILL WITH A MINIMUM OF 4" BEDDING MATERIAL OF #8 AGGREGATE COMPACTED IN 8" LIFTS TO 95% MAXIMUM DRY DENSITY.
- VERIFY EXISTING STORM INVERT ELEVATIONS PRIOR TO STARTING NEW STORM SEWER CONNECTION.

LEGEND: PROPOSED CONDITIONS

- RIGHT-OF-WAY LINE
- PROPOSED STORM SEWER LINE
- SSD
- PROPOSED SANITARY SEWER LINE
- SANITARY SEWER MANHOLE
- PROPOSED WATER LINE
- STORM BEHINE INLET
- STORM INLET
- TOP OF CASTING
- INVERT
- REINFORCED CONCRETE PIPE
- MANHOLE
- STRUCTURE
- DRAINAGE EASEMENT
- DRAINAGE, UTILITY AND SANITARY SEWER EASEMENT
- DRAINAGE, UTILITY AND SEWER EASEMENT
- CONCRETE END SECTION
- MATCH EXISTING
- ME
- TYP. PROP.
- EX.
- R.
- V.W.
- ROW
- B-B
- B.S.L.
- ADA RAMP
- FIRE HYDRANT
- MINIMUM PROTECTION ELEVATION GRADE



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PROJECT NO: W21.0353-2
DWG NAME: C600 Storm Plan
DESIGNED BY: JCS
DRAWN BY: MEN
CHECKED BY: JP
DATE: 04/28/2023

REVISIONS AND ISSUES

04/28/2023

DUANE A. SHARRER
REGISTERED
No. 890258
STATE OF INDIANA
PROFESSIONAL ENGINEER

DUANE A. SHARRER P.E. 890258

LENNAR

DEERFIELD SECTION 2
RUNYON ROAD, NORTH OF OLIVE BRANCH ROAD, JOHNSON COUNTY, IN

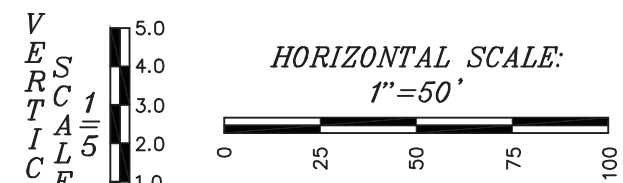
STORM SEWER PLAN AND PROFILE

SHEET NO.

C600

PROJECT NO.

W21.0353-2



1. THE CONTRACTOR SHALL ADDRESS TO ALL TERMS AND CONDITIONS AS OUTLINED IN THE EPA OR APPLICABLE STATE GENERAL N.P.D.E.S. PERMIT FOR STORMWATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITIES AND STORMWATER POLLUTION PREVENTION PLAN.
2. REFER TO THE INDIANA DEPARTMENT OF TRANSPORTATION (INDOT) STANDARD SPECIFICATIONS, LATEST EDITION, FOR BASIC MATERIALS AND CONSTRUCTION METHODS.
3. THE CONTRACTOR SHALL CONTACT APPLICABLE STATE UNDERGROUND LOCATION SERVICE AT LEAST 72 HOURS PRIOR TO ANY WORK AND SHALL CONTACT THE OWNER AND/OR ENGINEER SHOULD UTILITIES APPEAR TO BE IN CONFLICT WITH THE PROPOSED IMPROVEMENTS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
4. THE PLANS SHOW THE LOCATIONS OF ALL KNOWN UTILITIES LOCATED WITHIN THE LIMITS OF CONSTRUCTION ACCORDING TO INFORMATION PROVIDED BY THE VARIOUS UTILITY COMPANIES, PREVIOUS CONSTRUCTION PLANS AND AS EVIDENCED BY OBSERVATION OF ABOVE GROUND CONDITIONS BY THE SURVEYOR. THE ACCURACY OF THIS INFORMATION IS NOT GUARANTEED.
5. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES TO LOCATE MAINS, SERVICE LINES, AND OTHER FACILITIES WITHIN THE CONSTRUCTION LIMITS. THE LOCATION AND PROTECTION OF UTILITY STRUCTURES, THEIR SUPPORT AND MAINTENANCE DURING CONSTRUCTION (IN COOPERATION WITH APPLICABLE UTILITY COMPANY) IS THE EXPRESSED RESPONSIBILITY OF THE CONTRACTOR.
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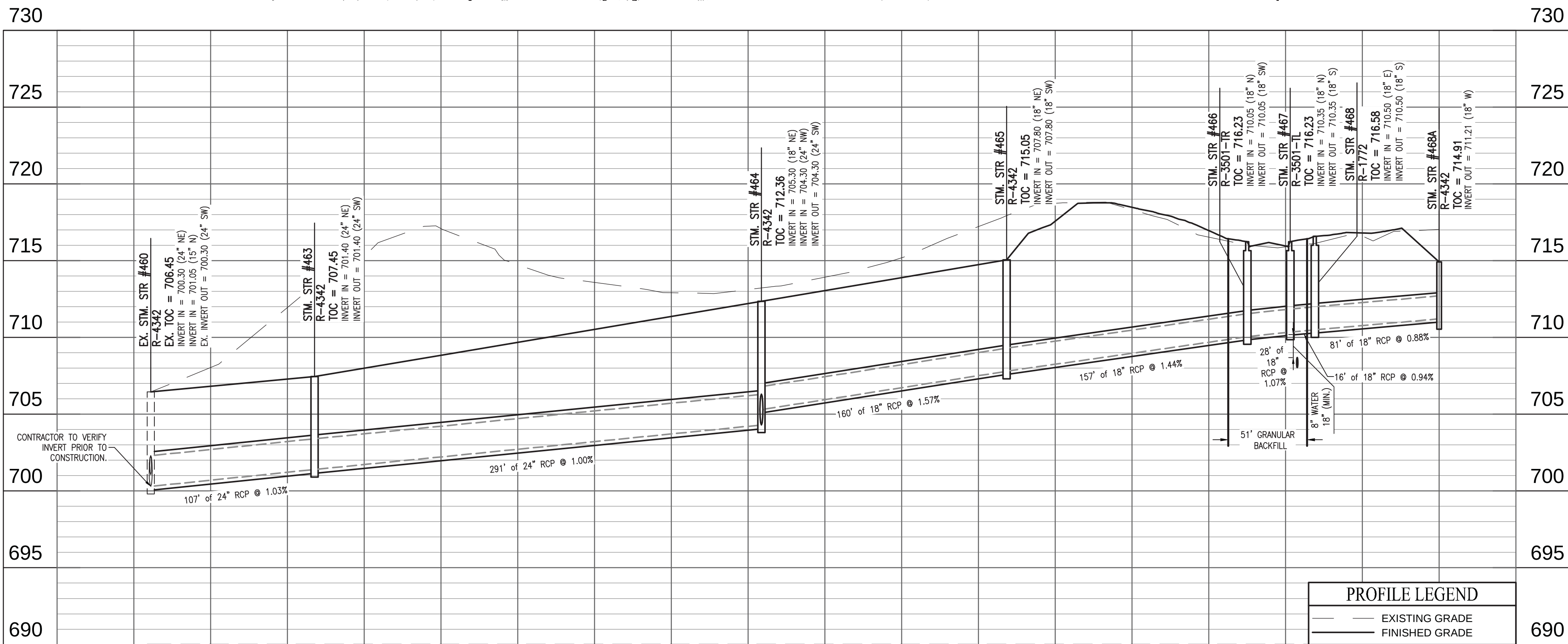
	=	RIGHT-OF-WAY LINE
	=	PROPOSED STORM SEWER LINE
	=	SSD
	=	PROPOSED SANITARY SEWER LINE
	=	SANITARY SEWER MANHOLE
	=	PROPOSED WATER LINE
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	=	STORM INLET
	=	TOP OF CASTING
	=	INVERT
	=	REINFORCED CONCRETE PIPE
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	=	STRUCTURE
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	=	DRAINAGE, UTILITY AND SEWER EASEMENT
	=	CONCRETE END SECTION
	=	MATCH EXISTING
	=	TYPICAL
	=	PROPOSED
	=	EXISTING
	=	RADIUS
	=	VARIABLE WIDTH
	=	RIGHT-OF-WAY
	=	BACK OF CURB
	=	BUILDING SETBACK LINE
	=	ADA RAMP
	=	FIRE HYDRANT
	=	MINIMUM PROTECTION ELEVATION GRADE



SHEET NO.
C
PROJECT
W

01
3-2

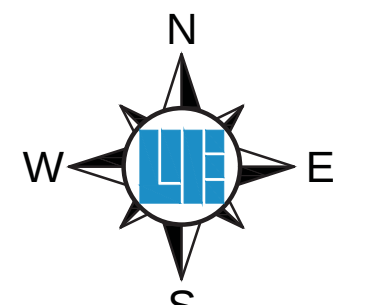
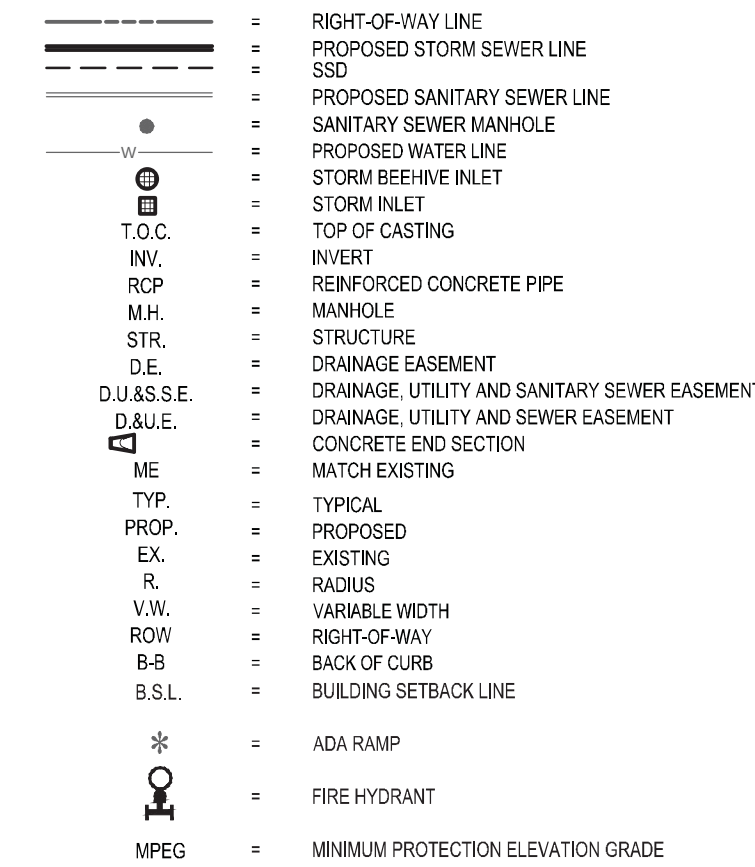
1



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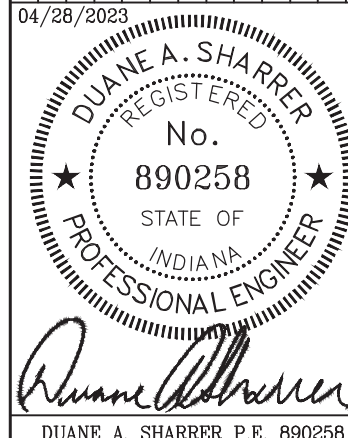


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800		452	-	6408
317		843	-	0546 f_{ax}

ALLAN H. WEIHE, P.E., L.S. - FOUNDER

REVISIONS AND ISSUES	DATE	BY	PROJECT NO.: W21.0353-2
			DWG NAME: C600 Storm PIP
			DESIGNED BY: JCS
			DRAWN BY: MEN
			CHECKED BY: JP
			DATE:



LENNAR®

DEERFIELD SECTION 2

RUNYON ROAD, NORTH OF OLIVE BRANCH ROAD, JOHNSON COUNTY, IN

STORM SEWER PLAN AND PROFILE

Section 3 Township 13 North Range 3 East White River Township Johnson County Indiana

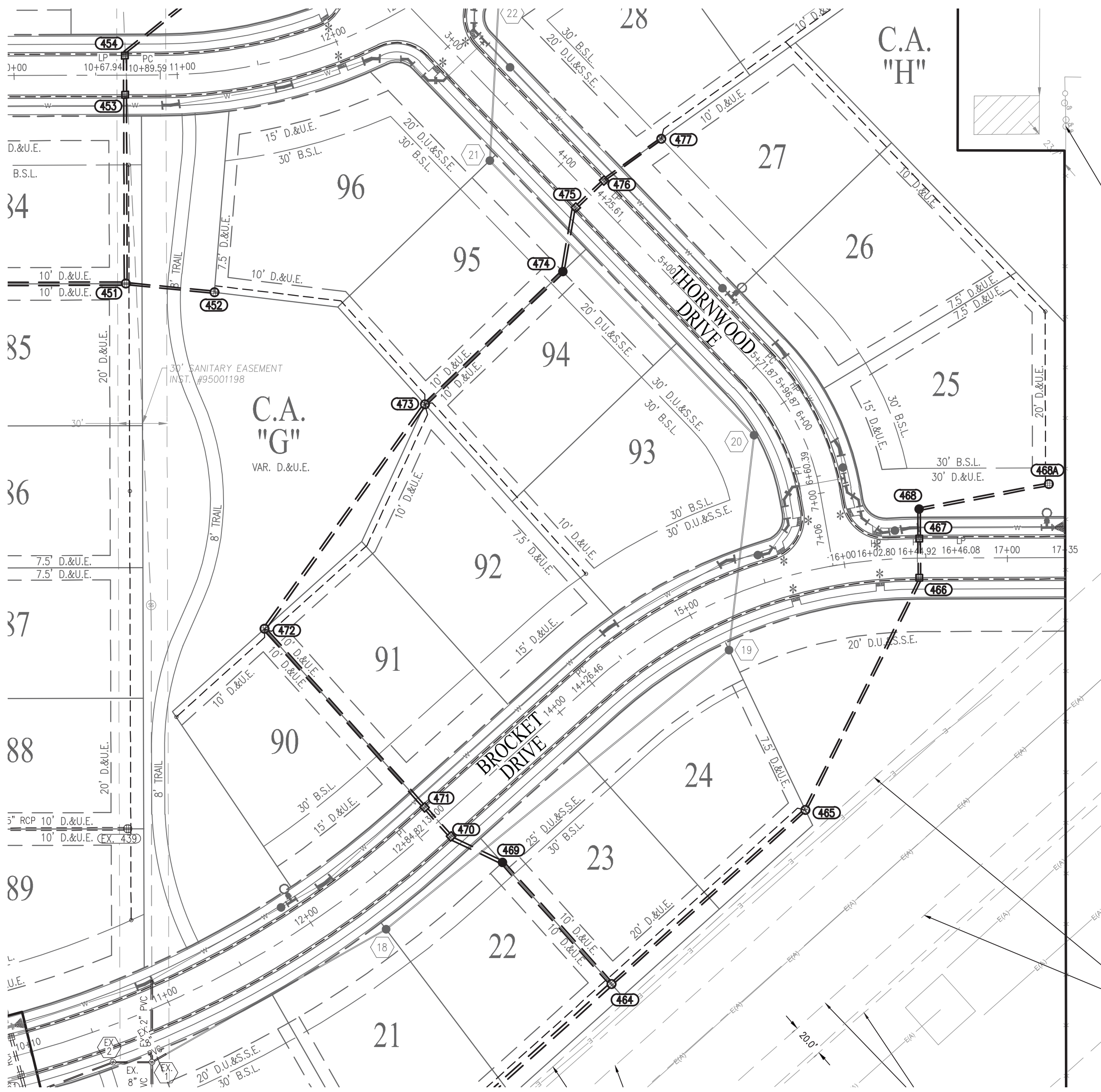
SHEET NO.

C602

PROJECT NO.
W21.0353-2

STORM SEWER STRUCTURE DATA TABLE				
STRUCTURE NUMBER	TOP OF CASTING	STRUCTURE TYPE	CASTING TYPE	INVERT
425	709.07	CURB INLET, 48" DIA.	R-3501-TR	INV IN (N)= 703.13 (18" RCP) INV OUT (S)= 703.13 (18" RCP)
426	709.07	CURB INLET, 48" DIA.	R-3501-TL	INV IN (N)= 703.20 (15" RCP) INV OUT (S)= 703.20 (18" RCP)
427	709.43	48" DIA. MANHOLE	R-1772	INV IN (N)= 703.30 (15" RCP) INV OUT (S)= 703.30 (15" RCP)
428	709.00	BEEHIVE INLET, 48" DIA.	R-4342	INV IN (W)= 703.63 (15" RCP) INV OUT (S)= 703.63 (15" RCP)
429	709.59	CURB INLET, 48" DIA.	R-3501-TL	INV IN (W)= 703.98 (15" RCP) INV OUT (E)= 703.98 (15" RCP)
430	709.59	CURB INLET, 48" DIA.	R-3501-TR	INV IN (W)= 704.06 (15" RCP) INV OUT (E)= 704.06 (15" RCP)
431A	708.00	BEEHIVE INLET, 24 X 24	R-4342	INV OUT (E)= 704.55 (15" RCP)
431	708.28	BEEHIVE INLET, 24 X 24	R-4342	INV IN (W)= 704.38 (15" RCP) INV OUT (E)= 704.38 (15" RCP)
443	707.75	CURB INLET, 48" DIA.	R-3501-TL	INV IN (N)= 701.88 (15" RCP) INV OUT (S)= 701.88 (18" RCP)
444	707.75	CURB INLET, 48" DIA.	R-3501-TR	INV IN (N)= 702.08 (15" RCP) INV OUT (S)= 702.08 (15" RCP)
445	707.82	48" DIA. MANHOLE	R-1772	INV IN (N)= 702.17 (15" RCP) INV OUT (S)= 702.17 (15" RCP)
446	705.90	BEEHIVE INLET, 24 X 24	R-4342	INV OUT (S)= 702.45 (15" RCP)
449	707.25	CURB INLET, 48" DIA.	R-3501-TL	INV IN (NE)= 701.94 (24" RCP) INV OUT (W)= 701.94 (24" RCP)
450	707.78	48" DIA. MANHOLE	R-1772	INV IN (E)= 702.08 (24" RCP) INV OUT (SW)= 702.08 (24" RCP)
451	706.85	48" DIA. MANHOLE	R-1772	INV IN (N)= 702.70 (21" RCP) INV IN (E)= 703.20 (15" RCP) INV OUT (W)= 702.45 (24" RCP)
452	709.00	BEEHIVE INLET, 24 X 24	R-4342	INV OUT (W)= 705.05 (15" RCP)
453	708.94	CURB INLET, 48" DIA.	R-3501-TR	INV IN (N)= 703.99 (21" RCP) INV OUT (S)= 703.99 (21" RCP)
454	708.94	CURB INLET, 48" DIA.	R-3501-TR	INV IN (NE)= 704.44 (18" RCP) INV OUT (S)= 704.19 (21" RCP)
455	710.83	CURB INLET, 48" DIA.	R-3501-TL	INV IN (NE)= 706.03 (18" RCP) INV OUT (SW)= 706.03 (18" RCP)
456	710.83	CURB INLET, 48" DIA.	R-3501-TR	INV IN (E)= 706.33 (18" RCP) INV OUT (SW)= 706.33 (18" RCP)
457	711.73	CURB INLET, 48" DIA.	R-3501-TL	INV IN (SE)= 707.38 (15" RCP) INV OUT (W)= 707.13 (18" RCP)
458	711.73	CURB INLET, 24 X 24	R-3501-TR	INV OUT (NW)= 707.48 (15" RCP)
463	707.45	BEEHIVE INLET, 48" DIA.	R-4342	INV IN (NE)= 701.40 (24" RCP) INV OUT (SW)= 701.40 (24" RCP)
464	712.36	BEEHIVE INLET, 48" DIA.	R-4342	INV IN (NE)= 705.30 (18" RCP) INV IN (NW)= 704.30 (24" RCP) INV OUT (SW)= 704.30 (24" RCP)
465	715.05	BEEHIVE INLET, 48" DIA.	R-4342	INV IN (NE)= 707.80 (18" RCP) INV OUT (SW)= 707.80 (18" RCP)
466	716.23	CURB INLET, 48" DIA.	R-3501-TR	INV IN (N)= 710.05 (18" RCP) INV OUT (SW)= 710.05 (18" RCP)
467	716.23	CURB INLET, 48" DIA.	R-3501-TL	INV IN (N)= 710.35 (18" RCP) INV OUT (S)= 710.35 (18" RCP)
468A	714.91	BEEHIVE INLET, 24 X 24	R-4342	INV OUT (W)= 711.21 (18" RCP)
468	716.58	48" DIA. MANHOLE	R-1772	INV IN (E)= 710.50 (18" RCP) INV OUT (S)= 710.50 (18" RCP)
469	713.04	48" DIA. MANHOLE	R-1772	INV IN (NW)= 704.49 (24" RCP) INV OUT (SE)= 704.49 (24" RCP)
470	712.45	CURB INLET, 48" DIA.	R-3501-TR	INV IN (NW)= 704.80 (21" RCP) INV OUT (SE)= 704.55 (24" RCP)
471	712.45	CURB INLET, 48" DIA.	R-3501-TL	INV IN (NW)= 704.90 (21" RCP) INV OUT (SE)= 704.90 (21" RCP)
472	709.27	BEEHIVE INLET, 48" DIA.	R-4342	INV IN (NE)= 705.27 (21" RCP) INV OUT (SE)= 705.27 (21" RCP)
473	711.00	BEEHIVE INLET, 48" DIA.	R-4342	INV IN (NE)= 705.65 (21" RCP) INV OUT (SW)= 705.65 (21" RCP)
474	711.27	48" DIA. MANHOLE	R-1772	INV IN (N)= 705.86 (21" RCP) INV OUT (SW)= 705.86 (21" RCP)
475	710.79	CURB INLET, 48" DIA.	R-3501-TR	INV IN (NE)= 706.18 (18" RCP) INV OUT (S)= 705.93 (21" RCP)
476	710.79	CURB INLET, 48" DIA.	R-3501-TL	INV IN (NE)= 706.53 (15" RCP) INV OUT (SW)= 706.28 (18" RCP)
477	710.67	BEEHIVE INLET, 24 X 24	R-4342	INV OUT (SW)= 707.22 (15" RCP)

STORM SEWER PIPE DATA TABLE						
UPSTREAM STRUCTURE	DOWNSTREAM STRUCTURE	SIZE	MATERIAL	LENGTH	SLOPE	
425	422	18"	RCP	141'	0.38%	
426	425	18"	RCP	28'	0.25%	
427	426	15"	RCP	28'	0.36%	
428	427	15"	RCP	109'	0.30%	
429	428	15"	RCP	121'	0.29%	
430	429	15"	RCP	28'	0.29%	
431	430	15"	RCP	141'	0.23%	
431A	431	15"	RCP	65'	0.26%	
443	442	18"	RCP	141'	0.48%	
444	443	15"	RCP	28'	0.71%	
445	444	15"	RCP	28'	0.32%	
446	445	15"	RCP	106'	0.26%	
449	448	24"	RCP	28'	0.43%	
450	449	24"	RCP	41'	0.34%	
451	450	24"	RCP	113'	0.33%	
452	451	15"	RCP	55'	3.39%	
453	451	21"	RCP	114'	1.13%	
454	453	21"	RCP	28'	0.71%	
455	454	18"	RCP	139'	1.14%	
456	455	18"	RCP	28'	1.07%	
457	456	18"	RCP	84'	0.95%	
458	457	15"	RCP	28'	0.36%	
463	460	24"	RCP	107'	1.03%	
464	463	24"	RCP	291'	1.00%	
465	464	18"	RCP	160'	1.57%	
466	465	18"	RCP	157'	1.44%	
467	466	18"	RCP	28'	1.07%	
468	467	18"	RCP	16'	0.94%	
468A	468	18"	RCP	81'	0.88%	
469	464	24"	RCP	100'	0.19%	
470	469	24"	RCP	34'	0.18%	
471	470	21"	RCP	28'	0.36%	
472	471	21"	RCP	145'	0.26%	
473	472	21"	RCP	169'	0.22%	
474	473	21"	RCP	117'	0.18%	
475	474	21"	RCP	38'	0.18%	
476	475	18"	RCP	28'	0.36%	
477	476	15"	RCP	41'	1.67%	

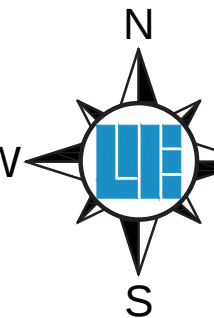


STORM SEWER NOTES

- THE CONTRACTOR SHALL ADHERE TO ALL TERMS AND CONDITIONS AS OUTLINED IN THE EPA OR APPLICABLE STATE GENERAL N.P.D.E.S. PERMIT FOR STORMWATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITIES AND STORMWATER POLLUTION PREVENTION PLAN.
- REFER TO THE INDIANA DEPARTMENT OF TRANSPORTATION (INDOT) STANDARD SPECIFICATIONS, LATEST EDITION, FOR BASIC MATERIALS AND CONSTRUCTION METHODS.
- THE CONTRACTOR SHALL CONTACT APPLICABLE STATE UNDERGROUND LOCATION SERVICE AT LEAST 72 HOURS PRIOR TO ANY WORK AND SHALL CONTACT THE OWNER AND/OR ENGINEER SHOULD UTILITIES APPEAR TO BE IN CONFLICT WITH THE PROPOSED IMPROVEMENTS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
- THE PLANS SHOW THE LOCATIONS OF ALL KNOWN UTILITIES LOCATED WITHIN THE LIMITS OF CONSTRUCTION ACCORDING TO INFORMATION PROVIDED BY THE VARIOUS UTILITY COMPANIES, PREVIOUS CONSTRUCTION PLANS AND AS EVIDENCED BY OBSERVATION OF ABOVE GROUND CONDITIONS BY THE SURVEYOR. THE ACCURACY OF THIS INFORMATION IS NOT GUARANTEED.
- THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES TO LOCATE MAINS, CONDUITS, SERVICE LINES, AND OTHER FACILITIES WITHIN THE CONSTRUCTION LIMITS. THE LOCATION AND PROTECTION OF UTILITY STRUCTURES, THEIR SUPPORT AND MAINTENANCE DURING CONSTRUCTION (IN COOPERATION WITH APPLICABLE UTILITY COMPANY) IS THE EXPRESSED RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR SHALL CONTACT ALL APPLICABLE UTILITIES AND VERIFY ANY AND ALL FEES ASSOCIATED WITH THE INSTALLATION OF ALL UTILITIES.
- ALL CONSTRUCTION ON THIS SITE TO BE PERFORMED IN COMPLIANCE WITH O.S.H.A. STANDARDS FOR WORKER SAFETY.
- ANY PART OF STORM SEWER TRENCHES RUNNING UNDER OR WITHIN 5' OF PAVEMENT TO BE BACKFILLED WITH GRANULAR MATERIAL.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY LOCATIONS, SIZES, AND ELEVATIONS OF EXISTING UTILITIES, STRUCTURES, PIPES, PAVEMENTS AS RELATED TO THEIR WORK. NOTIFY ENGINEER OF ANY CONFLICT AND/OR DISCREPANCIES IN THE CONSTRUCTION DOCUMENTS.
- MINIMUM CLEARANCE BETWEEN STORM / SANITARY SEWER SYSTEMS AND DOMESTIC/FIRE LINE SERVICE, SHALL BE 10' HORIZONTAL AND 18" VERTICAL.
- CONTRACTOR TO INSTALL CONCRETE CRAILES AT PIPE CROSSING WHEN THE VERTICAL SEPARATION (AS MEASURED FROM THE EXTERIOR OF THE PIPES) BETWEEN SANITARY SEWERS, WATER MAINS AND STORM SEWERS IS 18" OR LESS.
- SANITARY SEWER LINES WITHIN 10', HORIZONTALLY, OF WATER LINES SHALL BE C900 WATER MAIN GRADE PVC.
- IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO ITS CONDITION PRIOR TO CONSTRUCTION.
- WHEN PERFORMING EXCAVATIONS DURING PERIODS OF WET WEATHER, PROVIDE ADEQUATE Dewatering, DRAINAGE AND GROUND WATER MANAGEMENT TO CONTROL MOISTURE OF SOILS.
- COMPACTED "B" BORROW BACK FILL REQUIRED OVER ALL UTILITIES IN PAVED AREAS.
- FOLLOW ALL LOCAL AND STATE CODES IN REFERENCE TO STORM SEWER INSTALLATION.
- ALL EXISTING MANHOLE AND CATCH BASIN GRATES SHALL BE ADJUSTED TO NEW FINISH GRADE ELEVATIONS.
- EXISTING PIPES WITHIN CONSTRUCTION LIMITS ARE TO BE CLEANED OUT TO REMOVE ALL SILT AND DEBRIS.
- ALL STORM PIPE CONNECTIONS AT STRUCTURES SHALL BE GROUTED TO ASSURE CONNECTIONS AT STRUCTURES ARE WATERTIGHT.
- ALL STORM SEWER STRUCTURES IN PAVED AREAS SHALL BE FLUSH WITH PAVEMENT AND SHALL HAVE TRAFFIC BEARING RING AND COVERS RATED FOR H20 LOADING.
- ALL STORM SEWER STRUCTURES SHALL HAVE A SMOOTH AND UNIFORMLY POURED MORTAR CHANNEL FROM INVERT IN TO INVERT OUT.
- NEW PIPES AND STRUCTURES WITHIN CONSTRUCTION LIMITS ARE TO BE CLEANED OUT TO REMOVE ALL SILT AND DEBRIS PRIOR TO FINAL TURNOVER TO THE OWNER.
- IF HDPE PIPE IS SPECIFIED, USE DUAL WALLED, HANCOR HQ, ADS N-12 PIPE OR APPROVED EQUAL.
- ALL FITTINGS AND ACCESSORIES INCLUDING BUT NOT LIMITED TO END CAPS, CLEANOUTS, REDUCERS, ETC., SHALL BE HDPE MATERIAL, IF SPECIFIED, COMPARABLE WITH STORAGE PIPES.
- PROVIDE BACKFILL WITH A MINIMUM OF 4" BEDDING MATERIAL OF #8 AGGREGATE COMPACTED IN 8" LIFTS TO 95% MAXIMUM DRY DENSITY.
- VERIFY EXISTING STORM INVERT ELEVATIONS PRIOR TO STARTING NEW STORM SEWER CONNECTION.

LEGEND: PROPOSED CONDITIONS

- RIGHT-OF-WAY LINE
- PROPOSED STORM SEWER LINE
- SSD
- PROPOSED SANITARY SEWER LINE
- SANITARY SEWER MANHOLE
- PROPOSED WATER LINE
- STORM BEEHIVE INLET
- STORM INLET
- TOP OF CASTING
- INVERT
- REINFORCED CONCRETE PIPE
- MANHOLE
- STRUCTURE
- DRAINAGE EASEMENT
- DRAINAGE, UTILITY AND SANITARY SEWER EASEMENT
- DRAINAGE, UTILITY AND SEWER EASEMENT
- CONCRETE END SECTION
- MATCH/EXISTING
- TYPICAL
- PROPOSED
- EXISTING
- RADIUS
- VARIABLE WIDTH
- RIGHT-OF-WAY
- BACK OF CURB
- BUILDING SETBACK LINE
- ADA RAMP
- FIRE HYDRANT
- MINIMUM PROTECTION ELEVATION GRADE



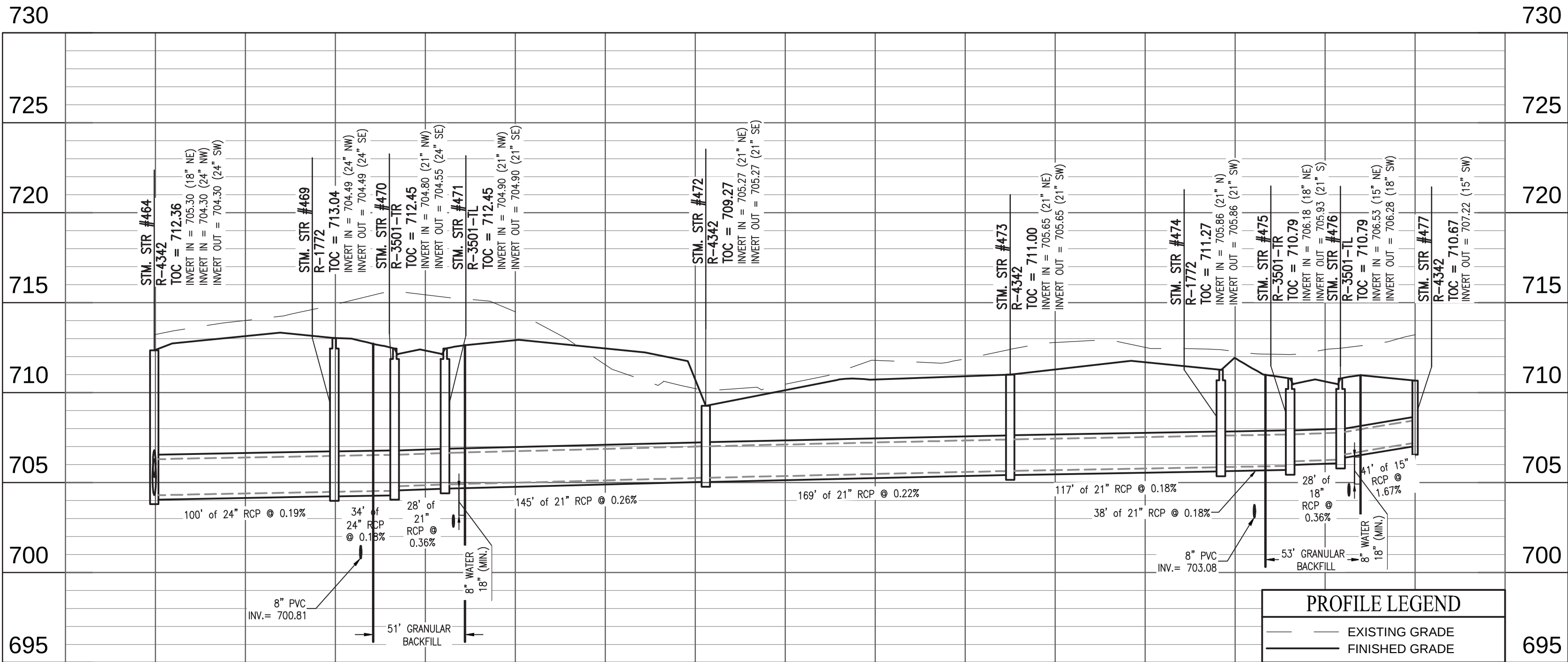
HORIZONTAL SCALE:
1"=60'



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LOCATION SERVICE TWO (2) WORKING
DAYS BEFORE COMMENCING WORK.

PROFILE LEGEND

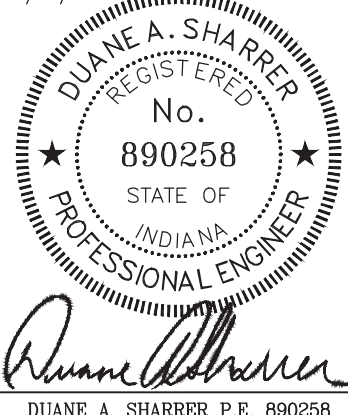
- EXISTING GRADE
- FINISHED GRADE



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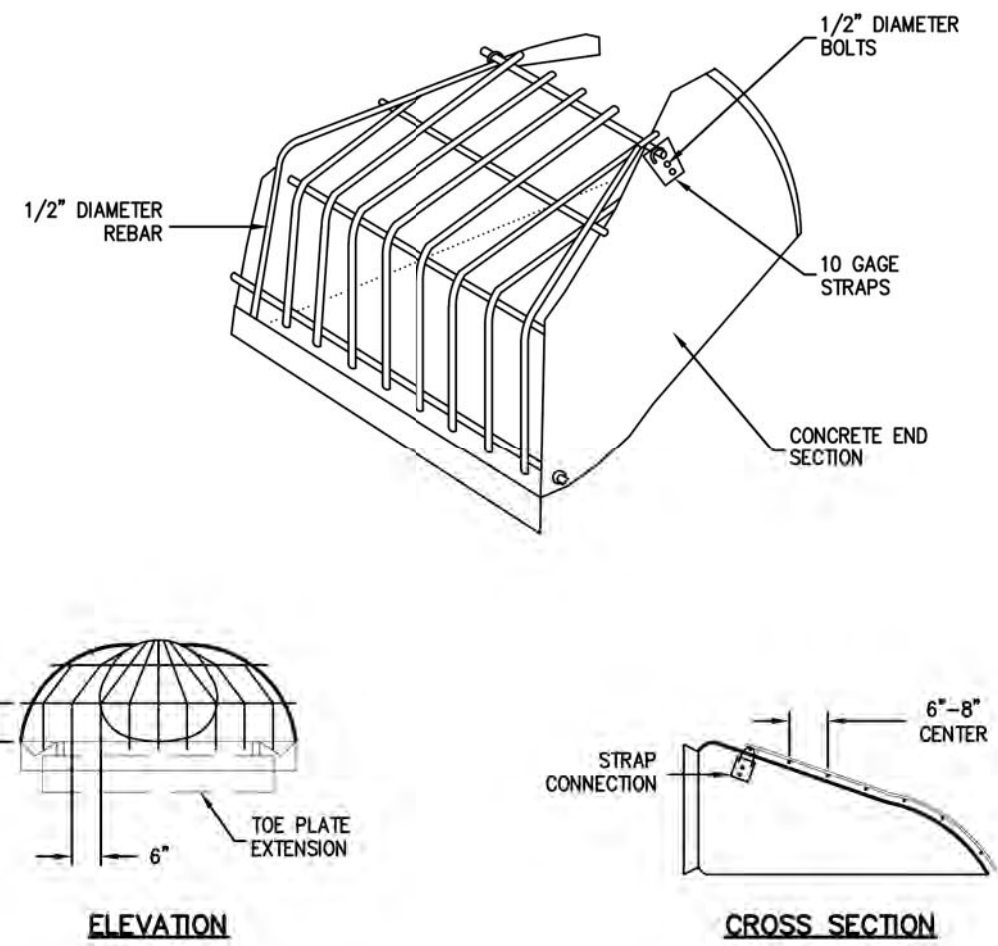
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PROJECT NO.	BY	DATE
W21.0352-2		04/28/2023
DWG NAME	DESIGNED BY	CHECKED BY
C600 Storm P&P	DUANE A. SHARRER	JP
DATE	DATE	DATE
04/28/2023		



LENNAR
DEERFIELD SECTION 2
RUNYON ROAD, NORTH OF OLIVE BRANCH ROAD, JOHNSON COUNTY, IN
STORM SEWER PLAN AND PROFILE
Section 3, Township 13 North, Range 3 East, White River Township, Johnson County, Indiana
SHEET NO.
C603
PROJECT NO.
W21.0352-2

LOCATION: I:\2013\W210353\Section 2\Engineering\design\c660 Storm Sewer Details.dwg
DATE: 04/28/2023
DRAWN BY: JPB
PLOT DATE: 04/28/2023 10:55am
PLOT BY: jpb



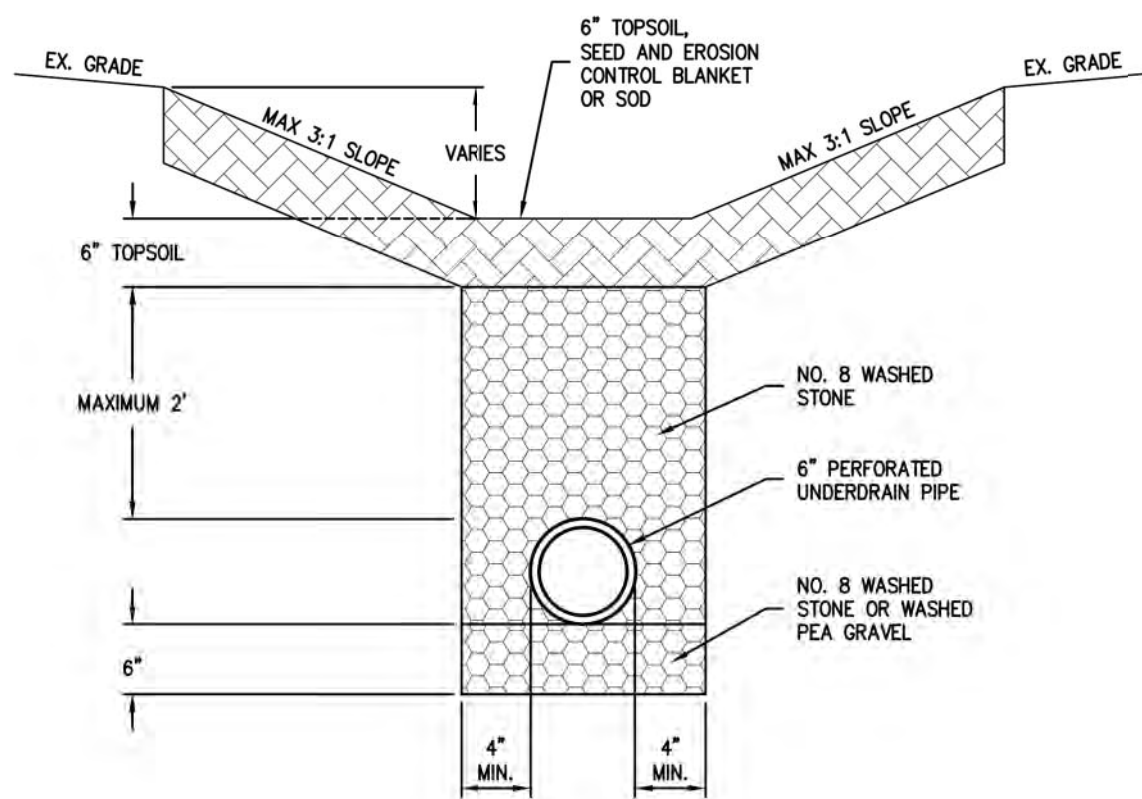
- NOTES:
1. TRASH RACK BARS TO BE BLACK STEEL.
 2. PAINT WITH HIGH ZINC COATING AFTER FABRICATION.
 3. PLANT FIT TRASH RACK CONFIGURATION.
 4. BOLT THROUGH BOTTOM SECTION WITH NUT.
 5. LAY OPEN ON BOTTOM FOR "HINGE" EFFECT.
 6. LAST CROSS BAR THROUGH BOTTOM SECTION.

TRASH GUARD

SCALE: NONE

DETAIL NO. SW-14
DATE: DEC 2017
REV DATE: FEB 2018

TOWN OF BARGERSVILLE, INDIANA APPROVED SEPTEMBER 25, 2018



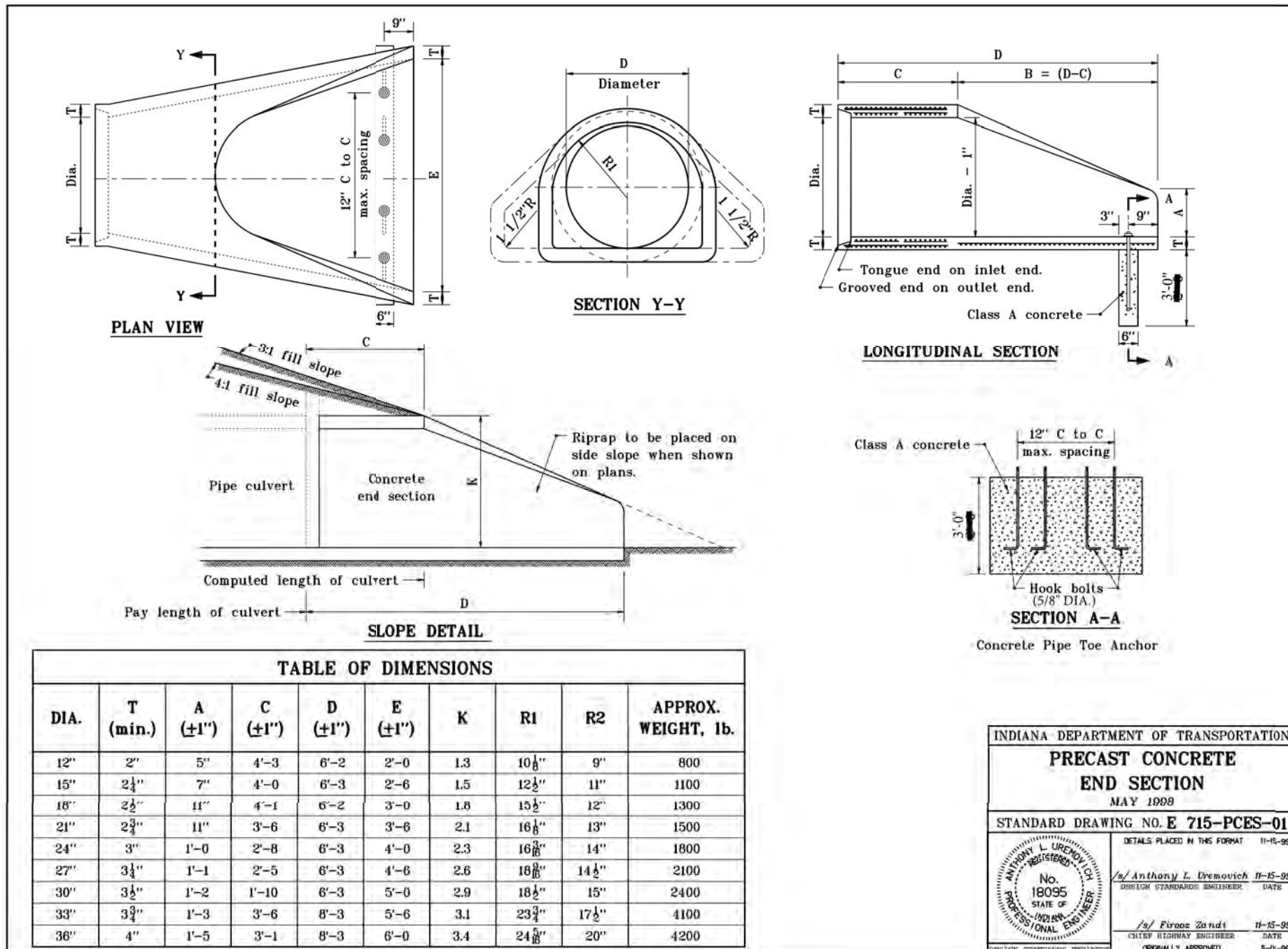
- NOTES:
1. PIPE MATERIAL SHALL BE PERFORATED CORRUGATED POLYETHYLENE, AS SPECIFIED.
 2. UNDERDRAIN CLEANOUT/RISERS REQUIRED EVERY 500 FEET.

DRAINAGE SWALE WITH UNDERDRAIN

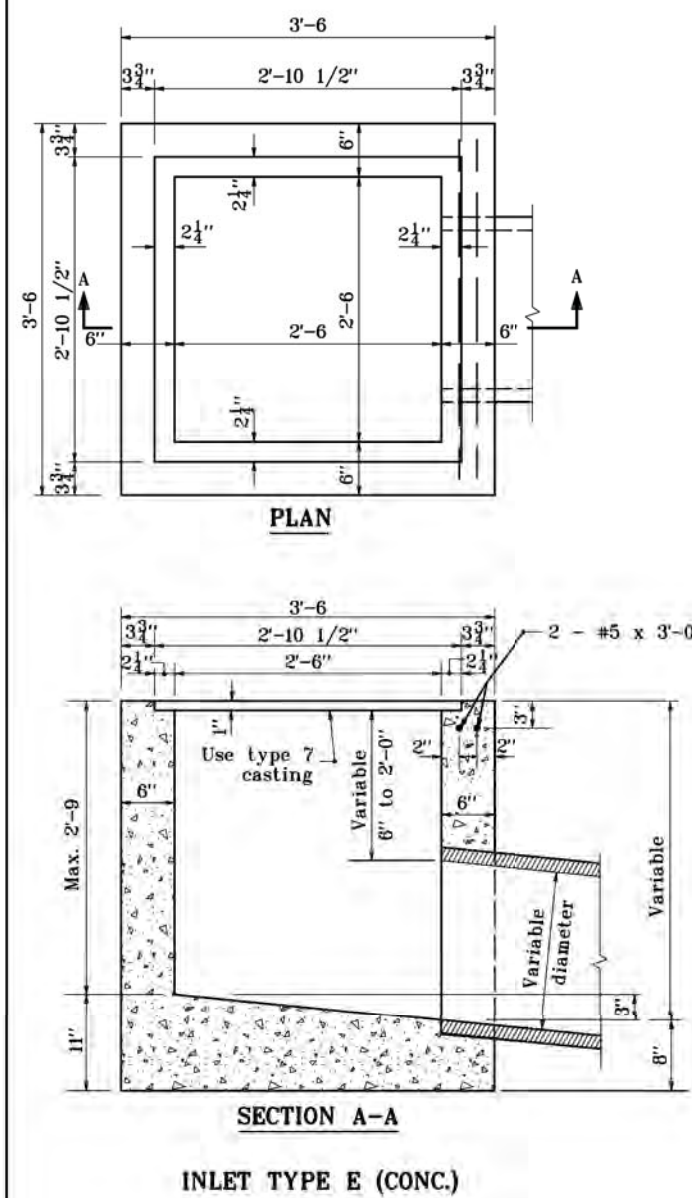
SCALE: NONE

DETAIL NO. SW-10
DATE: JAN 2015
REV DATE: OCT 2016

TOWN OF BARGERSVILLE, INDIANA APPROVED SEPTEMBER 25, 2018

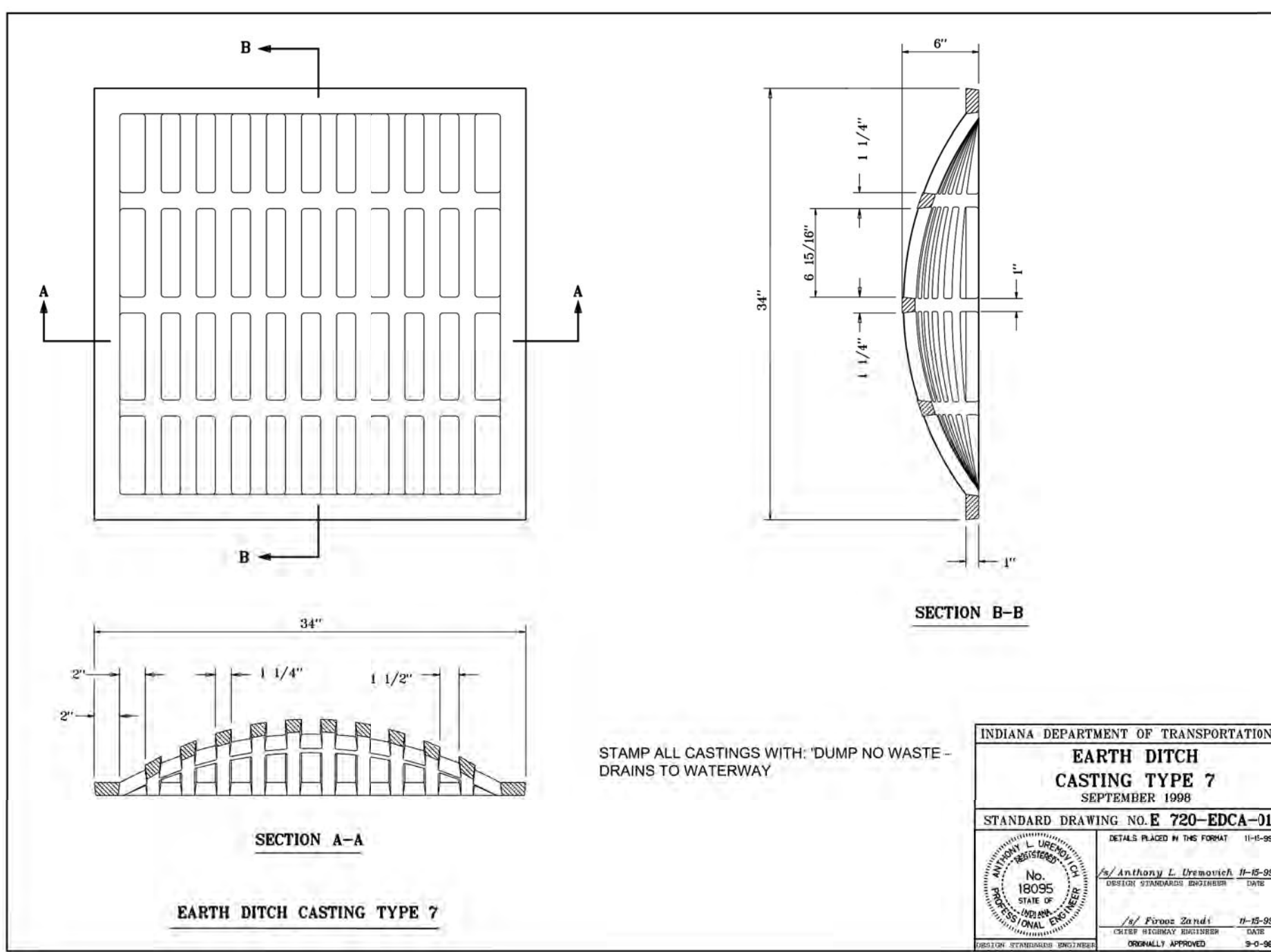


INDIANA DEPARTMENT OF TRANSPORTATION
PRECAST CONCRETE
END SECTION
MAY 1993
STANDARD DRAWING NO. E 715-PCES-01
DETAILS PLACED IN THE FORMAT: 11-15-99
No. 18095
STATE OF INDIANA
DESIGN STANDARDS ENGINEER
No. 18095
STATE OF INDIANA
DESIGN STANDARDS ENGINEER
No. 18095
STATE OF INDIANA
DESIGN STANDARDS ENGINEER
No. 18095
STATE OF INDIANA
DESIGN STANDARDS ENGINEER

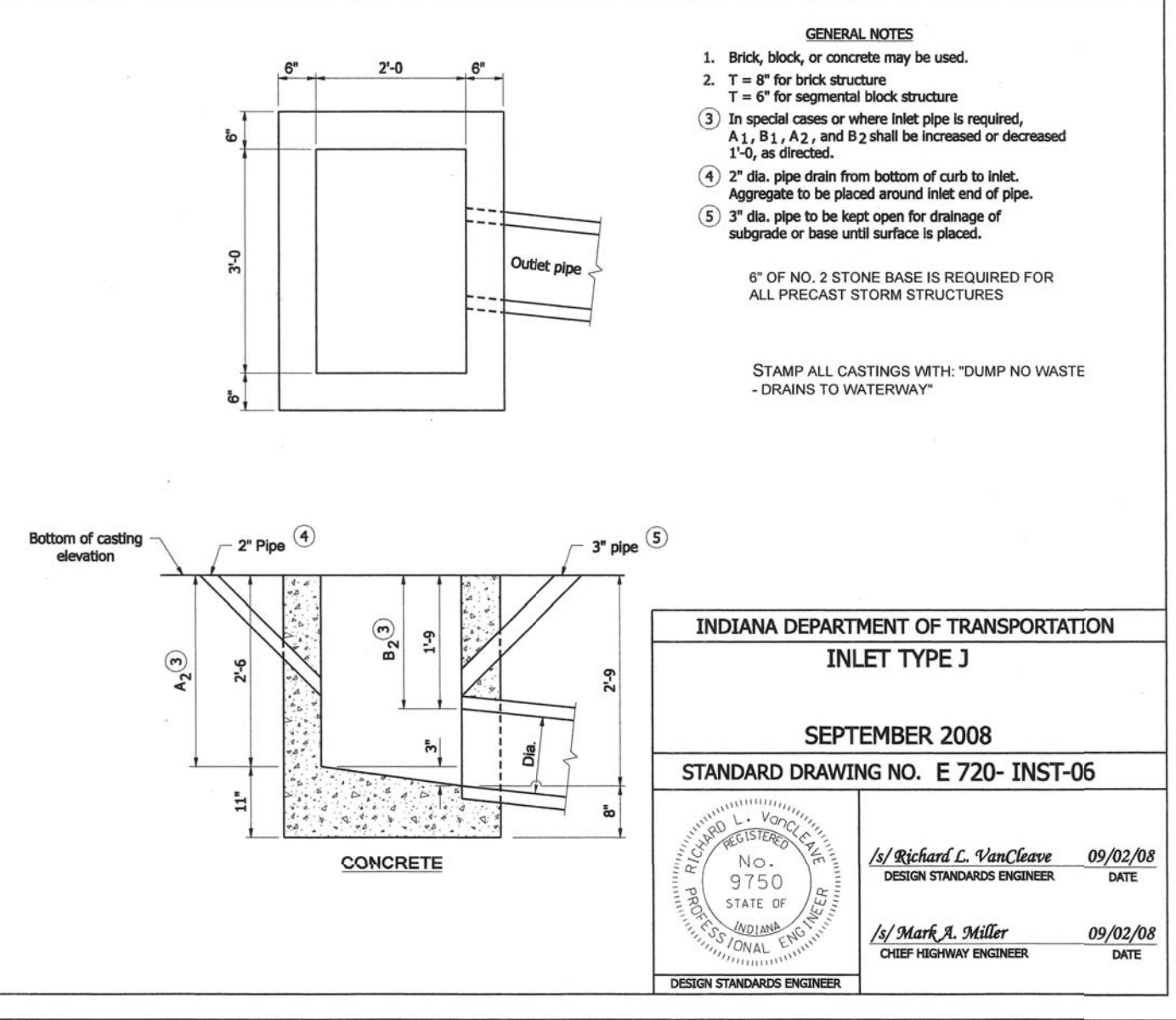


6" OF NO. 2 STONE BASE IS REQUIRED FOR ALL PRECAST STRUCTURES
STAMP ALL CASTINGS WITH: "DUMP NO WASTE - DRAINS TO WATERWAY"

INDIANA DEPARTMENT OF TRANSPORTATION
INLETS TYPE E
SEPTEMBER 1987
STANDARD DRAWING NO. E 720-INST-04
DETAILS PLACED IN THE FORMAT: 11-15-99
No. 18095
STATE OF INDIANA
DESIGN STANDARDS ENGINEER
No. 18095
STATE OF INDIANA
DESIGN STANDARDS ENGINEER
No. 18095
STATE OF INDIANA
DESIGN STANDARDS ENGINEER
No. 18095
STATE OF INDIANA
DESIGN STANDARDS ENGINEER



INDIANA DEPARTMENT OF TRANSPORTATION
EARTH DITCH
CASTING TYPE 7
SEPTEMBER 1998
STANDARD DRAWING NO. E 720-EDCA-01
DETAILS PLACED IN THE FORMAT: 11-15-99
No. 18095
STATE OF INDIANA
DESIGN STANDARDS ENGINEER
No. 18095
STATE OF INDIANA
DESIGN STANDARDS ENGINEER
No. 18095
STATE OF INDIANA
DESIGN STANDARDS ENGINEER
No. 18095
STATE OF INDIANA
DESIGN STANDARDS ENGINEER



- GENERAL NOTES
1. Brick, block, or concrete may be used.
 2. T = 8" for brick structure.
 3. In special cases where inlet pipe is required, A1, B1, A2, and B2 shall be increased or decreased 1/2" as directed.
 4. 2" dia. pipe drain from bottom of curb to inlet. Aggregate to be placed around inlet end of pipe.
 5. 3" dia. pipe to be kept open for drainage of subgrade or base until surface is placed.

6" OF NO. 2 STONE BASE IS REQUIRED FOR ALL PRECAST STORM STRUCTURES

STAMP ALL CASTINGS WITH: "DUMP NO WASTE - DRAINS TO WATERWAY"

INDIANA DEPARTMENT OF TRANSPORTATION
INLET TYPE J
SEPTEMBER 2008
STANDARD DRAWING NO. E 720-INST-05
DETAILS PLACED IN THE FORMAT: 11-15-99
No. 9750
STATE OF INDIANA
DESIGN STANDARDS ENGINEER
No. 9750
STATE OF INDIANA
DESIGN STANDARDS ENGINEER
No. 9750
STATE OF INDIANA
DESIGN STANDARDS ENGINEER
No. 9750
STATE OF INDIANA
DESIGN STANDARDS ENGINEER



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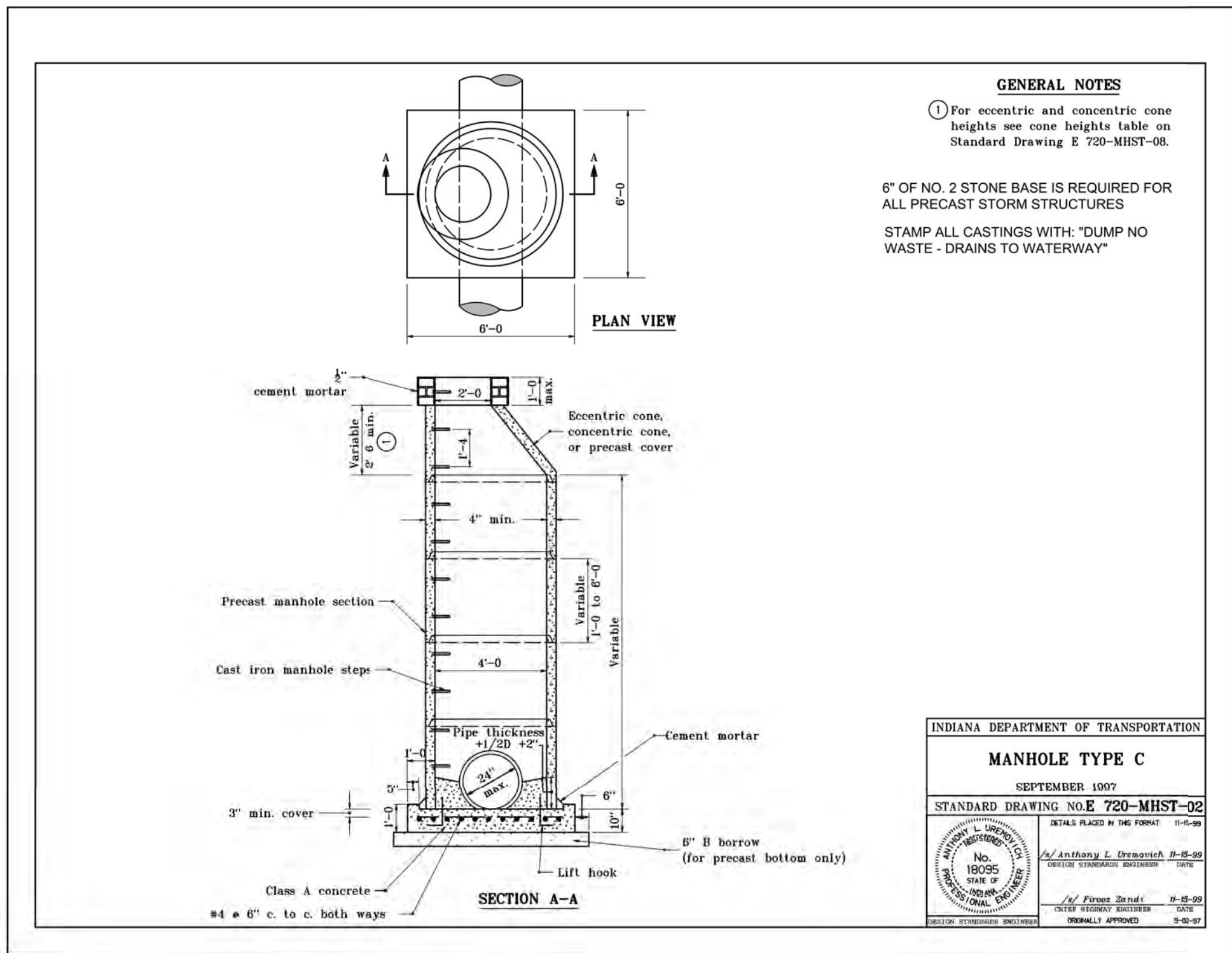
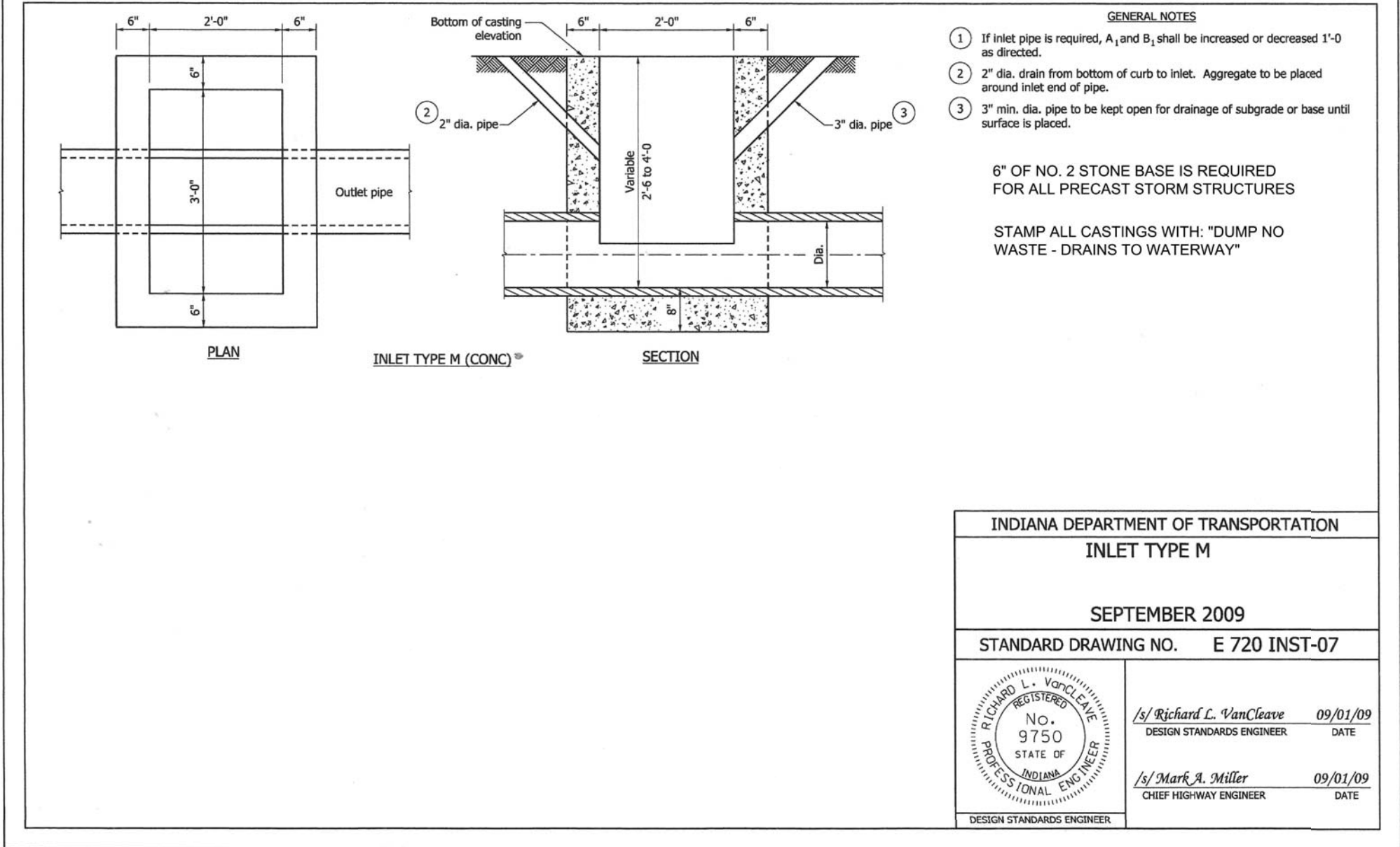
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PROJECT NO.	W21.0353-2
DWG NAME	C660 Storm Sewer Details
DESIGNED BY	JPB
DRAWN BY	JPB
CHECKED BY	JPB
DATE	04/28/2023

DUANE A. SHARRER
REGISTERED PROFESSIONAL ENGINEER
No. 890258
STATE OF INDIANA
DUANE A. SHARRER P.E. 890258

LENNAR
DEERFIELD SECTION 2
RUNYON ROAD, NORTH OF OLIVE BRANCH ROAD, JOHNSON COUNTY, IN
STORM SEWER DETAILS

SHEET NO.
C604
PROJECT NO.
W21.0353-2



**R-1772
Manhole Frame, Solid Lid**

Heavy Duty

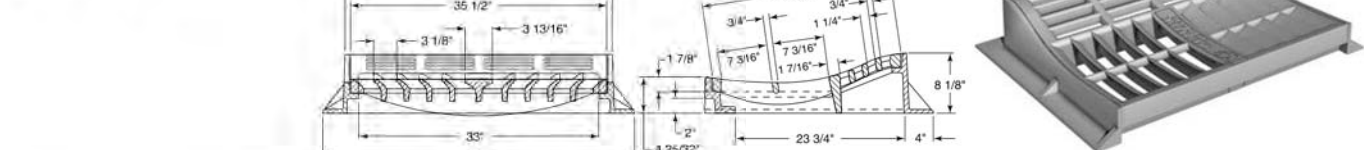
Non-Rocking feature available, see p. 12.



Available Grate: R-2502

**R-3501-TB
Inlet for Roll Type Curb**

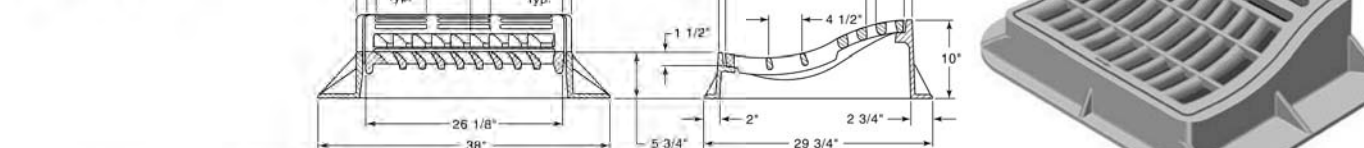
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SO. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3501-TB	L	3.1	5.7

**R-3501-TR
Inlet for Roll Type Curb**

Heavy Duty

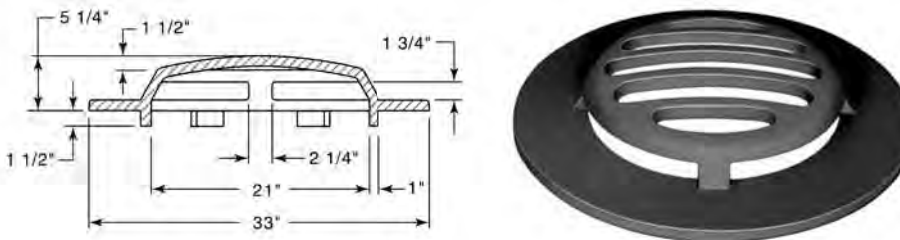


Illustrating R-3501-TR (flow right). If flow left required, order R-3501-TL.

**R-4342
Ditch Grate, Stool Type**

Light Duty

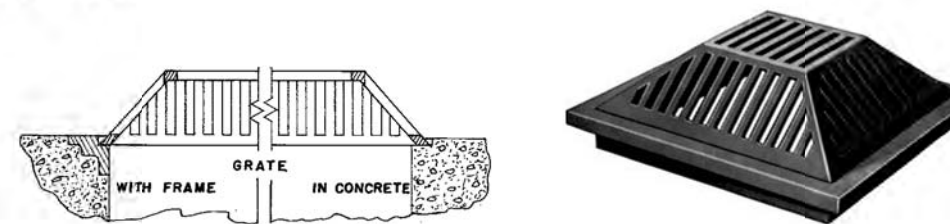
CATALOG NUMBER	GRATE TYPE	SO. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4342	Stool	1.4	8.6



**R-4345 to R-4347 Series
Square Beehive Drainage Grate, Frame**

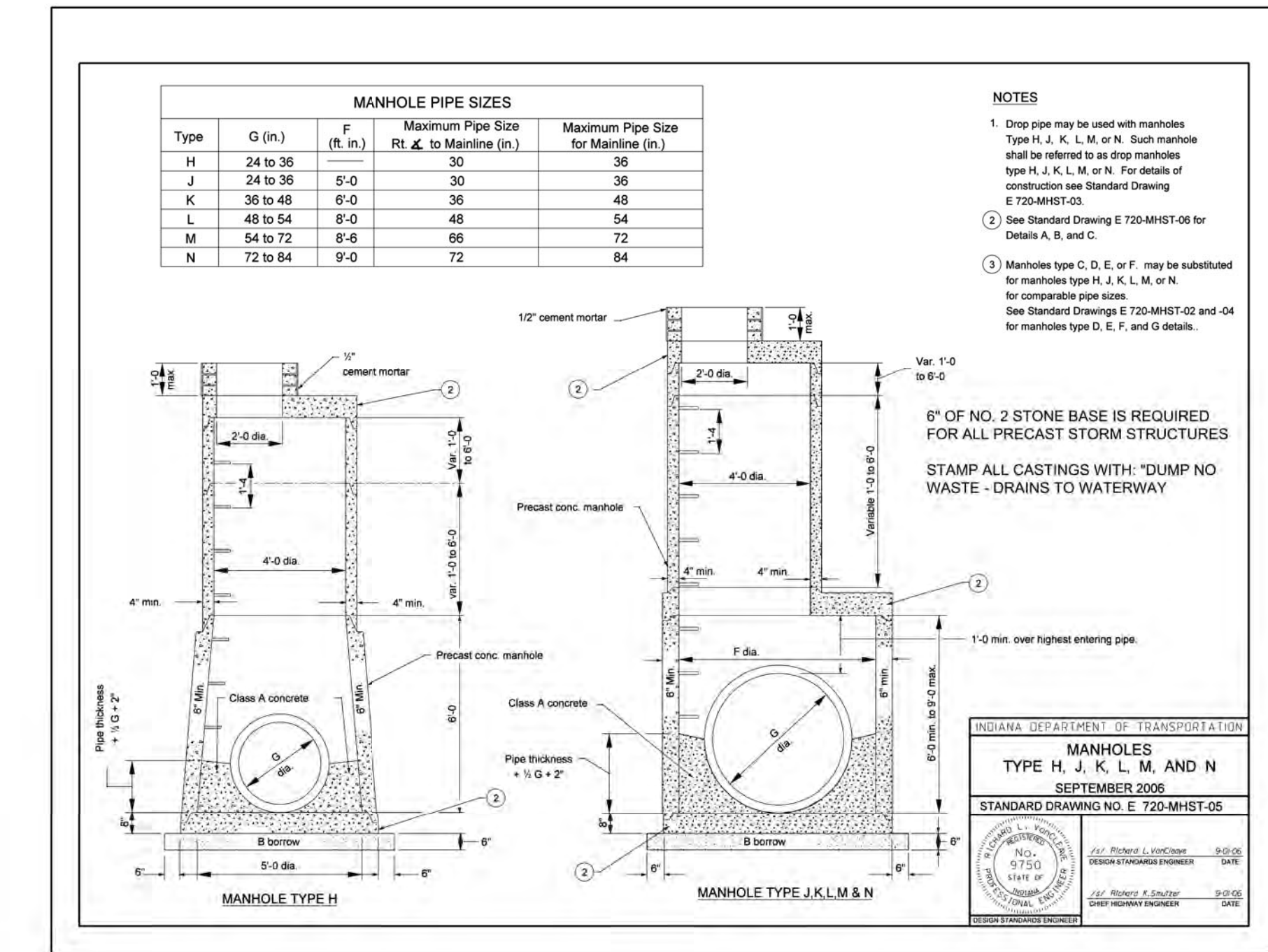
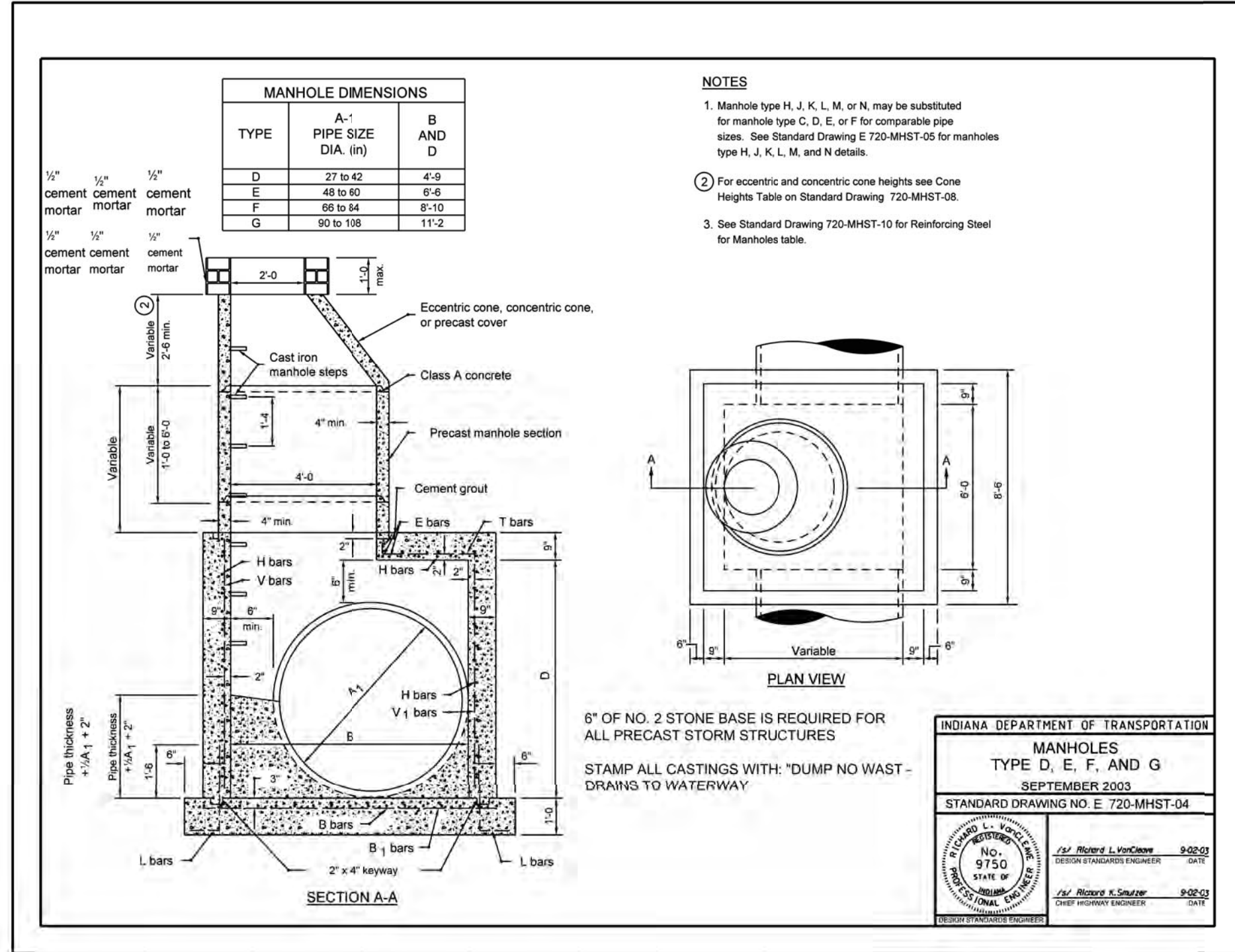
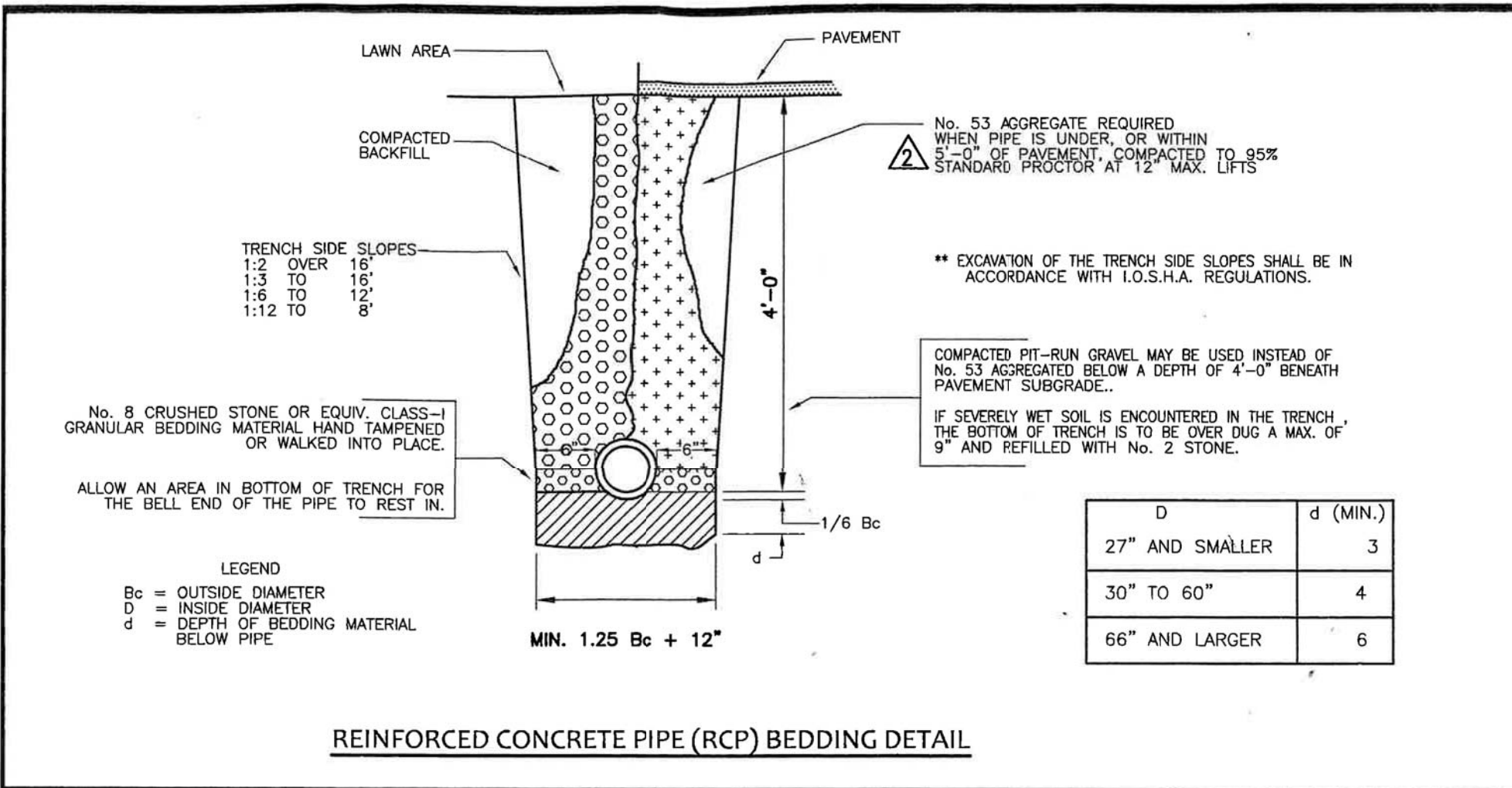
Light Duty

CATALOG NUMBER	GRATE TYPE	SO. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4345	Beehive	2.0	8.6
R-4346	Beehive	2.0	8.6
R-4347	Beehive	2.0	8.6



For off-roadway construction. These castings are suitable for use at low points of large graded areas and will drain a substantial volume of surface water from all sides.

Catalog No.	Grate Overall	Grate Top Size	Frame Overall	Height Grate	Height Frame
R-4345	26 x 26	12 x 12	-	6 1/4"	-
R-4346	26 x 26	12 x 12	30 x 30	6 1/4"	4"
R-4347	27 5/8 x 27 5/8	12 x 12	-	6 1/4"	-



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PROJECT NO.	W21.0353-2
DWG NAME	C660 Storm Sewer Details
DESIGNED BY	WESLEY W. SHARPER
DRAWN BY	WESLEY W. SHARPER
CHECKED BY	WESLEY W. SHARPER
DATE	04/28/2023

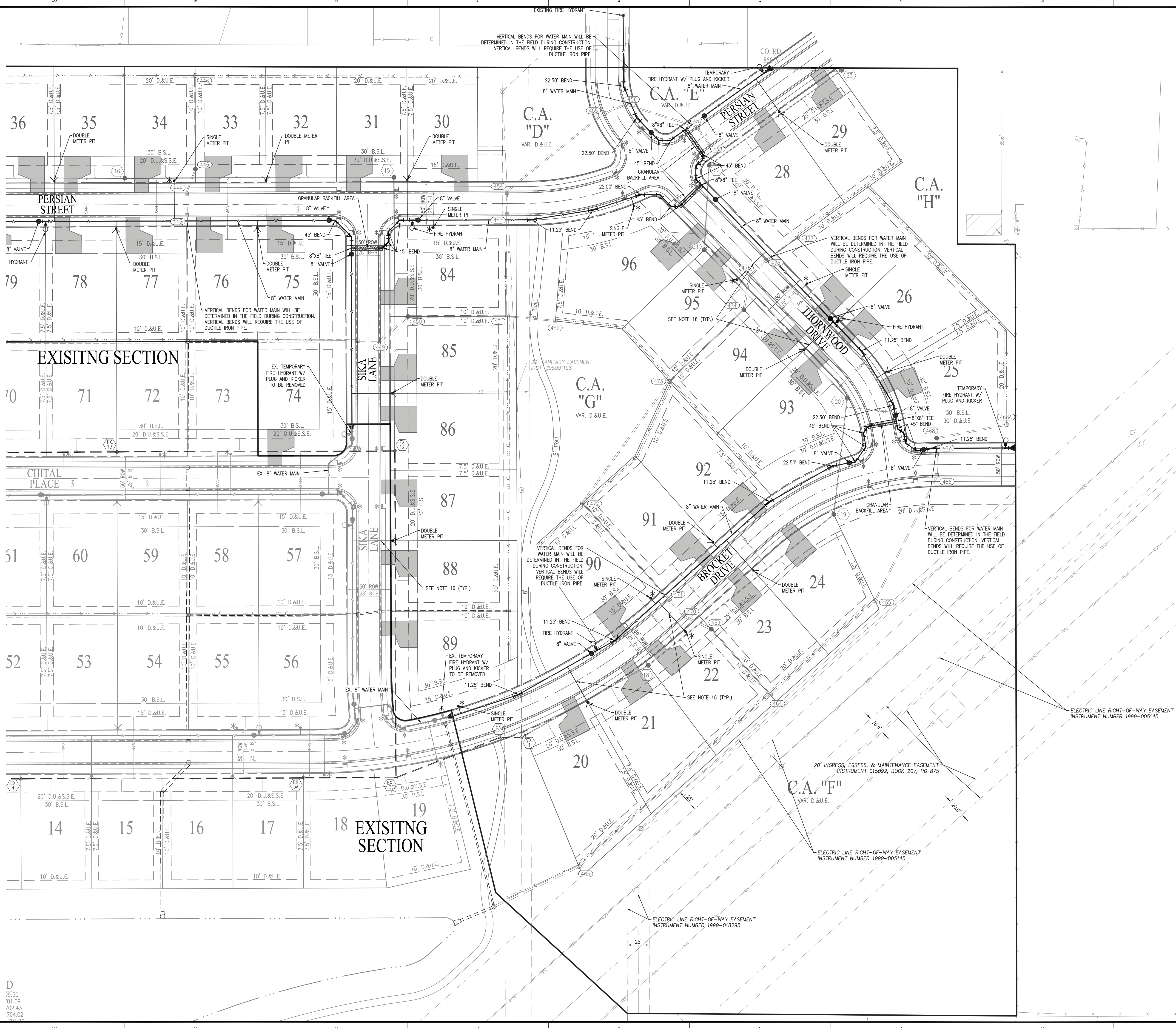
DUANE A. SHARPER
REGISTERED PROFESSIONAL ENGINEER
No. 890258
STATE OF INDIANA
DUANE A. SHARPER P.E. 890258

LENNAR
DEERFIELD SECTION 2
RUNYON ROAD, NORTH OF OLIVE BRANCH ROAD, JOHNSON COUNTY, IN
STORM SEWER DETAILS
Section 3, Township 13 North, Range 3 East, White River Township, Johnson County, Indiana

SHEET NO. **C605**
PROJECT NO. **W21.0353-2**

[illegible]

LOCATION: I:\2023\W21.0353\Section 2\Engineering\design\c700 Water Main Plan.dwg
DATE: April 28, 2023 10:47am
PLOTTER: HP DesignJet 500



LEGEND

	EXISTING WATER MAIN
	PROPOSED WATER MAIN
	TELEPHONE POLE
	GAS POLE
	INLET
	TREE
	GAS VALVE
	PARCEL ID
	ADAPTER
	BEND
	KICKER
	BLOCK METER PIT
	PROPOSED HYDRANT WITH VALVE
	EXISTING HYDRANT WITH VALVE
	BUTTERFLY VALVE
	VALVE
	BLOWOFF ASSEMBLY
	AIR RELIEF VALVE
	PLUG
	REDUCER
	T.J. TEE
	M.J. SLEEVE
	CROSS
	CASING PIPE
	GAS LINES
	TELEPHONE LINES
	ELECTRIC LINES
	FUTURE DRIVEWAY
	ELECTRIC PEDESTAL
	PHONE PEDESTAL
	ELECTRICAL TRANSFORMER
	SINGLE WATER LATERAL
	DOUBLE WATER LATERAL

- WATER MAIN NOTES:**
- SEE CONSTRUCTION STANDARDS OF THE LOCAL WATER UTILITY FOR THE INSTALLATION OF WATER MAINS, SERVICE LINES, METERS, AND APPURTENANCES.
 - MINIMUM COVER OVER TOP OF ALL WATER MAINS TO BE 54 INCHES FROM FINISHED GRADE.
 - ALL VALVES ARE TO BE INSTALLED WITHIN 10' OF AN INTERSECTION OR NEAR A FIRE HYDRANT.
 - VALVES MUST HAVE POSI-CAP OR EQUIVALENT, FOR VALVE BOX STABILIZATION AND CENTERING.
 - THE WATER MAIN MUST MAINTAIN A MINIMUM OF 10 FEET OF SEPARATION WITH THE SEWER MAIN AT ALL TIMES.
 - HYDRANTS SHALL BE PER THE REQUIREMENTS OF THE LOCAL WATER UTILITY.
 - FIRE HYDRANTS SHALL HAVE 5 INCH STORZ CONNECTION (MUELLER MODEL 290220 FOR CASTING AND 290221 CAP OR APPROVED EQUAL). THE 5 INCH STORZ CONNECTION SHALL FACE THE STREET. HYDRANTS SHALL BE PLACED BETWEEN THE CURB AND THE SIDEWALK IN THE RIGHT OF WAY.
 - INSTALL ALL DUCTILE IRON WATER MAINS AND ACCESSORIES IN ACCORDANCE WITH AWWA C600.
 - WRAP ALL FITTINGS IN POLYETHYLENE ENCASEMENT.
 - THE MAXIMUM SPACING BETWEEN FIRE HYDRANTS IN RESIDENTIAL NEIGHBORHOODS AND RESIDENTIAL ZONES AREAS SHALL BE 500 FEET.
 - ALL WATER TO BE RESTRAINED TOWN OF BARGERSVILLE STANDARDS.
 - WATER AVAILABILITY FEES WILL BE PAID AT THE TIME OF ACQUIRING THE BUILDING PERMITS.
 - ENGINEERING INSPECTION STAFF MUST BE NOTIFIED 48 HOURS PRIOR TO COMMENCING WITH NEW WATER MAIN CONSTRUCTION.
 - WATER TO BE INSTALLED BE 4-5 FEET FROM THE BACK OF CURB AND ADDITIONAL FITTINGS MAY NEED TO BE ADDED DURING CONSTRUCTION IN ORDER TO MEET THE TOWN OF BARGERSVILLE'S UTILITY STANDARDS.
 - CONTRACTOR TO PROMPTLY ORDER TOWN-APPROVED METER PITS FROM UTILITY SUPPLY CO. OR OTHER SUPPLIER UPON SUCCESSFUL AWARD AND NOTICE-TO-PROCEED FOR THE PROJECT.
 - SINGLE LONG-SIDE SERVICE LINES REQUIRE A 2" HDPE CASING PIPE. DOUBLE LONG-SIDE SERVICE LINES REQUIRE A 5" HDPE CASING PIPE.

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SCALE: 1" = 50'
0 25 50 100

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PROJECT NO.	BY	DATE
W21.0353-2		04/28/2023
DWG NAME		
C700 Water Main Plan		
DESIGNED BY		
SCS		
DRAWN BY		
JP		
CHECKED BY		
JP		
DATE		04/28/2023

DUANE A. SHARRER
REGISTERED
No. 890258
STATE OF INDIANA
PROFESSIONAL ENGINEER

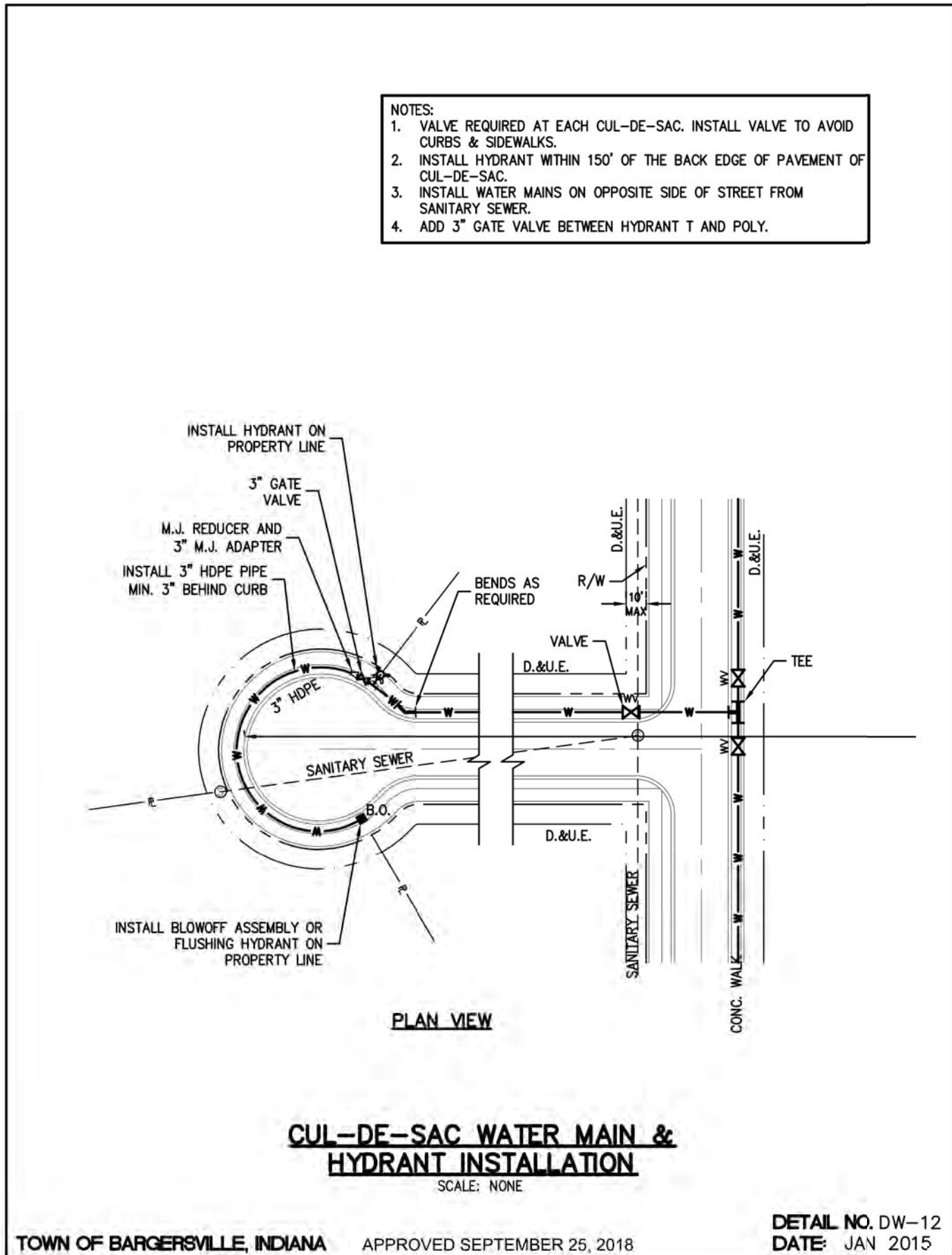
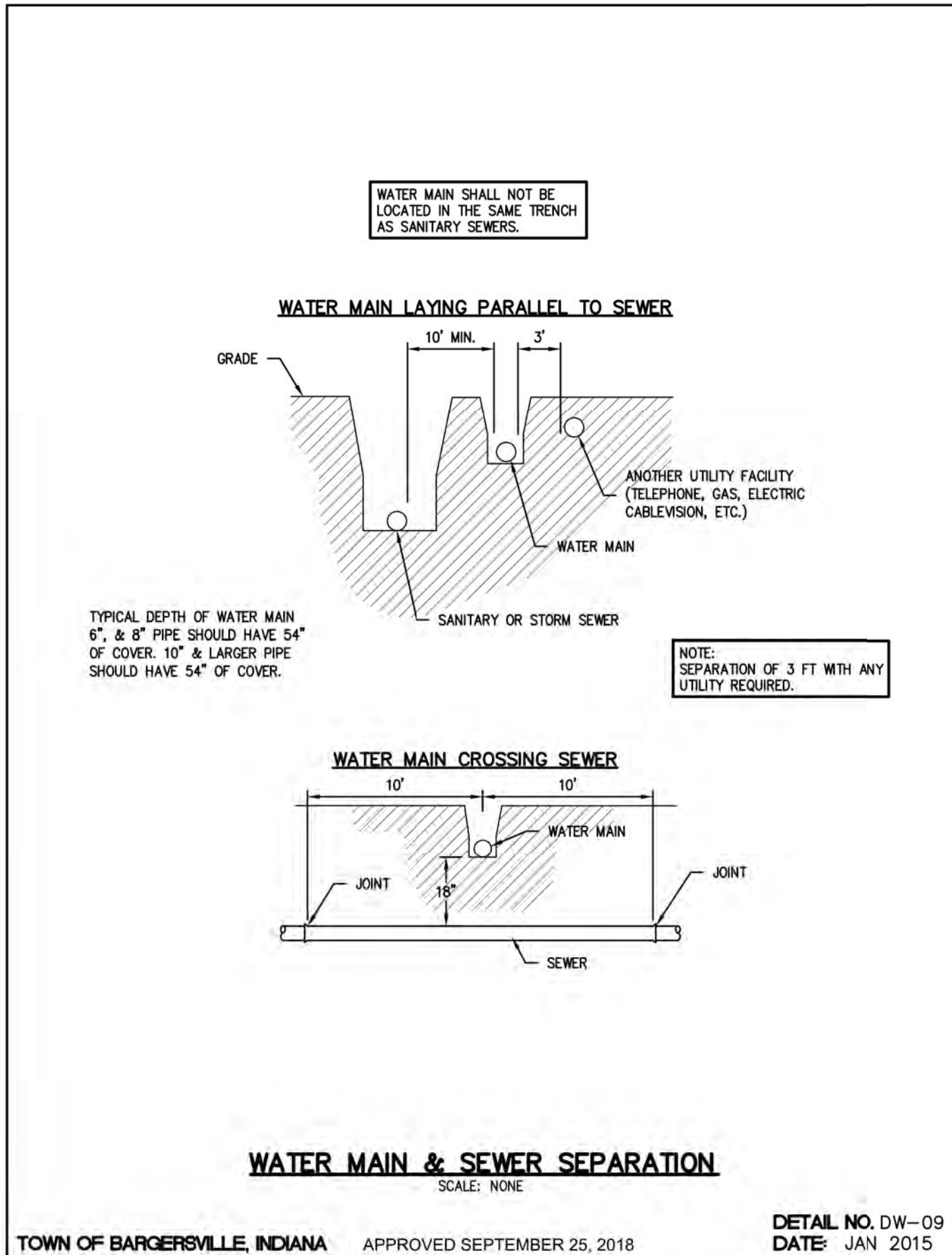
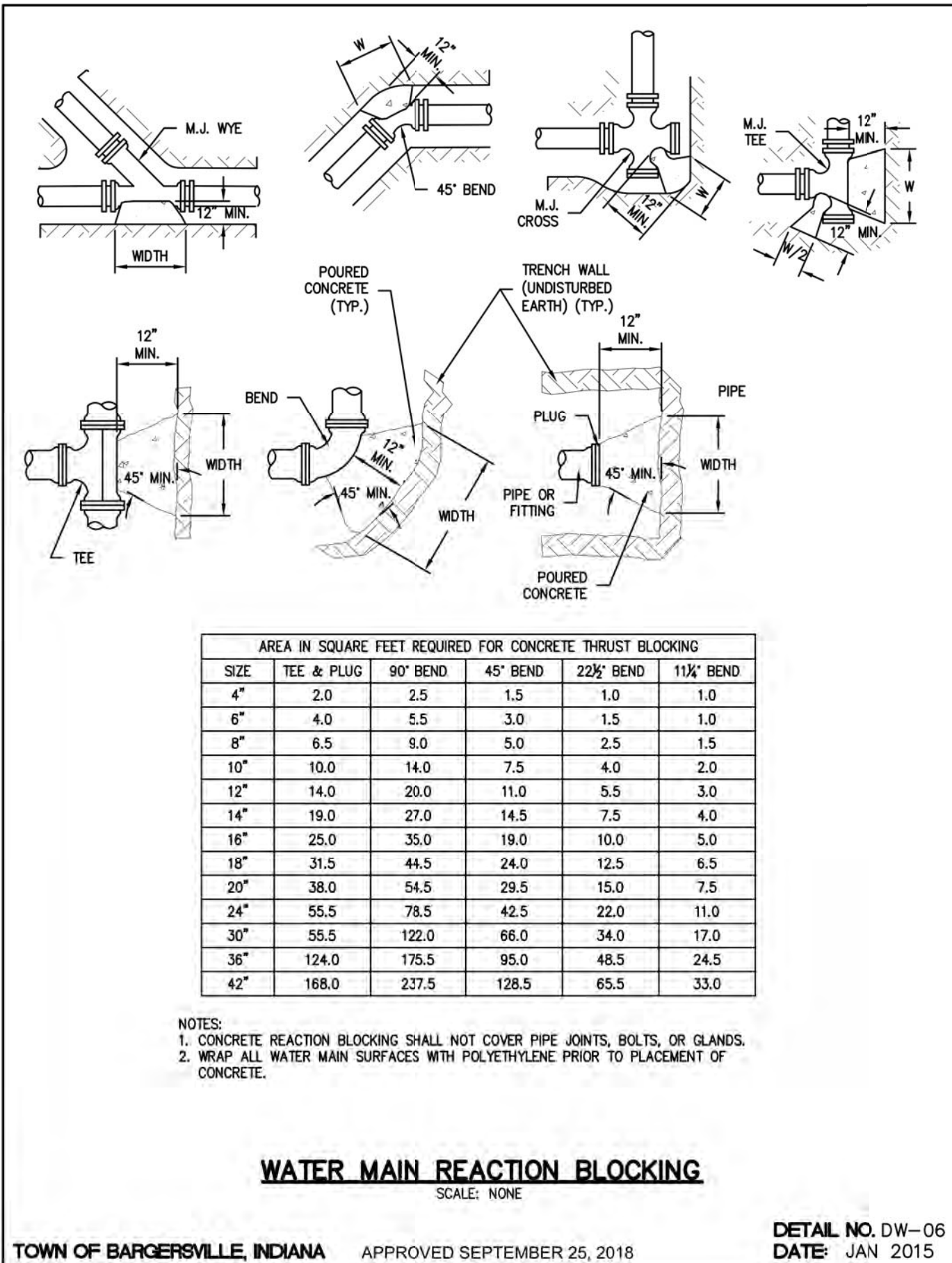
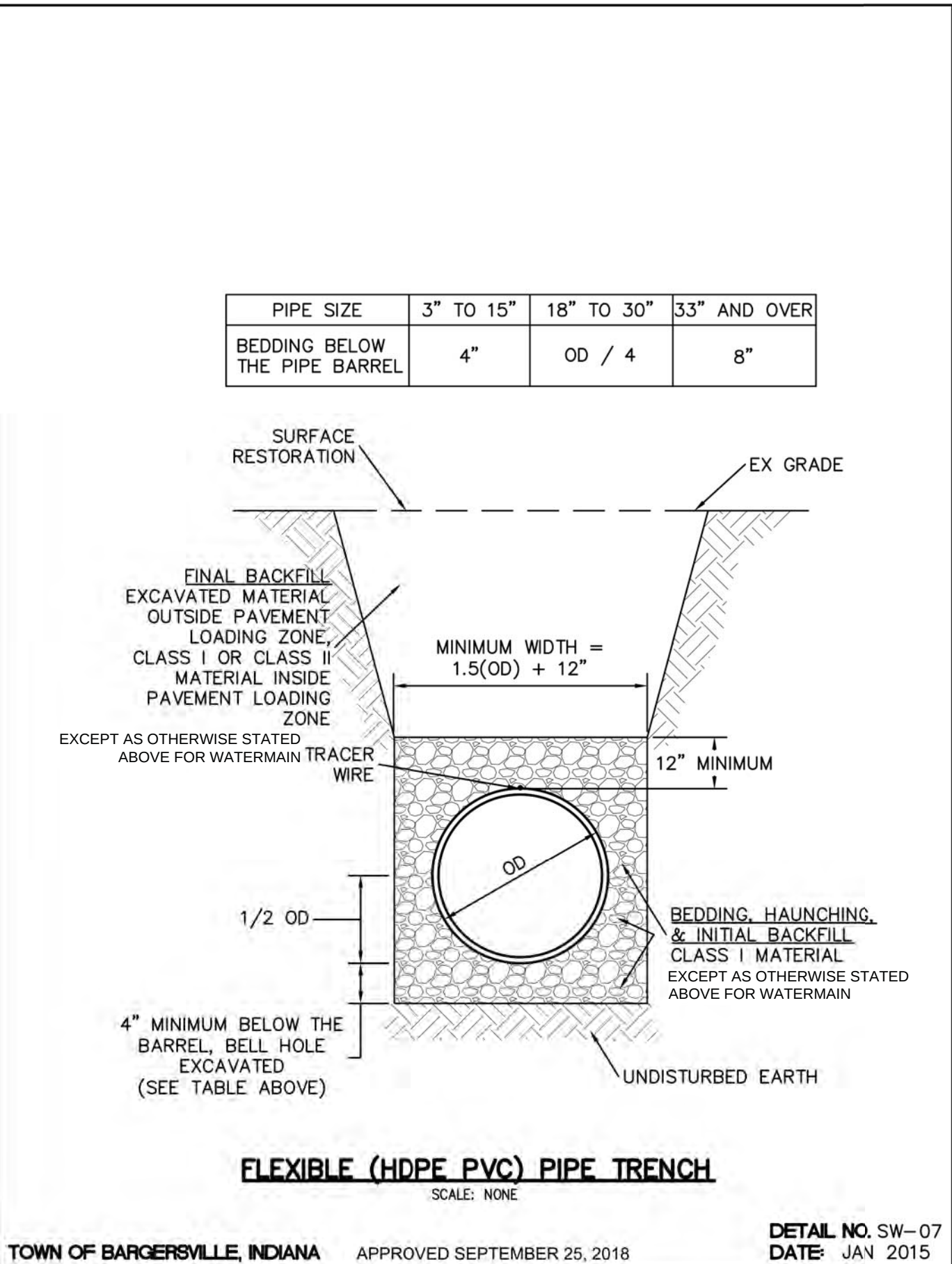
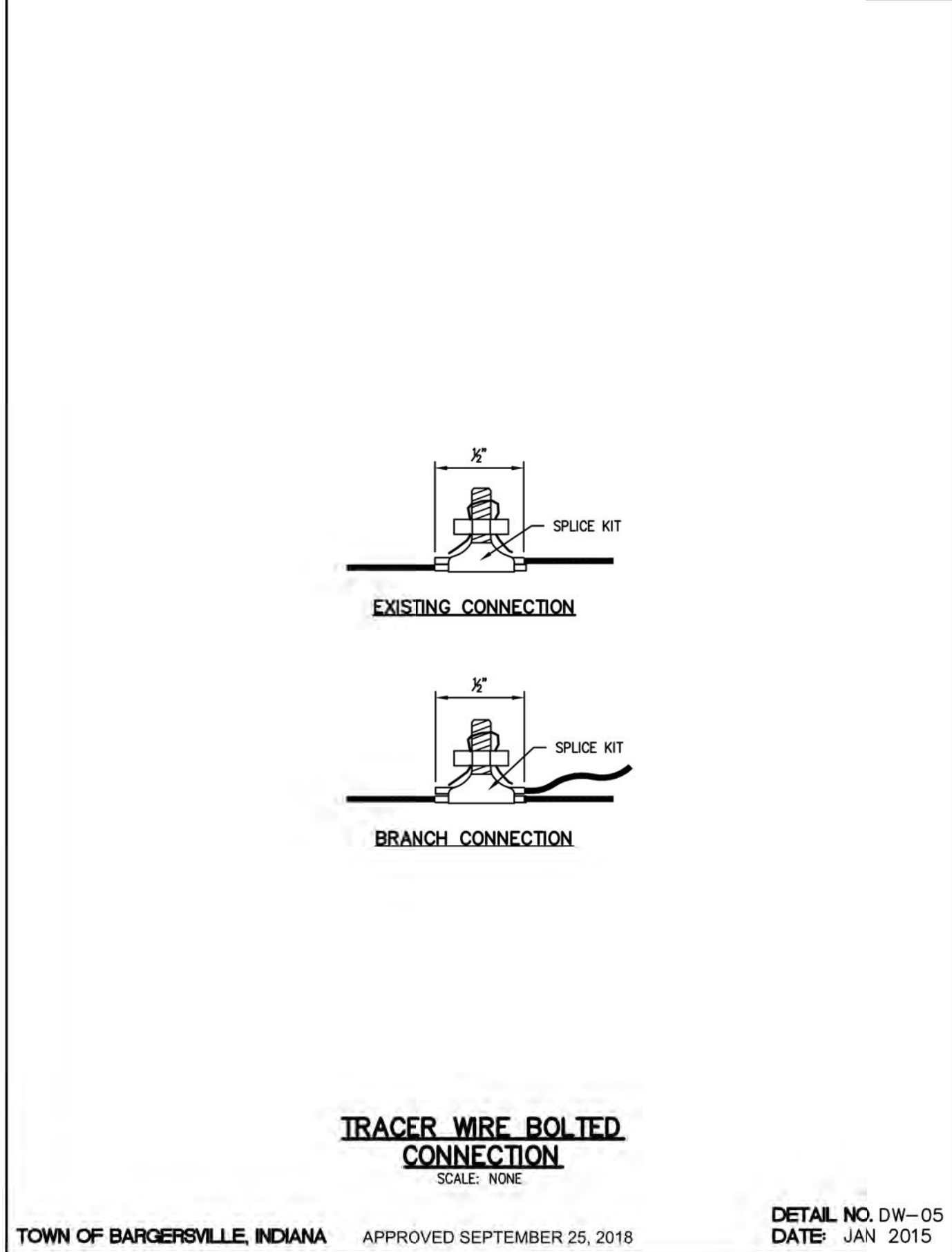
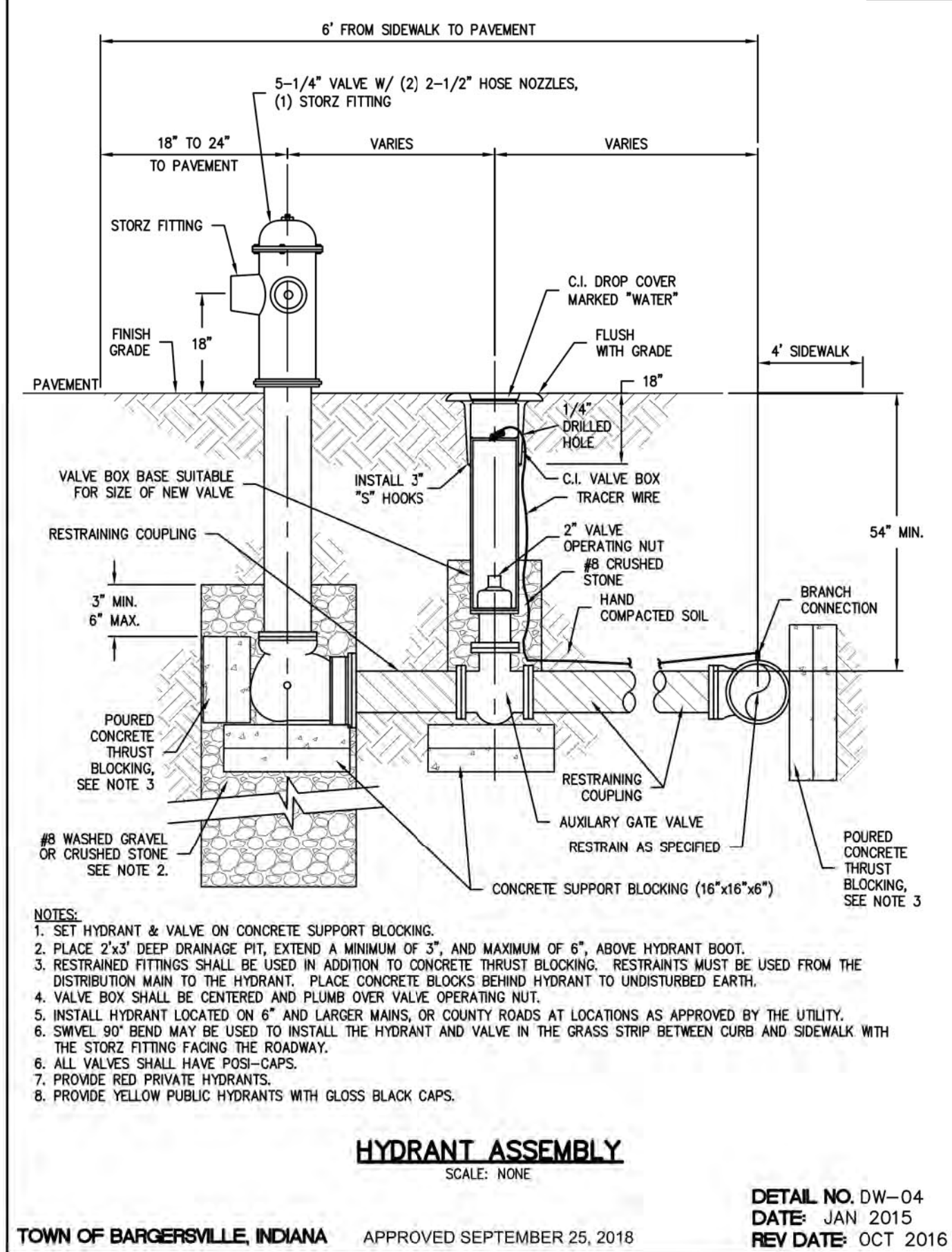
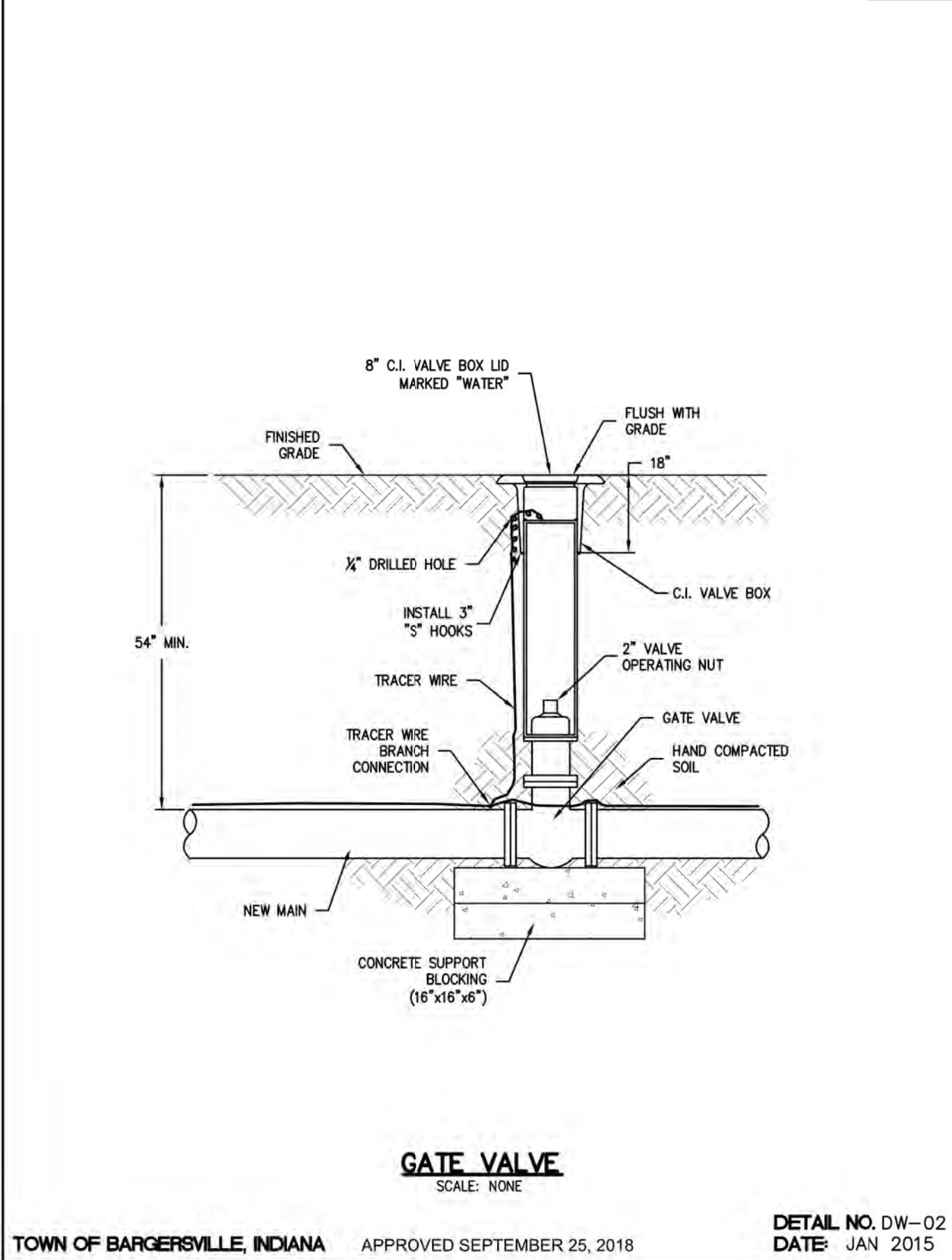
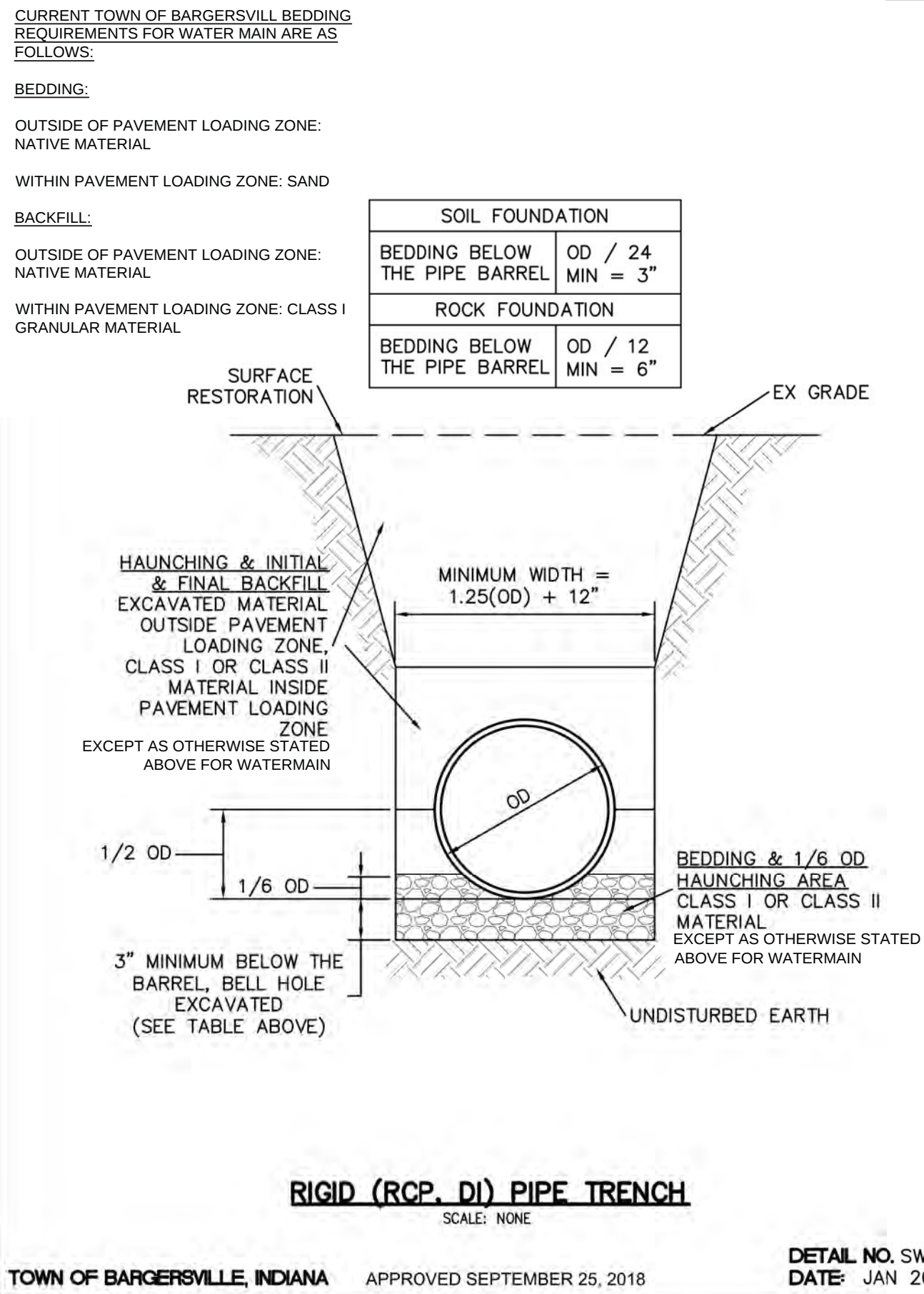
Duane A. Sharrer
DUANE A. SHARRER P.E. 890258

LENNAR

DEERFIELD SECTION 2
RUNYON ROAD, NORTH OF OLIVE BRANCH ROAD, JOHNSON COUNTY, IN

WATER MAIN PLAN
Section 3, Township 13 North, Range 3 East, White River Township, Johnson County, Indiana

SHEET NO.
C701
PROJECT NO.
W21.0353-2



10505 N. College Avenue
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317 | 843 - 0546/ax

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PROJECT NO.:	W21.0353-2
DWG NAME:	C702 Water Main Details
DESIGNED BY:	JP
CHECKED BY:	JP
DATE:	04/28/2023

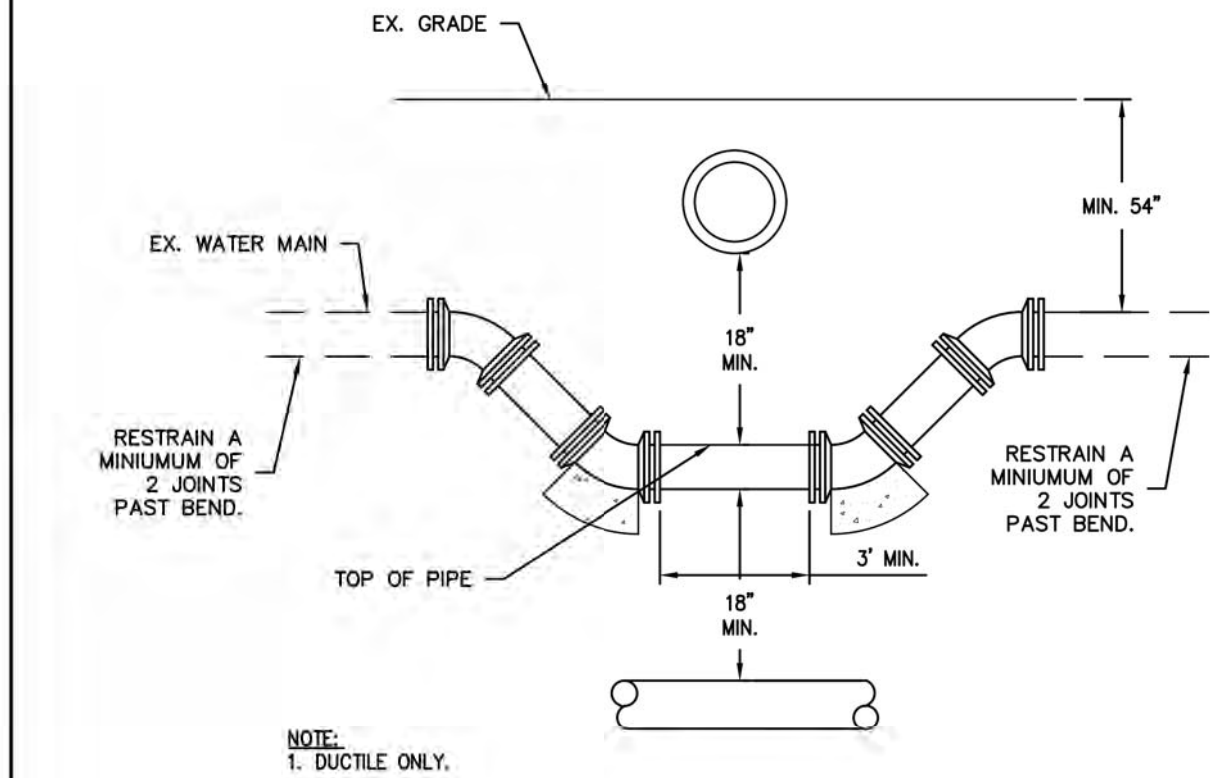
DUANE A. SHARRER
REGISTERED
No. 890258
STATE OF INDIANA
PROFESSIONAL ENGINEER

LENNAR
DEERFIELD SECTION 2
RUNYON ROAD, NORTH OF OLIVE BRANCH ROAD, JOHNSON COUNTY, IN
WATER MAIN DETAILS
Section 3, Township 13 North, Range 3 East, White River Township, Johnson County, Indiana

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IT IS AGAINST THE LAW TO EXCAVATE
WITHOUT NOTIFYING THE UNDERGROUND
LOCATION SERVICE TWO (2) WORKING
DAYS BEFORE COMMENCING WORK.

SHEET NO.
C702
PROJECT NO.
W21.0353-2

LOCATION: I:\2013\W21.0353-2\Section 2\Engineering\design\consolidated Water Main Details.dwg
DATE: 11/28/2013 10:47:41
PLOT: 11/28/2013 10:47:41
PLOTTER: HP-DesignJet 500



SPOT LOWERING
SCALE: NONE

TOWN OF BARGERSVILLE, INDIANA APPROVED SEPTEMBER 25, 2018

DETAIL NO. DW-13
DATE: JAN 2015

BEND RESTRAINT
ALL BENDS REQUIRE RESTRAINERS
ALL BENDS ARE DUCTILE IRON AND REQUIRE
(1) GRIP RING ON EACH SIDE OF THE FITTING.

22 1/2\"/>

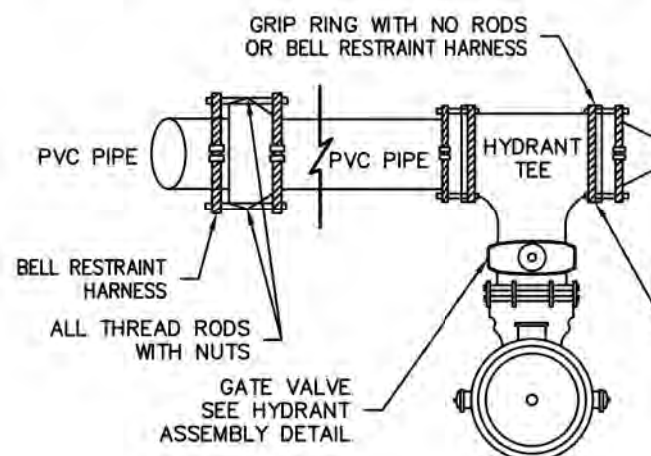
THRUST BLOCK REQUIRED ON ALL BENDS.

MAIN LINE REDUCER

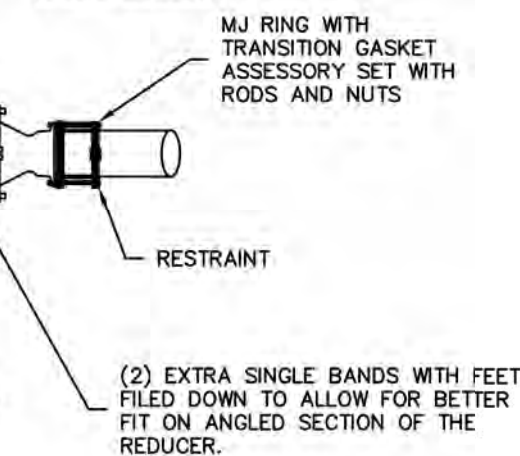
REDUCERS CAN ONLY BE USED AT A INTERSECTION
REDUCERS ON 6\"/>

REDUCERS ON 10\"/>

JOINT RESTRAINT DETAIL



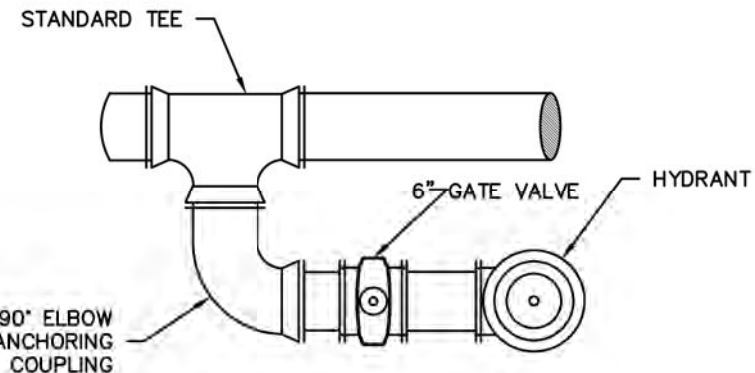
POLY REDUCER DETAIL
(SPROUT BY MECHANICAL)



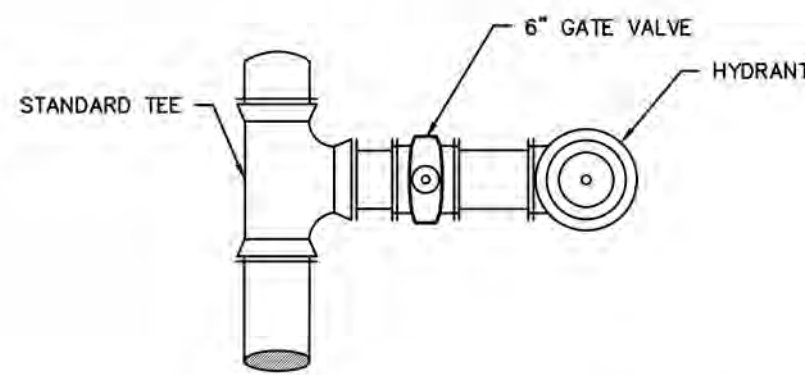
INSTALLATION OF RESTRAINTS
SCALE: NONE

TOWN OF BARGERSVILLE, INDIANA APPROVED SEPTEMBER 25, 2018

DETAIL NO. DW-16
DATE: JAN 2015
REV DATE: OCT 2016



INSTALLATION PARALLEL TO MAIN



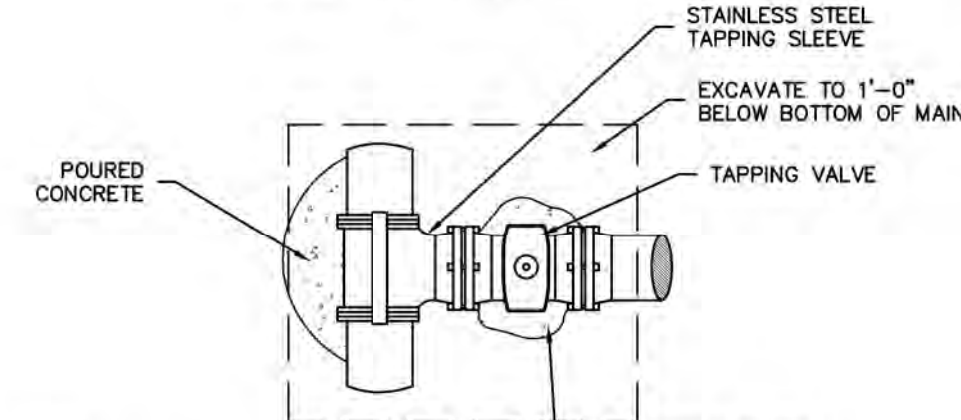
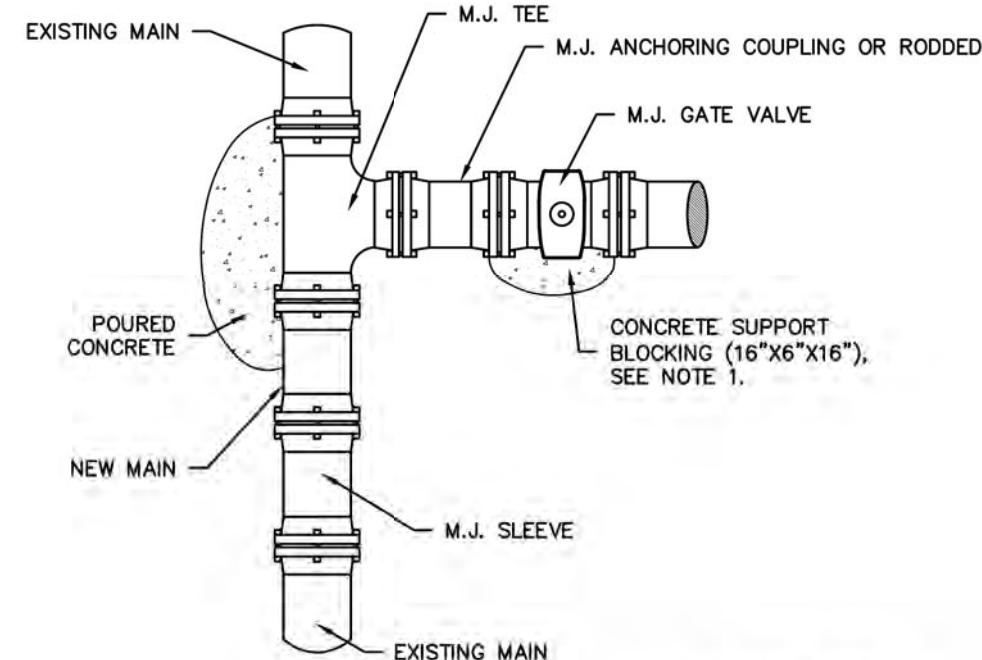
INSTALLATION PERPENDICULAR TO MAIN

NOTE:
1. ALL TEES MUST HAVE POURED THRUST BLOCKS.
(SEE APPLICABLE DETAILS).

HYDRANT CONNECTION
SCALE: NONE

TOWN OF BARGERSVILLE, INDIANA APPROVED SEPTEMBER 25, 2018

DETAIL NO. DW-17
DATE: JAN 2015

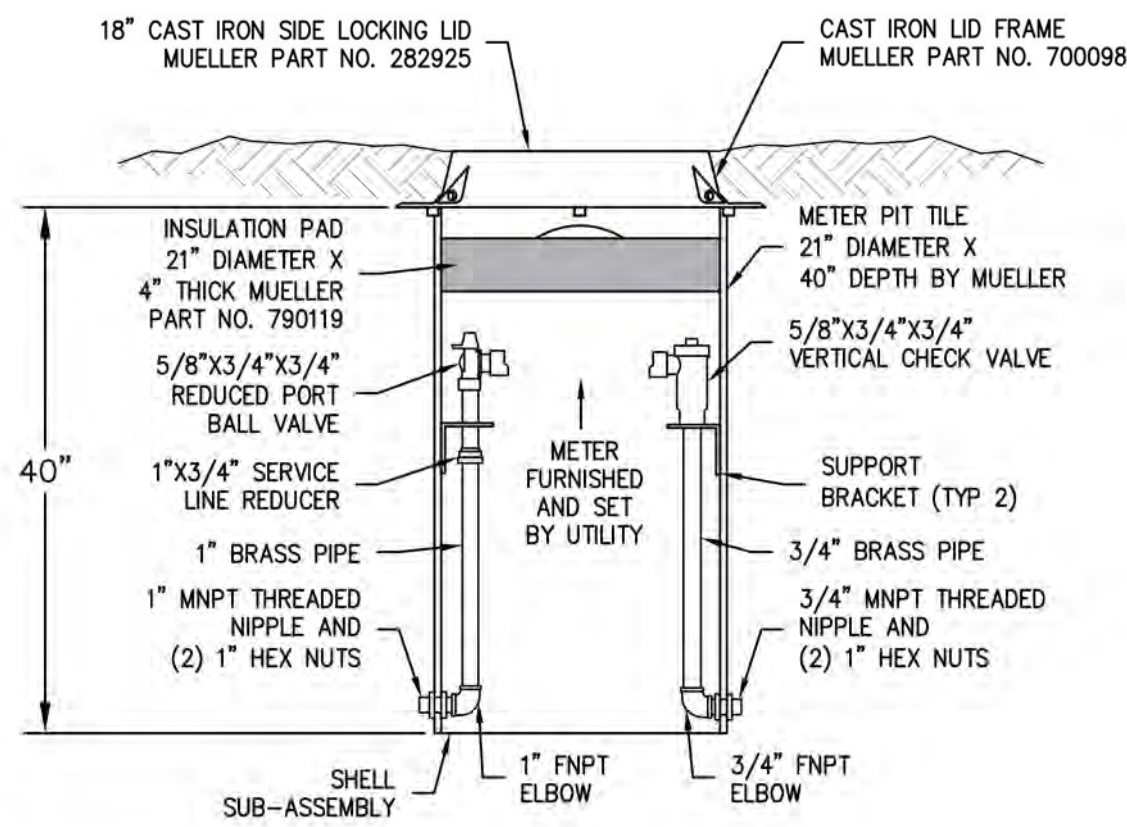


NOTES:
1. RESTRAINED FITTINGS SHALL BE USED IN ADDITION TO POURED CONCRETE THRUST BLOCKING.

MAIN CONNECTION
SCALE: NONE

TOWN OF BARGERSVILLE, INDIANA APPROVED SEPTEMBER 25, 2018

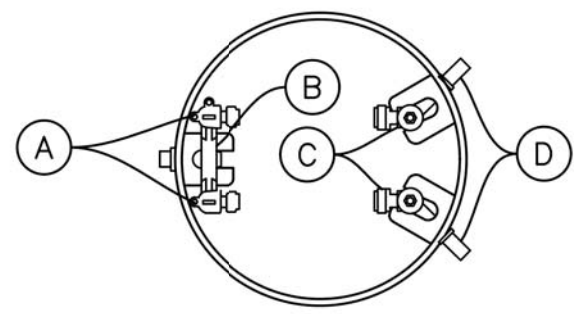
DETAIL NO. DW-18
DATE: JAN 2015



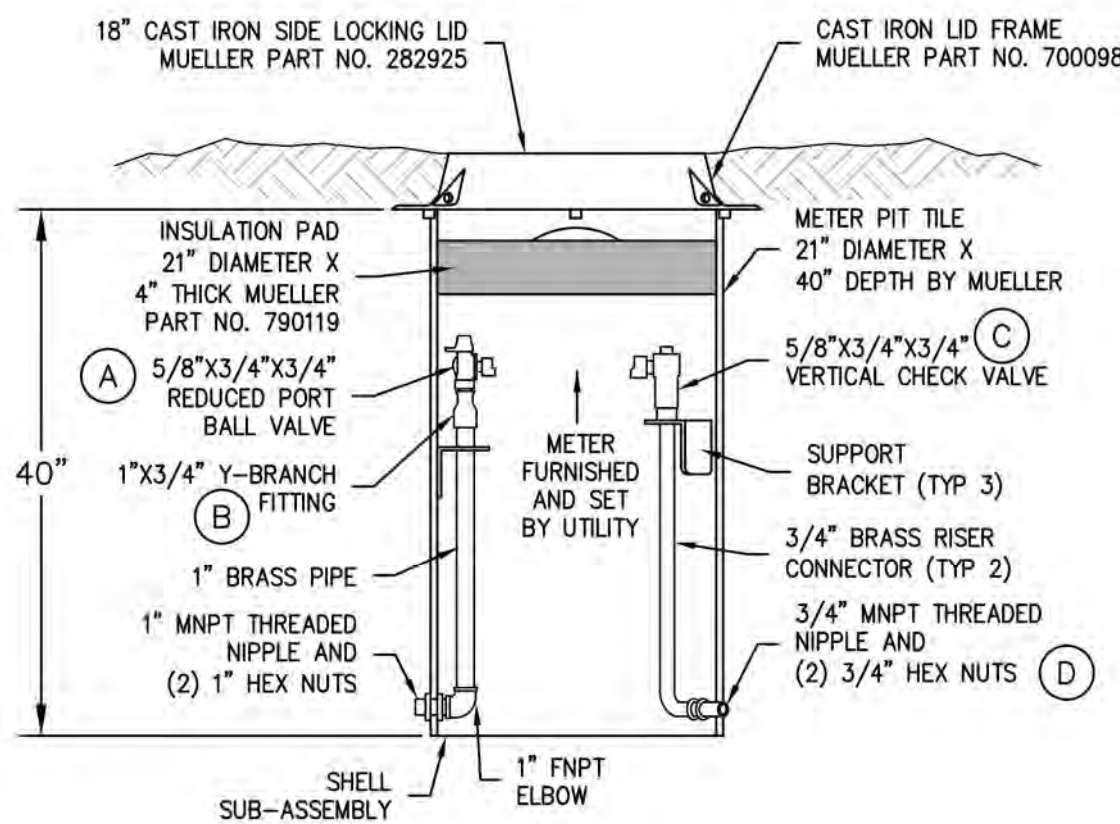
SINGLE METER PIT
(5/8\"/>

TOWN OF BARGERSVILLE, INDIANA APPROVED JANUARY 2, 2019

DETAIL NO. DW-20
DATE: JAN 2019
REV DATE:



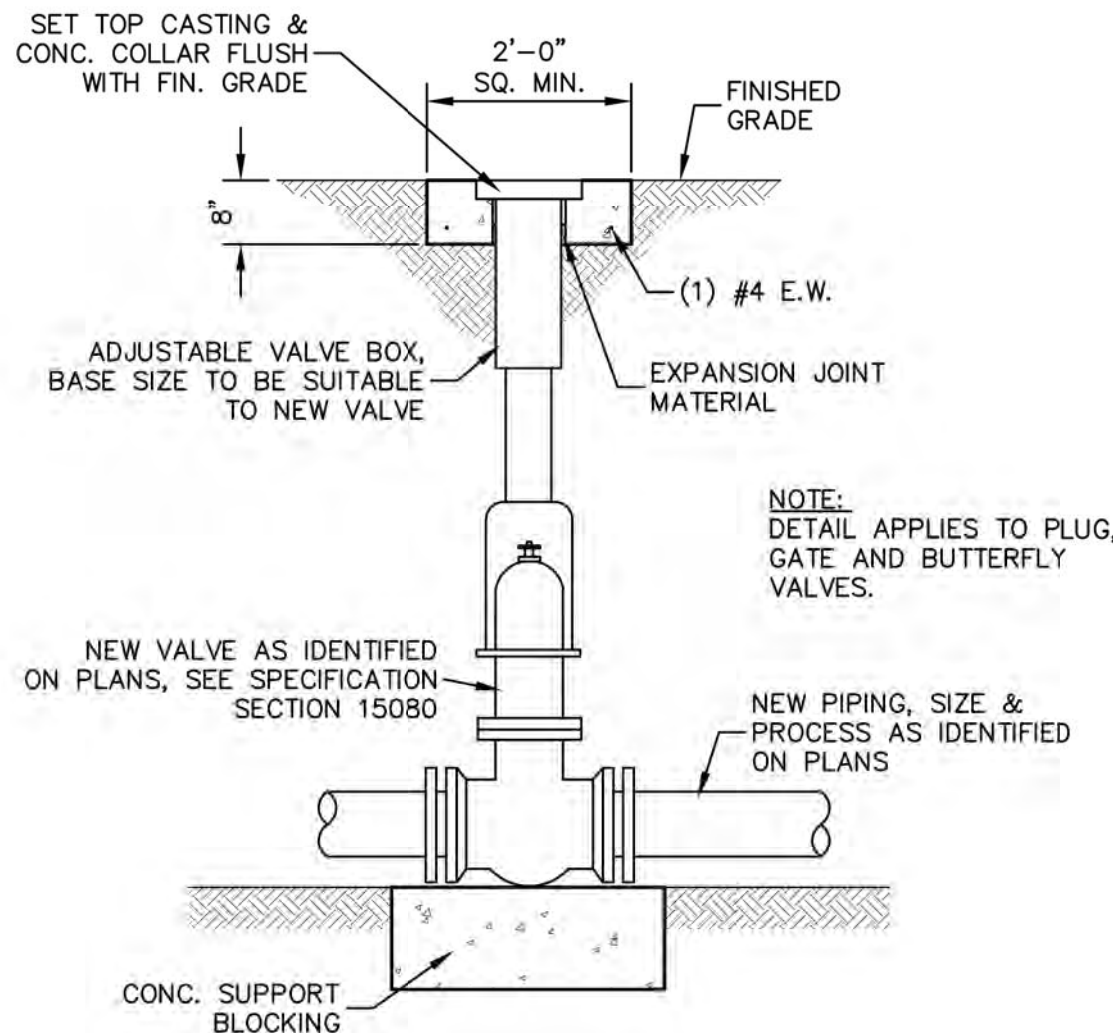
PLAN VIEW
SCALE: NONE



DOUBLE METER PIT
(5/8\"/>

TOWN OF BARGERSVILLE, INDIANA APPROVED JANUARY 2, 2019

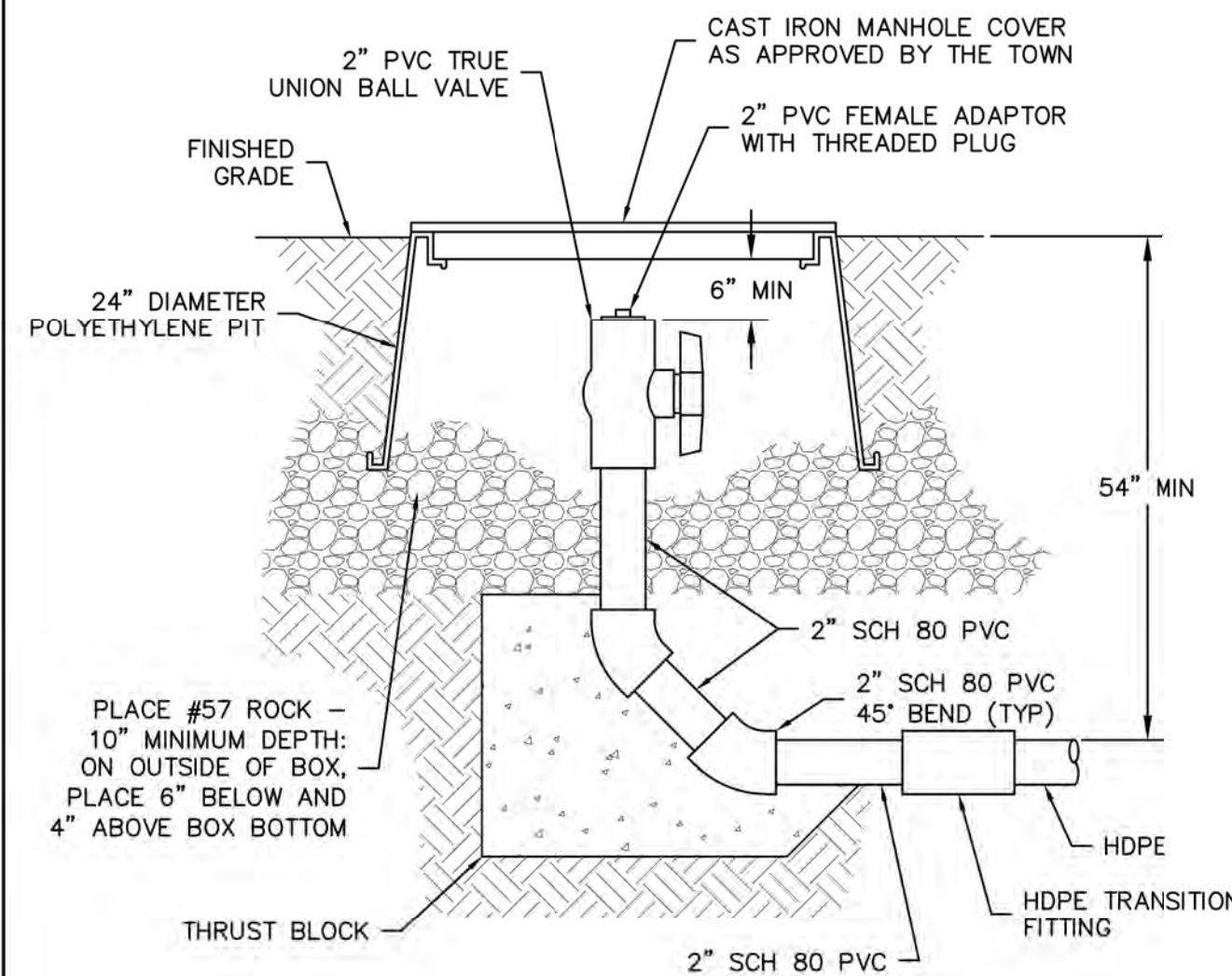
DETAIL NO. DW-21
DATE: JAN 2019
REV DATE:



VALVE & BOX DETAIL
SCALE: NONE

TOWN OF BARGERSVILLE, INDIANA APPROVED SEPTEMBER 25, 2018

DETAIL NO. SS-22
DATE: JAN 2015



BLOW-OFF VALVE DETAIL FOR NON-TRAFFIC BEARING AREAS
SCALE: NONE

TOWN OF BARGERSVILLE, INDIANA APPROVED SEPTEMBER 25, 2018

DETAIL NO. SS-35
DATE: JAN 2015

10505 N. College Avenue
Indianapolis, Indiana 46280
weihe.net

317 | 846 - 6611
800 | 452 - 6408
317 | 843 - 0546 fax

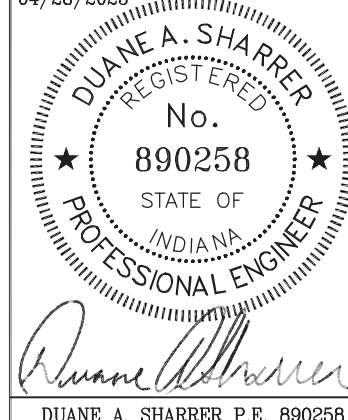
ALLAN H. WEIHE, P.E., L.S. - FOUNDER

WEIHE
ENGINEERS

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PROJECT NO.	W21.0353-2
DWG NAME	C703 Water Main Details
DESIGNED BY	SSS
DRAWN BY	SSS
CHECKED BY	JP
DATE	04/28/2023



DUANE A. SHARRER P.E. 890258

LENNAR

DEERFIELD SECTION 2

RUNYON ROAD, NORTH OF OLIVE BRANCH ROAD, JOHNSON COUNTY, IN

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W21.0353-2