

- SURVEY NOTES**
- REFERENCE IS MADE TO A PLAN ENTITLED "SURVEY & PLAN FOR VICTOR D.D. KUHN'S" DATED MAY 1, 1948 PREPARED BY BASCOM & SIEGER REGISTERED ENGINEERS DRAWING DR 18 / 103.
 - ELEVATIONS ARE REFERENCED TO NGVD 29 DATUM AND ARE DERIVED FROM SCALED DIMENSIONS FROM THE ALLENTOWN WEST USGS QUADRANGLE.
 - THIS PLAN IS BASED UPON A FIELD SURVEY CONDUCTED AS OF FEBRUARY 12, 2021 BY KEYSTONE CONSULTING ENGINEERS INC. USING A TRIMBLE S5 TOTAL STATION AND A TRIMBLE R-8 GPS WITH KEYNET AND REPRESENTS EXISTING FEATURES AND TOPOGRAPHY ON LANDS NOW OR FORMERLY OF WILLIAM H. RUHE, ET AL.
 - UTILITY LOCATIONS DEPICTED HEREON ARE APPROXIMATE AND ARE BASED ON FIELD LOCATION OF OBVIOUS ABOVE-GROUND EVIDENCE. UNDERGROUND LINES WHOSE PRESENCE IS NOT IMPLIED ON THE SURFACE BY MARKINGS OR STRUCTURES MAY NOT HAVE BEEN SHOWN. THIS PLAN DOES NOT GUARANTEE THAT ADDITIONAL UTILITIES DO NOT EXIST.
 - THE EXISTENCE AND LOCATIONS OF UNDERGROUND UTILITIES ON THE SITE SHALL BE VERIFIED BY THE CONTRACTOR IN ACCORDANCE WITH PA ACT 187 AND 121 PRIOR TO COMMENCING ANY EXCAVATION WORK.
 - PROPERTY OWNER NAME, DEED AND TAX PARCEL IDENTIFIER INFORMATION AS SHOWN IS BASED UPON LEHIGH COUNTY TAX MAP RECORDS AS OF FEBRUARY 12, 2021 AND IS SUBJECT TO THE ACCURACIES OR INACCURACIES THEREOF.
 - LINE AS SHOWN WITH BEARINGS AND DISTANCES OR CURVE INFORMATION INDICATE LINES MEASURED BY THIS SURVEY. LINES WITHOUT ANY GEOMETRIC ANNOTATION MAY HAVE BEEN PLOTTED USING RECORD INFORMATION AND ARE INTENDED FOR GENERAL SITE ORIENTATION ONLY.
 - ELEVATIONS AND CONTOURS AS SHOWN HEREON ARE BASED UPON GPS OBSERVATIONS USING A TRIMBLE R-8 WITH KEYNET AND ARE ACCURATE WITHIN 0.15' OF USGS NORTH AMERICAN VERTICAL DATUM OF 1988.
 - THIS SURVEY AND PLAN HAS BEEN PREPARED WITHOUT THE BENEFIT OF A TITLE SEARCH AND IS THEREFORE SUBJECT TO ANY EASEMENTS OR OTHER PERTINENT FACTS WHICH SUCH MIGHT DISCLOSE.
 - THE LOCATION OF EXISTING UTILITIES IS THE RESPONSIBILITY OF THE DEVELOPER/DESIGN ENGINEER/CONTRACTOR AND THE LOCATIONS OF SUCH FACILITIES HAVE NOT BEEN REVIEWED BY THE PIDCOCK COMPANY OR THE TOWNSHIP. THE DEVELOPER/DESIGN ENGINEER/CONTRACTOR IS RESPONSIBLE FOR CONFIRMING THE LOCATION OF ALL UTILITIES AND TO AVOID CONFLICTS OF THE SAME WITH PROPOSED IMPROVEMENTS. SIGNIFICANT EFFORTS TO RESOLVE SUCH CONFLICTS, INCLUDING BUT NOT NECESSARILY LIMITED TO REDESIGN, CONSTRUCTION DELAYS, UTILITY RELOCATIONS, ETC., MAY RESULT IF CONFLICTS WITH EXISTING UTILITIES ARE ENCOUNTERED DURING CONSTRUCTION.

SOILS DATA:

THE FOLLOWING INFORMATION WAS TAKEN FROM THE USDA WEB SOIL SURVEY:

BkB - BERKS-WEIKERT COMPLEX, 3 TO 8 PERCENT SLOPES
 BkC - BERKS-WEIKERT COMPLEX, 15 TO 25 PERCENT SLOPES
 UmB - URBAN LAND-DUFFIELD COMPLEX, 0 TO 8 PERCENT SLOPES
 WbB - WASHINGTON SILT LOAM, 3 TO 8 PERCENT SLOPES

ALL SOILS ARE HYDROLOGIC SOIL GROUP B
 DEPTH TO WATERTABLE - 5' +
 DEPTH TO BEDROCK - 2' +

SOIL TYPE	LIMITATIONS
BkB, BkC, UmB, WbB	1. SHALLOW DEPTH TO BEDROCK
WbB	2. SUSCEPTIBLE TO FORMATION OF SINKHOLES

RESOLUTIONS:

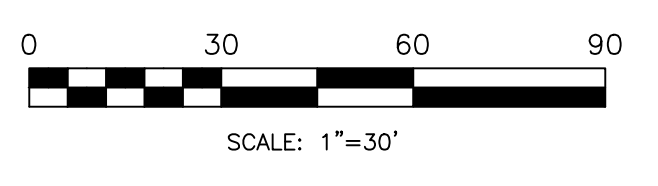
- TEST BORINGS SHOULD BE COMPLETED TO DETERMINE IF ROCK WILL BE ENCOUNTERED.
- REPAIR SINKHOLES IN ACCORDANCE WITH THE SINKHOLE REMEDIATION DETAIL SHOWN ON THE PLANS.

ACT 167 SUBAREAS:

- SUBAREA 129 - NORTHERN SUBAREA DRAINING TO JORDAN CREEK TOTAL OF 1.63 ACRES
- SUBAREA 129 - SOUTHERN SUBAREA DRAINING TO JORDAN CREEK TOTAL OF 3.08 ACRES

LEGEND

SLANTED TEXT INDICATES EXISTING FEATURES	UPRIGHT TEXT INDICATES PROPOSED FEATURES
	UTILITY POLE & GUY WIRE
	STORM INLET
	SANITARY MANHOLE
	WATER VALVE
	GAS VALVE
	SIGN
	IRON PIN FOUND
	IRON PIPE FOUND
	PAVEMENT EDGE
	SANITARY LINE
	STORM SEWER
	WATER LINE
	GAS LINE
	OVERHEAD WIRES
	UNDERGROUND ELECTRIC
	FENCE
	CONCRETE CURB
	PROPERTY BOUNDARY
	LEGAL RIGHT-OF-WAY
	CONTOUR
	100
	ACT 167 BOUNDARY



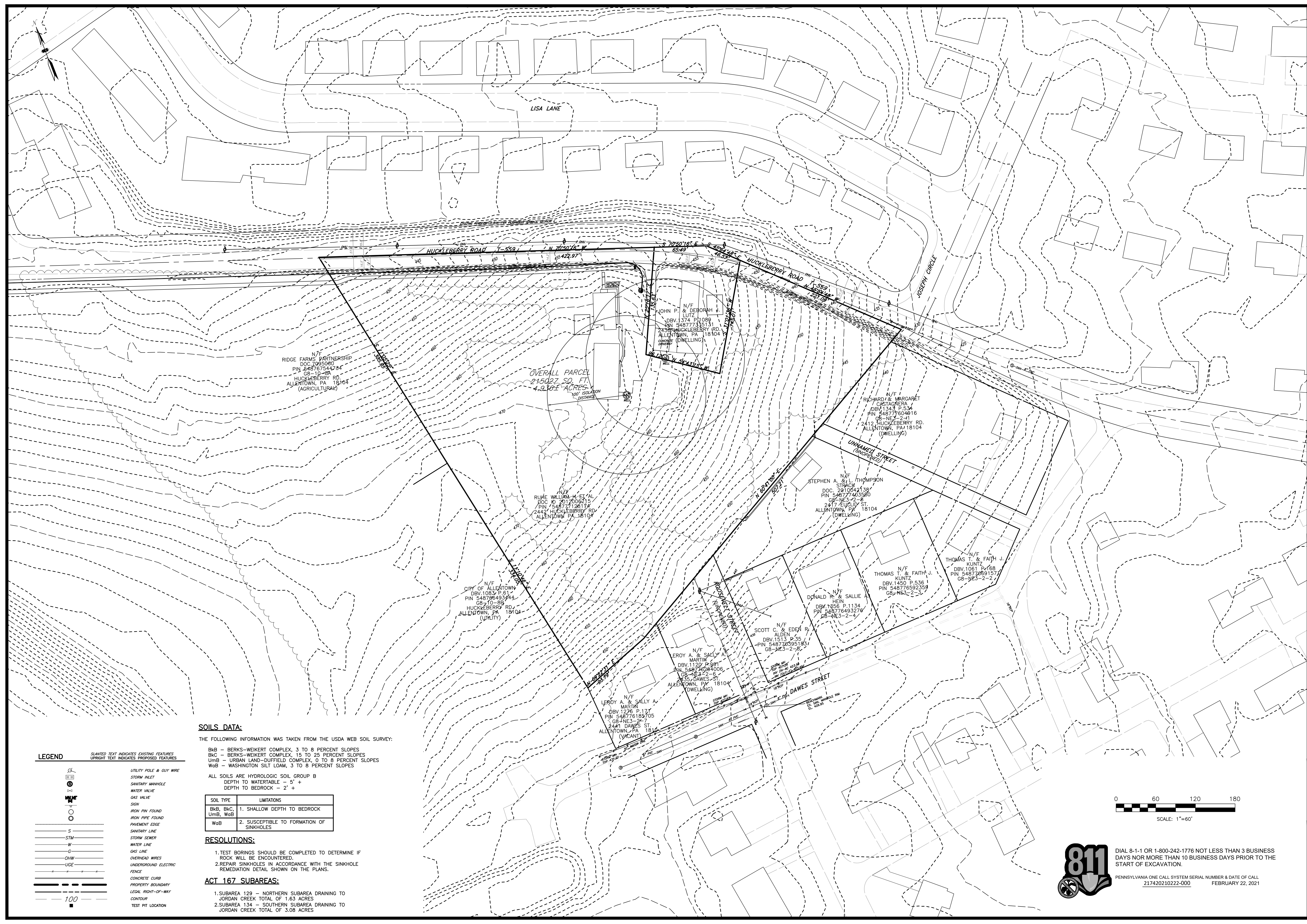
KEYSTONE CONSULTING ENGINEERS, INC.
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 East Office: Bethlehem, West Office: Allentown, North Office: Kresgeville
 www.KCEINC.com



EXISTING FEATURES & DEMOLITION PLAN
RUHE MINOR SUBDIVISION
PRELIMINARY/FINAL PLAN
 2442 HUCKLEBERRY ROAD
 SOUTH WHITEHALL TOWNSHIP
 LEHIGH COUNTY, PENNSYLVANIA

REVISIONS	DATE	BY	DATE	BY
06/16/2021	06/16/2021	MSN	06/16/2021	MSN
12/16/2021	12/16/2021	MSN	12/16/2021	IMK
09/20/2023	09/20/2023	IMK	09/20/2023	IMK
11/17/2023	11/17/2023	IMK	11/17/2023	IMK

DESIGNED BY: KCE
 DRAWN BY: MFC
 CHECKED BY: MFC/ARF
 DATE: March 05, 2021
 SCALE: 1" = 30'
 JOB NUMBER: CW-20-128
 SHEET: 2 OF 23



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 THE FOLLOWING INFORMATION WAS TAKEN FROM THE USDA WEB SOIL SURVEY:

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 BkC - BERKS-WEIKERT COMPLEX, 15 TO 25 PERCENT SLOPES
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 UPRIGHT TEXT INDICATES PROPOSED FEATURES

UTILITY POLE & GUY WIRE
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 SANITARY MANHOLE
 WATER VALVE
 GAS VALVE
 SIGN
 IRON PIN FOUND
 IRON PIPE FOUND
 PAVEMENT EDGE
 SANITARY LINE
 STORM SEWER
 WATER LINE
 GAS LINE
 OVERHEAD WIRES
 UNDERGROUND ELECTRIC
 FENCE
 CONCRETE CURB
 PROPERTY BOUNDARY
 LEGAL RIGHT-OF-WAY
 CONTOUR
 TEST PIT LOCATION

100

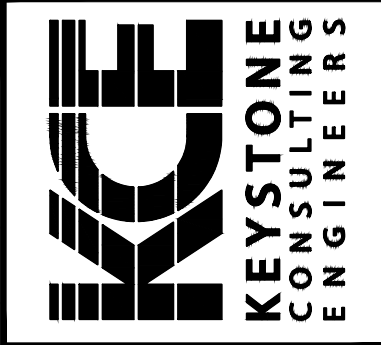


811

DIAL 8-1-1 OR 1-800-242-1776 NOT LESS THAN 3 BUSINESS DAYS NOR MORE THAN 10 BUSINESS DAYS PRIOR TO THE START OF EXCAVATION.

PENNSYLVANIA ONE CALL SYSTEM SERIAL NUMBER & DATE OF CALL
 217420210222-000 FEBRUARY 22, 2021

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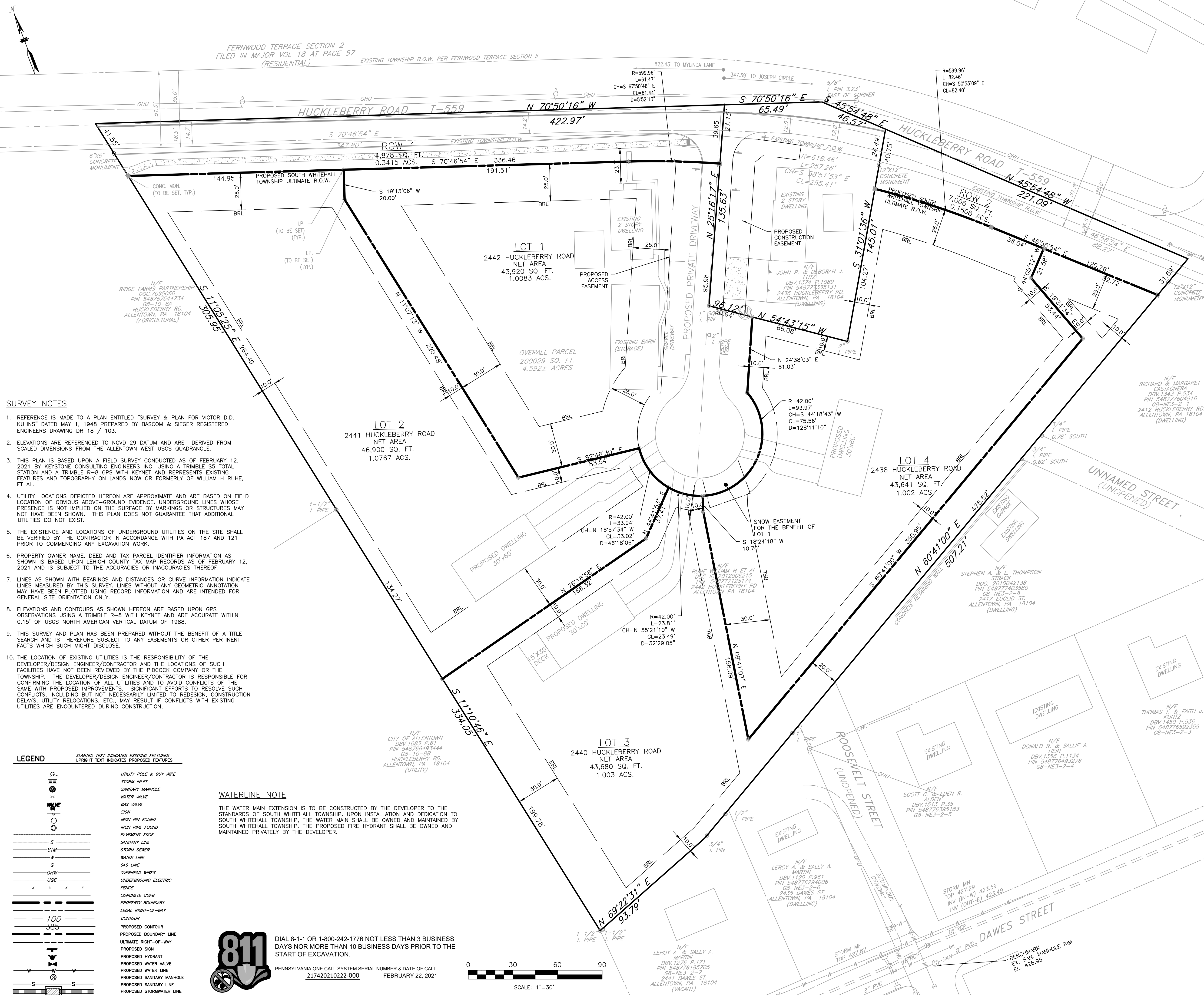


EXISTING FEATURES (EXPANDED VIEW, 60 SCALE)
**RUHE MINOR SUBDIVISION
 PRELIMINARY/FINAL PLAN**
 2442 HUCKLEBERRY ROAD
 SOUTH WHITEHALL TOWNSHIP
 LEHIGH COUNTY, PENNSYLVANIA

DESIGNED BY:	REVISIONS
KCE	BY DATE
MFC	MSN 06/16/2021
MFC/ARF	MSN 12/16/2021
March 05, 2021	IMK 09/20/2023
1" = 60'	IMK 11/17/2023
CW-20-128	
3 OF 23	

FERNWOOD TERRACE SECTION 2
FILED IN MAJOR VOL 18 AT PAGE 57
(RESIDENTIAL)

EXISTING TOWNSHIP R.O.W. PER FERNWOOD TERRACE SECTION II



SURVEY NOTES

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LEGEND

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	ULTIMATE RIGHT-OF-WAY
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	PROPOSED HYDRANT
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	PROPOSED WATER LINE
	PROPOSED SANITARY MANHOLE
	PROPOSED SANITARY LINE
	PROPOSED STORMWATER LINE

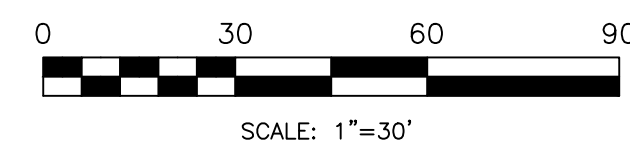
WATERLINE NOTE

THE WATER MAIN EXTENSION IS TO BE CONSTRUCTED BY THE DEVELOPER TO THE STANDARDS OF SOUTH WHITEHALL TOWNSHIP. UPON INSTALLATION AND DEDICATION TO SOUTH WHITEHALL TOWNSHIP, THE WATER MAIN SHALL BE OWNED AND MAINTAINED BY SOUTH WHITEHALL TOWNSHIP. THE PROPOSED FIRE HYDRANT SHALL BE OWNED AND MAINTAINED PRIVATELY BY THE DEVELOPER.



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PENNSYLVANIA ONE CALL SYSTEM SERIAL NUMBER & DATE OF CALL
217420210222-000 FEBRUARY 22, 2021



OWNER'S STATEMENT:

THE UNDERSIGNED IS THE OWNER, EQUITABLE OWNER, OR HAS AN OPTION OR CONDITIONAL CONTRACT OF SALE ON THE LAND PROPOSED TO BE SUBDIVIDED OR DEVELOPED AND HAS NO LITIGATION OR LIENS EXIST OR ARE PENDING ON THE SITE.

OWNER _____

OWNER'S CERTIFICATION:

I BEING DULY SWORN ACCORDING TO LAW DEPOSE AND SAY THAT I AM THE SOLE OWNER OF THIS PROPERTY, IN PEACEFUL POSSESSION OF THE SAME, AND THAT THERE ARE NO SUITS PENDING AFFECTING THE TITLE THEREOF. I DO FURTHER DEPOSE AND SAY THAT I HAVE COMPLIED WITH ALL REQUIREMENTS, PROVISIONS AND CONDITIONS OF RESOLUTION 20____ BY WHICH THE TOWNSHIP BOARD OF COMMISSIONERS CONDITIONALLY WAIVED THE REQUIREMENTS OF THE TOWNSHIP SUBDIVISION AND LAND DEVELOPMENT ORDINANCE FOR THE PROJECT REFLECTED ON THIS PLAN. I AGREE THAT I SHALL EXONERATE, INDEMNIFY, PROTECT, DEFEND AND SAVE HARMLESS THE TOWNSHIP FROM ANY AND ALL CLAIMS, LAWSUITS, DAMAGES AND LIABILITIES OF EVERY KIND, CHARACTER AND MANNER WHATSOEVER PERTAINING TO, RELATING TO, RESULTING FROM, CAUSED BY OR ARISING OUT OF THE TOWNSHIP'S APPROVAL OF THE WAIVER REQUEST AS EVIDENCED BY RESOLUTION 20____ ALL AS MORE FULLY OUTLINED IN RESOLUTION 20____.

OWNER: _____

WILLIAM H. RUHE
OWNER

ADJACENT OWNER'S STATEMENT:

THE UNDERSIGNED ACKNOWLEDGES ALL IMPROVEMENTS PROPOSED ON AND AROUND THE PROPERTY AT 2436 HUCKLEBERRY ROAD ARE LIMITED TO ADJUSTMENT OF DRIVEWAY AND GRADING TIE IN, HAVE BEEN AGREED UPON.

JOHN P. LUTZ
ADJACENT PROPERTY OWNER

REVIEWED BY THE LEHIGH VALLEY PLANNING COMMISSION:

COUNTY PLANNING COMMISSION STAFF PERSON _____ DATE _____

APPROVED BY THE SOUTH WHITEHALL TOWNSHIP PLANNING COMMISSION:

APPROVED _____ BY THE SOUTH WHITEHALL TOWNSHIP PLANNING COMMISSION.
MONTH DAY YEAR

CHAIRMAN _____

SECRETARY _____

APPROVED BY THE BOARD OF COMMISSIONERS OF THE TOWNSHIP OF SOUTH WHITEHALL:

APPROVED _____ BY THE BOARD OF COMMISSIONERS OF THE TOWNSHIP OF SOUTH WHITEHALL.
MONTH DAY YEAR

PRESIDENT _____

SECRETARY _____

TOWNSHIP ENGINEER _____

TOWNSHIP WAIVER ACKNOWLEDGEMENT:

BASED UPON AND EXPRESSLY IN RELIANCE ON THE FOREGOING CERTIFICATIONS OF THE OWNER AND DESIGN PROFESSIONAL, THE WITHIN PLAN IS ACCEPTED BY SOUTH WHITEHALL TOWNSHIP AS THE PLAN SATISFYING ALL REQUIREMENTS, PROVISIONS AND CONDITIONS OF RESOLUTION 20____.

PRESIDENT _____

PROFESSIONAL ENGINEER'S CERTIFICATION

I, ALAN R. FORNWALT, P.E., A REGISTERED PROFESSIONAL ENGINEER IN THE COMMONWEALTH OF PENNSYLVANIA, DO HEREBY CERTIFY THAT THE ACCOMPANYING APPLICATION, PLANS AND SUPPORTING DOCUMENTATION ARE TRUE AND CORRECT, TO THE BEST OF MY KNOWLEDGE.

ALAN R. FORNWALT P.E. PE 070819
KEYSTONE CONSULTING ENGINEERS, INC.
5012 MEDICAL CENTER CIRCLE, ALLENTOWN, PA 18106

LEHIGH COUNTY RECORDER OF DEEDS:

LEHIGH COUNTY OFFICIAL _____ DATE _____

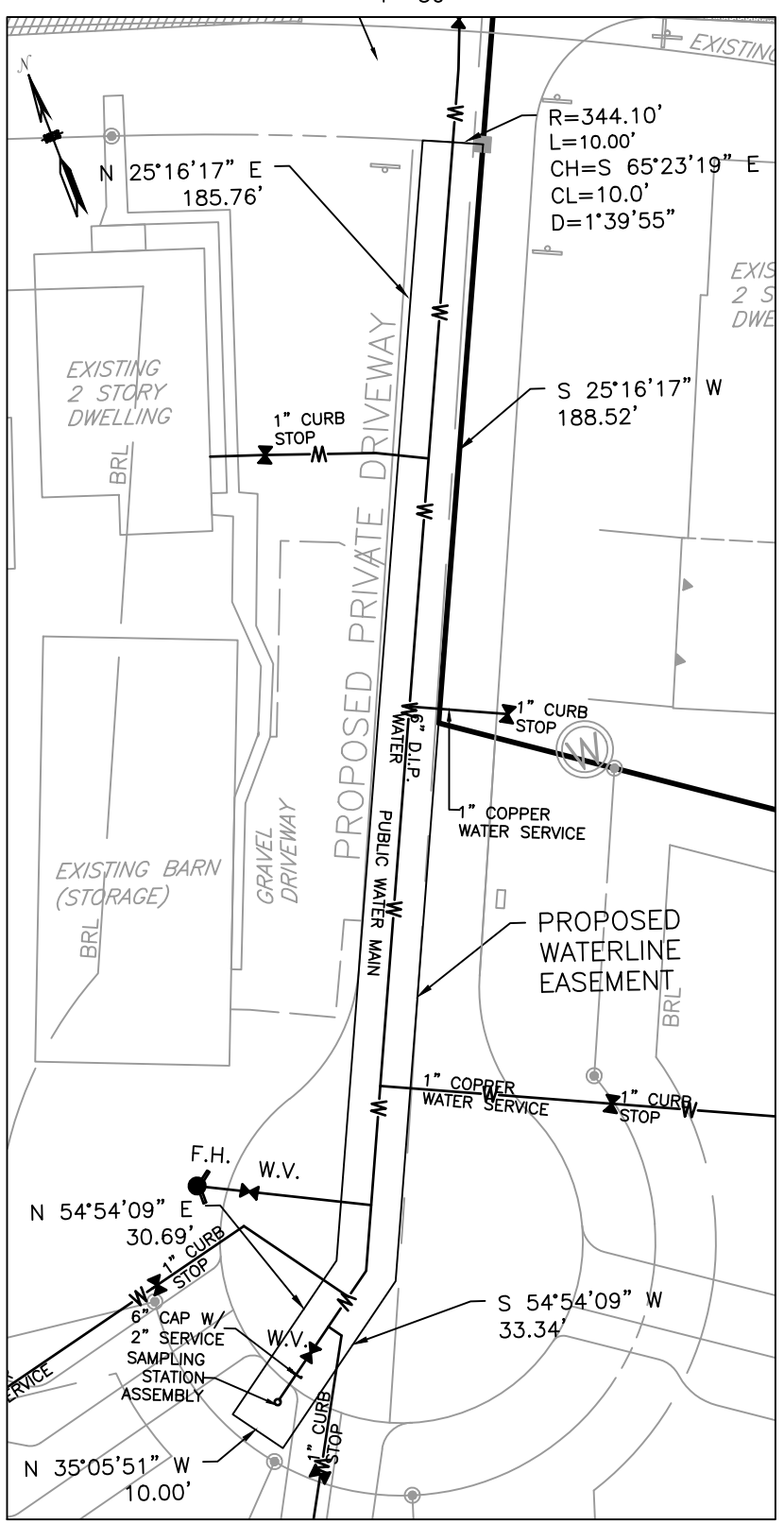
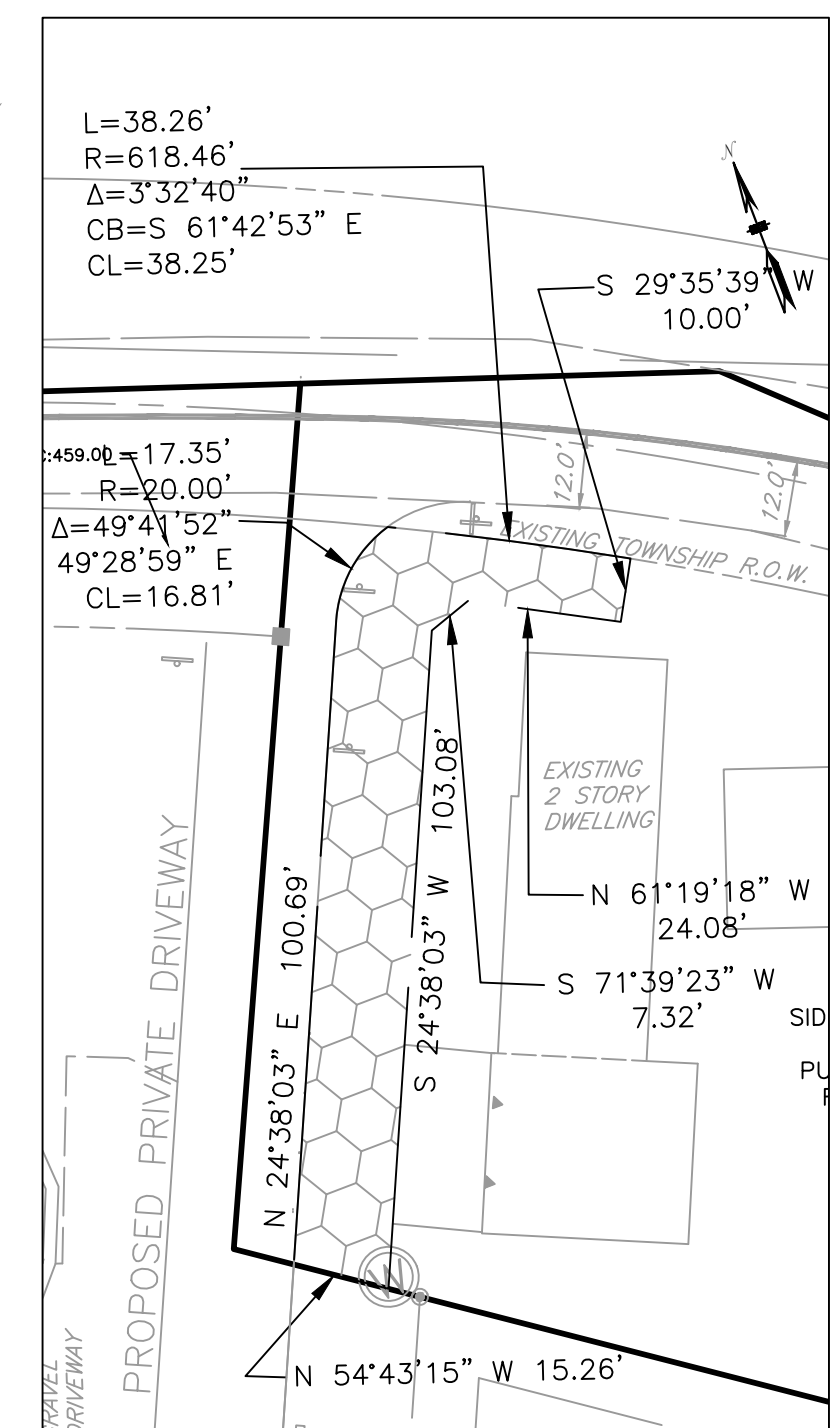
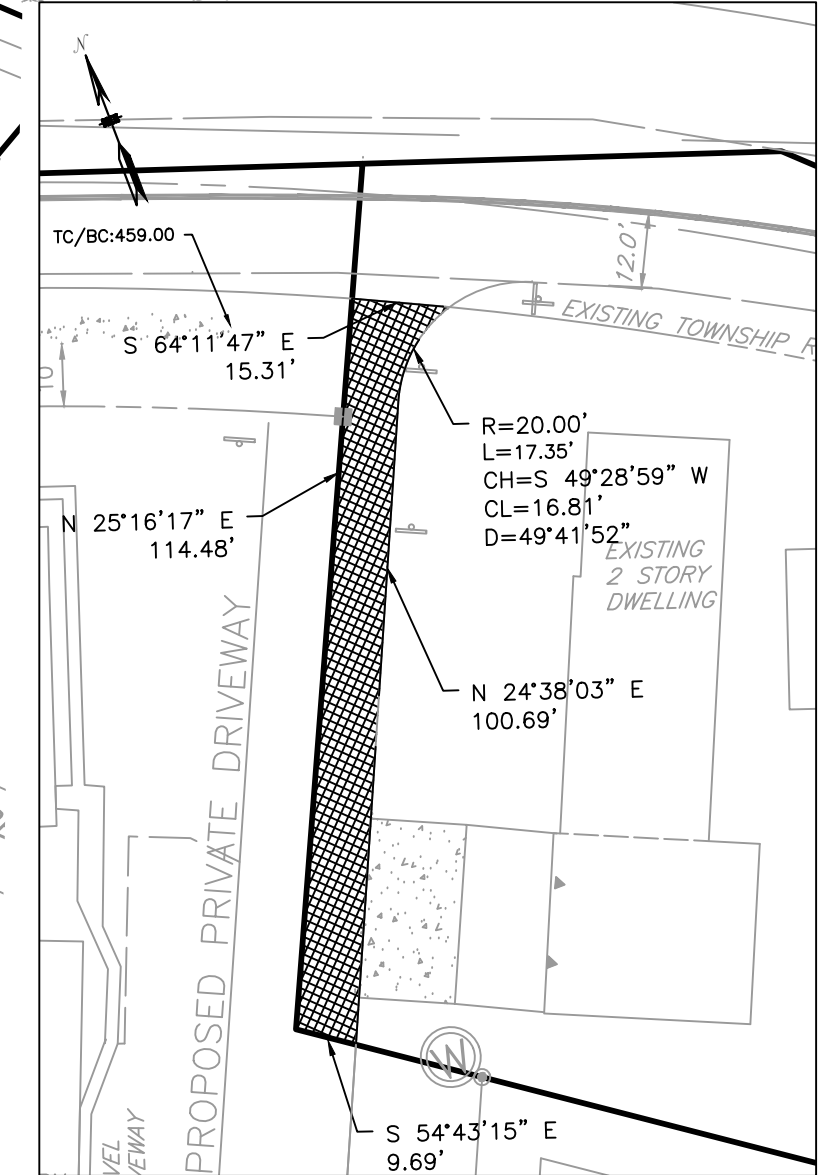
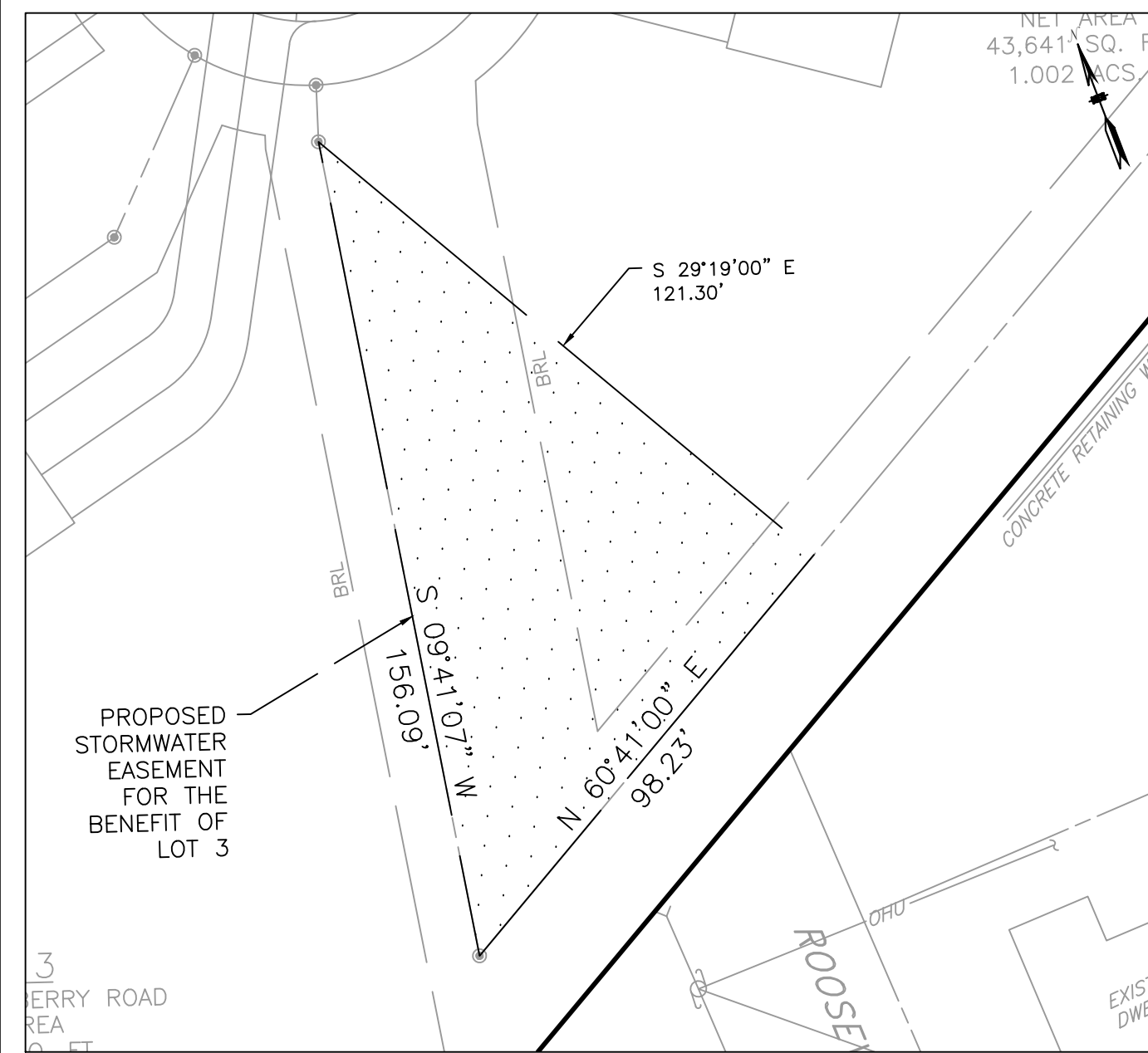
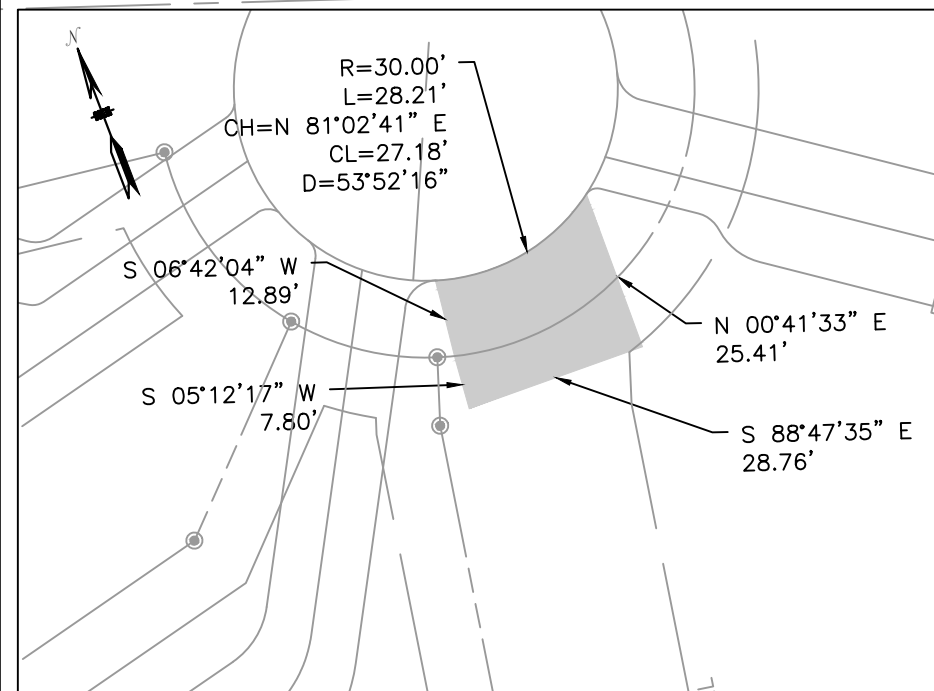
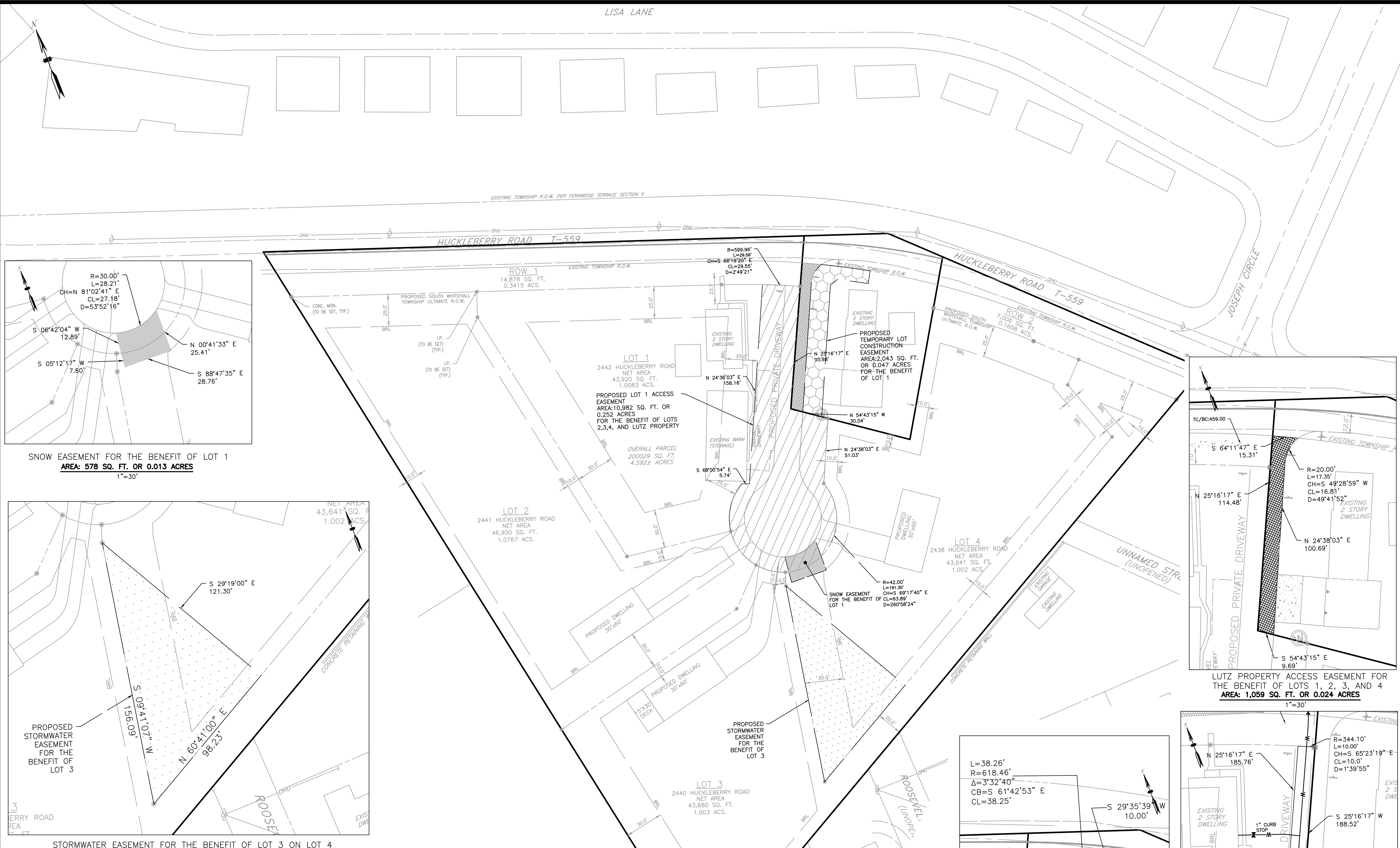
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SUBDIVISION PLAN
RUHE MINOR SUBDIVISION PLAN
PRELIMINARY/FINAL PLAN
2442 HUCKLEBERRY ROAD
SOUTH WHITEHALL TOWNSHIP
LEHIGH COUNTY, PENNSYLVANIA

DESIGNED BY:	REVISIONS
KCE	BY DATE
MSN	06/16/2021
MFC/ARF	MSN 12/16/2021
IMK	IMK 09/20/2023
IMK	IMK 11/17/2023
DATE:	MARCH 5, 2024
SCALE:	1" = 30'
JOB NUMBER:	CW-20-128
SHEET:	4 OF 23



LEGEND

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STORMWATER EASEMENT NOTES

- A STORMWATER MANAGEMENT ACCESS BLANKET EASEMENT HAS BEEN PROVIDED FOR ACCESS TO POST CONSTRUCTION STORMWATER MANAGEMENT BMPs FOR OPERATION AND MAINTENANCE PROCEDURES.
- ALL DRAINAGE EASEMENTS REQUIRED BY ORDINANCE OR SHOWN ON THE RECORD PLAN SHALL BE CONVEYED BY THE RESPECTIVE PROPERTY OWNER TO THE BENEFIT OF SOUTH WHITEHALL TOWNSHIP AND ITS SUCCESSORS AND ASSIGNS. IT SHALL BE THE PERPETUAL RESPONSIBILITY OF THE PROPERTY OWNER TO MAINTAIN THE EASEMENT AREAS ON THE LOT AND KEEP THEM CLEAR OF ANY AND ALL OBSTRUCTIONS TO PROPER DRAINAGE. PROPERTY OWNER SHALL CONVEY RIGHTS OF ACCESS IN, UNDER AND ACROSS THE EASEMENT AREAS TO SOUTH WHITEHALL TOWNSHIP FOR PURPOSES OF ACCESSING AND MAINTAINING ANY AND ALL PUBLIC DRAINAGE IMPROVEMENTS, INCLUDING PIPES AND APPURTENANCES, IN SAID AREAS.
- IN THE EVENT THAT THE PROPERTY OWNER FAILS TO PROPERLY MAINTAIN DRAINAGE STRUCTURES, SMILES AND APPURTENANCES, AFTER NOTIFICATION TO THE PROPERTY OWNER BY THE TOWNSHIP, THE TOWNSHIP IS AUTHORIZED TO ENTER UPON THE PROPERTY TO PERFORM SUCH MAINTENANCE AND THEREAFTER RECOVER THE COST OF PERFORMING SUCH SERVICE FROM THE PROPERTY OWNER. IN ORDER TO ENFORCE THE RECOVERY OF SUCH COST OF SERVICE, THE TOWNSHIP SHALL HAVE THE RIGHT TO FILE A LITIGATION AGAINST SUCH PROPERTY OWNER AND THEREAFTER TO EXERCISE ITS REMEDIES IN ACCORDANCE WITH THE TOWNSHIP'S CODE.
- IN THE EVENT THAT THE PROPERTY OWNER FAILS TO MAINTAIN DRAINAGE STRUCTURES, SMILES AND APPURTENANCES, AFTER NOTIFICATION TO THE PROPERTY OWNER BY AN APPROVED BMP O&M PLAN OR TO ALLOW THE PROPERTY TO REMAIN IN A CONDITION WHICH DOES NOT CONFORM TO AN APPROVED BMP O&M PLAN UNLESS AN EXEMPTION IS GRANTED IN WRITING BY SOUTH WHITEHALL TOWNSHIP.
- THE DEVELOPER, ITS SUCCESSORS OR ASSIGNS, HEREBY RESERVES THE RIGHT TO ENTER UPON EACH AND EVERY LOT AND AREA OF THE SUBDIVISION/DEVELOPMENT DEPICTED HEREON, UNTIL EXPIRATION OF THE STATUTORY MAINTENANCE PERIOD FOLLOWING DEDICATION OF PUBLIC IMPROVEMENTS AS SET FORTH IN SECTION 509 OF THE PENNSYLVANIA MUNICIPALITIES PLANNING CODE, AS AMENDED, 33 P.S. 10509, FOR THE PURPOSE OF COMPLETING ANY LANDSCAPING AS REQUIRED BY THE MUNICIPALITY AND FURTHER, TO MAKE SUCH MODIFICATIONS IN GRADING AND/OR DRAINAGE IMPROVEMENTS ON ANY LOT AS MAY BE NECESSARY IN THE DISCRETION OF THE DEVELOPER, ITS SUCCESSORS OR ASSIGNS, AND/OR THE MUNICIPAL ENGINEER FOR SATISFACTORY STORM WATER MANAGEMENT.

WATERLINE NOTE

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OWNER'S CERTIFICATION:

I BEING DULY SWORN ACCORDING TO LAW DEPOSE AND SAY THAT I AM THE SOLE OWNER OF THIS PROPERTY, IN PEACEFUL POSSESSION OF THE SAME, AND THAT THERE ARE NO SUITS PENDING AFFECTING THE TITLE THEREOF. I DO FURTHER DEPOSE AND SAY THAT I HAVE COMPLIED WITH ALL REQUIREMENTS, PROVISIONS AND CONDITIONS OF RESOLUTION 20____ BY WHICH THE TOWNSHIP BOARD OF COMMISSIONERS CONDITIONALLY WAIVED THE REQUIREMENTS OF THE TOWNSHIP SUBDIVISION AND LAND DEVELOPMENT ORDINANCE FOR THE PROJECT REFLECTED ON THIS PLAN. I AGREE THAT I SHALL EXONERATE, INDEMNIFY, PROTECT, DEFEND AND SAVE HARMLESS THE TOWNSHIP FROM ANY AND ALL CLAIMS, LAWSUITS, DAMAGES AND LIABILITIES OF EVERY KIND, CHARACTER AND MANNER WHATSOEVER PERTAINING TO, RELATING TO, RESULTING FROM, CAUSED BY OR ARISING OUT OF THE TOWNSHIP'S APPROVAL OF THE WATNER REQUEST AS EVIDENCED BY RESOLUTION 20____, ALL AS MORE FULLY OUTLINED IN RESOLUTION 20____.

ADJACENT OWNER'S STATEMENT:

THE UNDERSIGNED ACKNOWLEDGES ALL IMPROVEMENTS PROPOSED ON AND AROUND THE PROPERTY AT 2436 HUCKLEBERRY ROAD ARE LIMITED TO ADJUSTMENT OF DRIVEWAY AND GRADING TIE IN, HAVE BEEN AGREED UPON.

ADJACENT OWNER'S STATEMENT:

THE UNDERSIGNED ACKNOWLEDGES ALL IMPROVEMENTS PROPOSED ON AND AROUND THE PROPERTY AT 2436 HUCKLEBERRY ROAD ARE LIMITED TO ADJUSTMENT OF DRIVEWAY AND GRADING TIE IN, HAVE BEEN AGREED UPON.

APPROVED BY THE SOUTH WHITEHALL TOWNSHIP PLANNING COMMISSION:

COUNTY PLANNING COMMISSION STAFF PERSON _____ DATE _____
 APPROVED BY THE SOUTH WHITEHALL TOWNSHIP PLANNING COMMISSION:
 APPROVED _____ BY THE SOUTH WHITEHALL TOWNSHIP PLANNING COMMISSION.
 MONTH _____ DAY _____ YEAR _____

APPROVED BY THE BOARD OF COMMISSIONERS OF THE TOWNSHIP OF SOUTH WHITEHALL:

APPROVED _____ BY THE BOARD OF COMMISSIONERS OF THE TOWNSHIP OF SOUTH WHITEHALL.
 MONTH _____ DAY _____ YEAR _____

TOWNSHIP WAIVER ACKNOWLEDGEMENT:

BASED UPON AND EXPRESSLY IN RELIANCE ON THE FOREGOING CERTIFICATIONS OF THE OWNER AND DESIGN PROFESSIONAL, THE WITHIN PLAN IS ACCEPTED BY SOUTH WHITEHALL TOWNSHIP AS THE PLAN SATISFYING ALL REQUIREMENTS, PROVISIONS AND CONDITIONS OF RESOLUTION 20____.

PROFESSIONAL ENGINEER'S CERTIFICATION

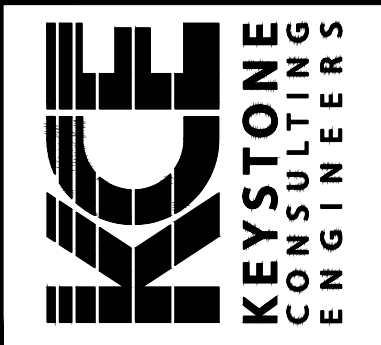
I, ALAN R. FORNWALT, P.E., A REGISTERED PROFESSIONAL ENGINEER IN THE COMMONWEALTH OF PENNSYLVANIA, DO HEREBY CERTIFY THAT THE ACCOMPANYING APPLICATION, PLANS AND SUPPORTING DOCUMENTATION ARE TRUE AND CORRECT, TO THE BEST OF MY KNOWLEDGE.

ALAN R. FORNWALT P.E. PE 070819
 KEYSTONE CONSULTING ENGINEERS, INC.
 5012 MEDICAL CENTER CIRCLE, ALLENTOWN, PA 18106

LEHIGH COUNTY RECORDER OF DEEDS:

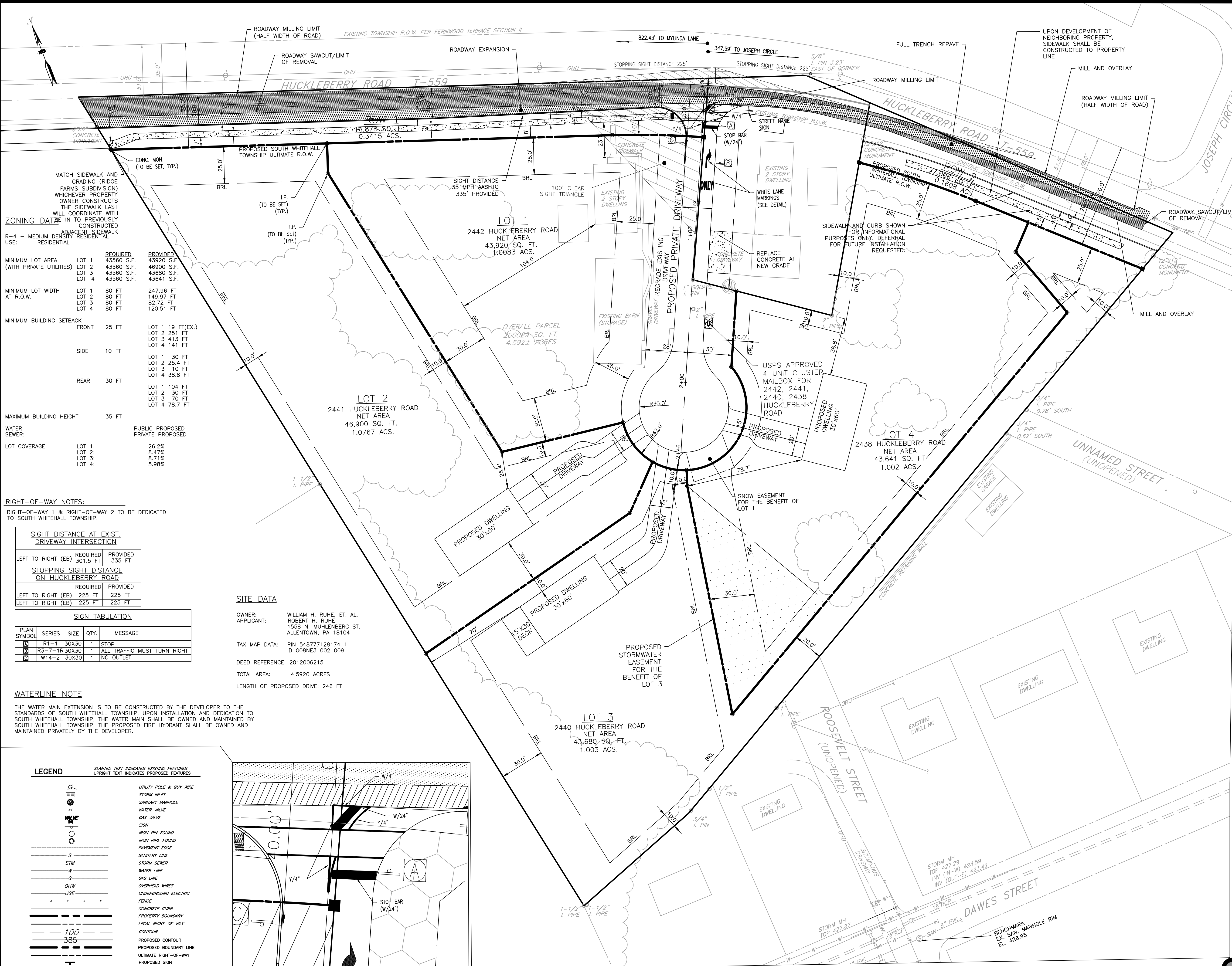
LEHIGH COUNTY OFFICIAL _____ DATE _____

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 5012 MEDICAL CENTER CIRCLE, ALLENTOWN, PA 18106 610-395-0971
 East Office: Bethlehem, West Office: Allentown, North Office: Kresgeville
 www.KCEINC.com



DESIGNED BY:	KCE
DRAWN BY:	MSN
CHECKED BY:	MFC/ARF
DATE:	MARCH 5, 2021
SCALE:	1" = 30'
JOB NUMBER:	CW-20-128
SHEET:	5 OF 23

EASEMENT PLAN
RUHE MINOR SUBDIVISION PLAN
 PRELIMINARY/FINAL PLAN
 2442 HUCKLEBERRY ROAD
 SOUTH WHITEHALL TOWNSHIP
 LEHIGH COUNTY, PENNSYLVANIA



ZONING DATA

R-4 - MEDIUM DENSITY RESIDENTIAL

	REQUIRED	PROVIDED
MINIMUM LOT AREA (WITH PRIVATE UTILITIES)	LOT 1 43560 S.F. LOT 2 43560 S.F. LOT 3 43560 S.F. LOT 4 43560 S.F.	LOT 1 43920 S.F. LOT 2 46900 S.F. LOT 3 43680 S.F. LOT 4 43641 S.F.
MINIMUM LOT WIDTH AT R.O.W.	LOT 1 80 FT LOT 2 80 FT LOT 3 80 FT LOT 4 80 FT	LOT 1 247.96 FT LOT 2 149.97 FT LOT 3 82.72 FT LOT 4 120.51 FT
MINIMUM BUILDING SETBACK	FRONT 25 FT SIDE 10 FT REAR 30 FT	LOT 1 19 FT (EX.) LOT 2 251 FT LOT 3 413 FT LOT 4 141 FT LOT 1 30 FT LOT 2 25.4 FT LOT 3 10 FT LOT 4 38.8 FT LOT 1 104 FT LOT 2 30 FT LOT 3 70 FT LOT 4 78.7 FT
MAXIMUM BUILDING HEIGHT	35 FT	
WATER: PUBLIC PROPOSED		
SEWER: PRIVATE PROPOSED		
LOT COVERAGE	LOT 1: 26.2% LOT 2: 8.47% LOT 3: 8.71% LOT 4: 5.98%	

RIGHT-OF-WAY NOTES:
RIGHT-OF-WAY 1 & RIGHT-OF-WAY 2 TO BE DEDICATED TO SOUTH WHITEHALL TOWNSHIP.

SIGHT DISTANCE AT EXIST. DRIVEWAY INTERSECTION

LEFT TO RIGHT (EB)	REQUIRED	PROVIDED
	301.5 FT	335 FT

STOPPING SIGHT DISTANCE ON HUCKLEBERRY ROAD

LEFT TO RIGHT (EB)	REQUIRED	PROVIDED
	225 FT	225 FT

SIGN TABULATION

PLAN SYMBOL	SERIES	SIZE	QTY.	MESSAGE
(A)	R1-1	30X30	1	STOP
(B)	R3-7-1R	30X30	1	ALL TRAFFIC MUST TURN RIGHT
(C)	W14-2	30X30	1	NO OUTLET

WATERLINE NOTE
THE WATER MAIN EXTENSION IS TO BE CONSTRUCTED BY THE DEVELOPER TO THE STANDARDS OF SOUTH WHITEHALL TOWNSHIP. UPON INSTALLATION AND DEDICATION TO SOUTH WHITEHALL TOWNSHIP, THE WATER MAIN SHALL BE OWNED AND MAINTAINED BY SOUTH WHITEHALL TOWNSHIP. THE PROPOSED FIRE HYDRANT SHALL BE OWNED AND MAINTAINED PRIVATELY BY THE DEVELOPER.

LEGEND

SLANTED TEXT INDICATES EXISTING FEATURES
UPRIGHT TEXT INDICATES PROPOSED FEATURES

(Symbol)	UTILITY POLE & GUY WIRE
(Symbol)	STORM INLET
(Symbol)	SANITARY MANHOLE
(Symbol)	WATER VALVE
(Symbol)	GAS VALVE
(Symbol)	SIGN
(Symbol)	IRON PIN FOUND
(Symbol)	IRON PIPE FOUND
(Symbol)	PAVEMENT EDGE
(Symbol)	SANITARY LINE
(Symbol)	STORM SEWER
(Symbol)	WATER LINE
(Symbol)	GAS LINE
(Symbol)	OVERHEAD WIRES
(Symbol)	UNDERGROUND ELECTRIC
(Symbol)	FENCE
(Symbol)	CONCRETE CURB
(Symbol)	PROPERTY BOUNDARY
(Symbol)	LEGAL RIGHT-OF-WAY
(Symbol)	CONTOUR
(Symbol)	PROPOSED CONTOUR
(Symbol)	PROPOSED BOUNDARY LINE
(Symbol)	ULTIMATE RIGHT-OF-WAY
(Symbol)	PROPOSED SIGN
(Symbol)	PROPOSED HYDRANT
(Symbol)	PROPOSED WATER VALVE
(Symbol)	PROPOSED WATER LINE
(Symbol)	PROPOSED SANITARY MANHOLE
(Symbol)	PROPOSED SANITARY LINE
(Symbol)	PROPOSED STORMWATER LINE

SITE DATA

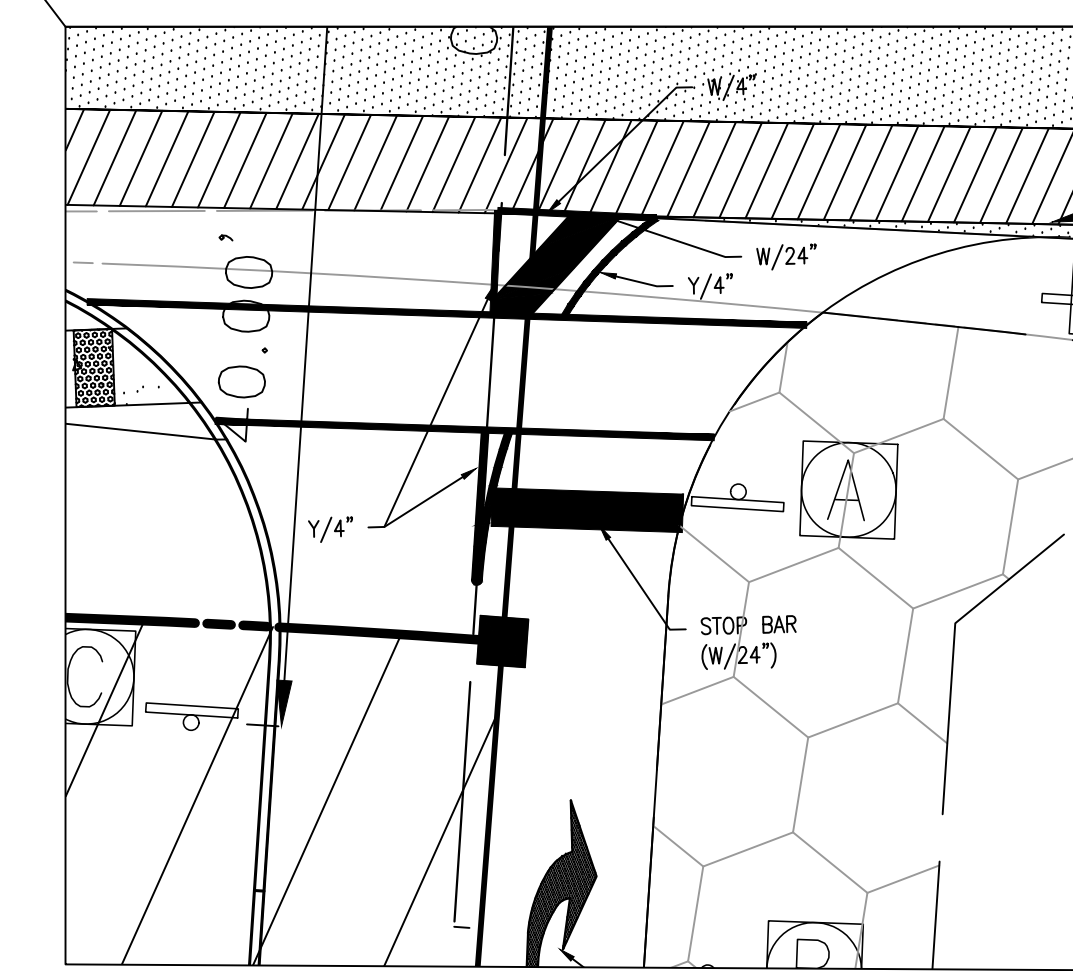
OWNER: WILLIAM H. RUHE, ET. AL.
APPLICANT: ROBERT H. RUHE
1558 N. MUHLENBERG ST.
ALLENTOWN, PA 18104

TAX MAP DATA: PIN 54877128174 1
ID G08NE3 002 009

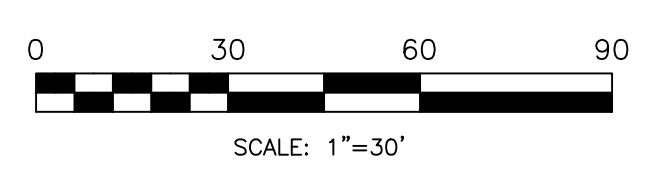
DEED REFERENCE: 2012006215

TOTAL AREA: 4.5920 ACRES

LENGTH OF PROPOSED DRIVE: 246 FT



UTILITY NOTES:
THE APPLICANT IS RESPONSIBLE FOR JOINING THE PA ONE CALL SYSTEM AND IS RESPONSIBLE FOR THE MARKING OF ALL UNDERGROUND UTILITIES PRIOR TO THE UTILITIES BEING FORMALLY ACCEPTED BY AND DEDICATED TO THE TOWNSHIP.



OWNER'S STATEMENT:
THE UNDERSIGNED IS THE OWNER, EQUITABLE OWNER, OR HAS AN OPTION OR CONDITIONAL CONTRACT OF SALE ON THE LAND PROPOSED TO BE SUBDIVIDED OR DEVELOPED AND HAS NO LITIGATION OR LIENS EXIST OR ARE PENDING ON THE SITE.

OWNER: WILLIAM H. RUHE

OWNER'S CERTIFICATION:
I BEING DULY SWORN ACCORDING TO LAW DEPOSE AND SAY THAT I AM THE SOLE OWNER OF THIS PROPERTY, IN PEACEFUL POSSESSION OF THE SAME, AND THAT THERE ARE NO SUITS PENDING AFFECTING THE TITLE THEREOF. I DO FURTHER DEPOSE AND SAY THAT I HAVE COMPLIED WITH ALL REQUIREMENTS, PROVISIONS AND CONDITIONS OF RESOLUTION 20... BY WHICH THE TOWNSHIP BOARD OF COMMISSIONERS CONDITIONALLY WAIVED THE REQUIREMENTS OF THE TOWNSHIP SUBDIVISION AND LAND DEVELOPMENT ORDINANCE FOR THE PROJECT REFLECTED ON THIS PLAN. I AGREE THAT I SHALL EXONERATE, INDEMNIFY, PROTECT, DEFEND AND SAVE HARMLESS THE TOWNSHIP FROM ANY AND ALL CLAIMS, LAWSUITS, DAMAGES AND LIABILITIES OF EVERY KIND, CHARACTER AND MANNER WHATSOEVER PERTAINING TO, RELATING TO, RESULTING FROM, CAUSED BY OR ARISING OUT OF THE TOWNSHIP'S APPROVAL OF THE WAIVER REQUEST AS EVIDENCED BY RESOLUTION 20... ALL AS MORE FULLY OUTLINED IN RESOLUTION 20... OWNER:

ADJACENT OWNER'S STATEMENT:
THE UNDERSIGNED ACKNOWLEDGES ALL IMPROVEMENTS PROPOSED ON AND AROUND THE PROPERTY AT 2438 HUCKLEBERRY ROAD ARE LIMITED TO ADJUSTMENT OF DRIVEWAY AND GRADING-TIE IN, HAVE BEEN AGREED UPON.

JOHN P. LUTZ
ADJACENT PROPERTY OWNER

REVIEWED BY THE LEHIGH VALLEY PLANNING COMMISSION:

COUNTY PLANNING COMMISSION STAFF PERSON: _____ DATE: _____

APPROVED BY THE SOUTH WHITEHALL TOWNSHIP PLANNING COMMISSION:

APPROVED: _____ BY THE SOUTH WHITEHALL TOWNSHIP PLANNING COMMISSION.
MONTH: _____ DAY: _____ YEAR: _____

TOWNSHIP PLANNING COMMISSION:

CHAIRMAN: _____

SECRETARY: _____

APPROVED BY THE BOARD OF COMMISSIONERS OF THE TOWNSHIP OF SOUTH WHITEHALL:

APPROVED: _____ BY THE BOARD OF COMMISSIONERS OF THE TOWNSHIP OF SOUTH WHITEHALL.
MONTH: _____ DAY: _____ YEAR: _____

PRESIDENT: _____ SECRETARY: _____

TOWNSHIP WAIVER ACKNOWLEDGEMENT:
BASED UPON AND EXPRESSLY IN RELIANCE ON THE FOREGOING CERTIFICATIONS OF THE OWNER AND DESIGN PROFESSIONAL, THE WITHIN PLAN IS ACCEPTED BY SOUTH WHITEHALL TOWNSHIP AS THE PLAN SATISFYING ALL REQUIREMENTS, PROVISIONS AND CONDITIONS OF RESOLUTION 20... PRESIDENT: _____ SECRETARY: _____

PROFESSIONAL ENGINEER'S CERTIFICATION

I, ALAN R. FORNWALT, P.E., A REGISTERED PROFESSIONAL ENGINEER IN THE COMMONWEALTH OF PENNSYLVANIA, DO HEREBY CERTIFY THAT THE ACCOMPANYING APPLICATION, PLANS AND SUPPORTING DOCUMENTATION ARE TRUE AND CORRECT, TO THE BEST OF MY KNOWLEDGE.

ALAN R. FORNWALT P.E. PE 070819
KEYSTONE CONSULTING ENGINEERS, INC.
5012 MEDICAL CENTER CIRCLE, ALLENTOWN, PA 18106

LEHIGH COUNTY RECORDER OF DEEDS:

LEHIGH COUNTY OFFICIAL: _____ DATE: _____

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RECORD PLAN

RUHE MINOR SUBDIVISION PRELIMINARY/FINAL PLAN

2442 HUCKLEBERRY ROAD

SOUTH WHITEHALL TOWNSHIP
LEHIGH COUNTY, PENNSYLVANIA

DESIGNED BY:	DATE:	REVISIONS:
KCE	06/16/2021	BY: MSN DATE: 12/16/2021
		BY: MFC/ARF DATE: 09/20/2023
		BY: IMK DATE: 11/17/2023

SCALE: 1" = 30'

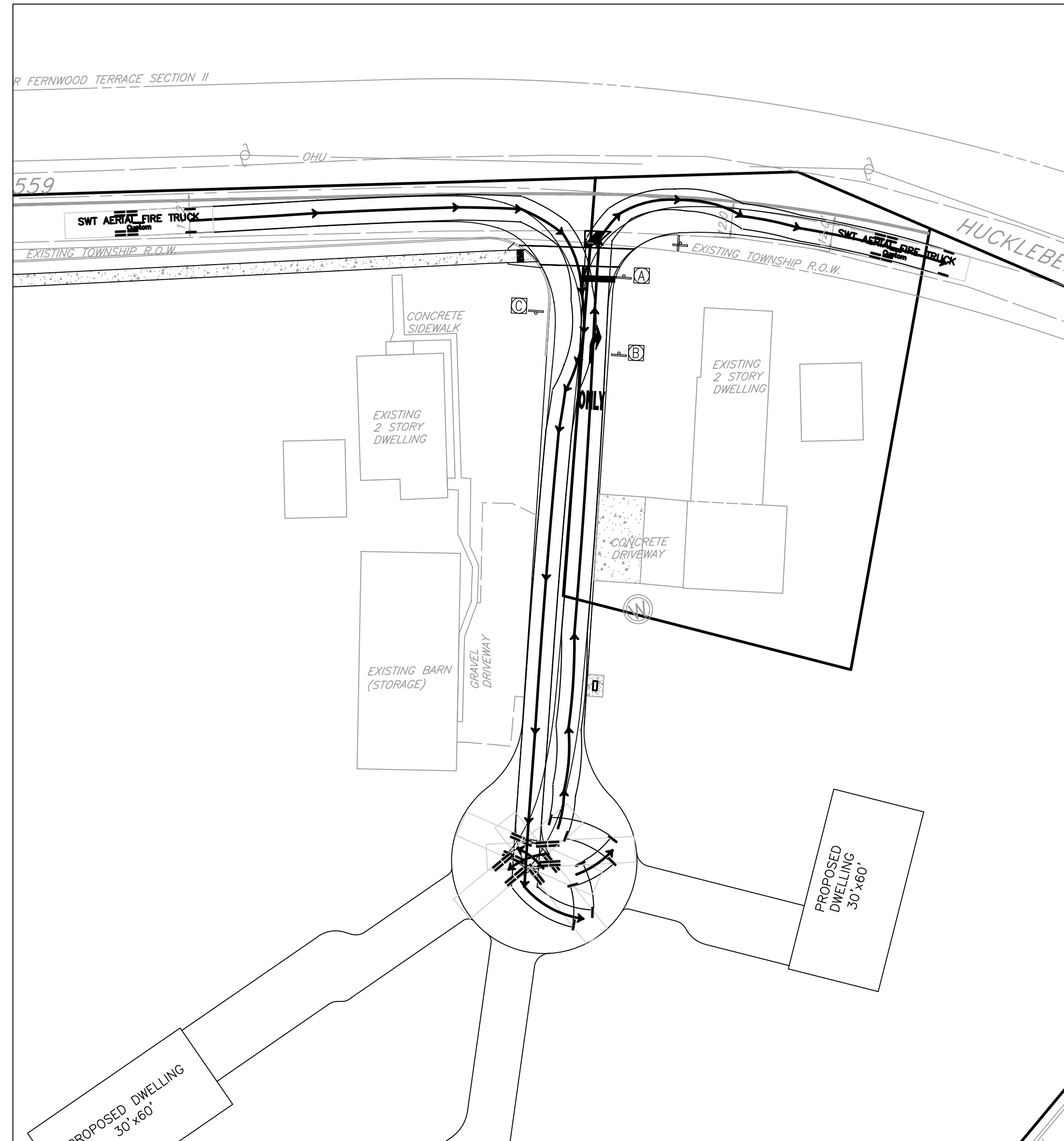
JOB NUMBER: CW-20-128

SHEET: 6 OF 23



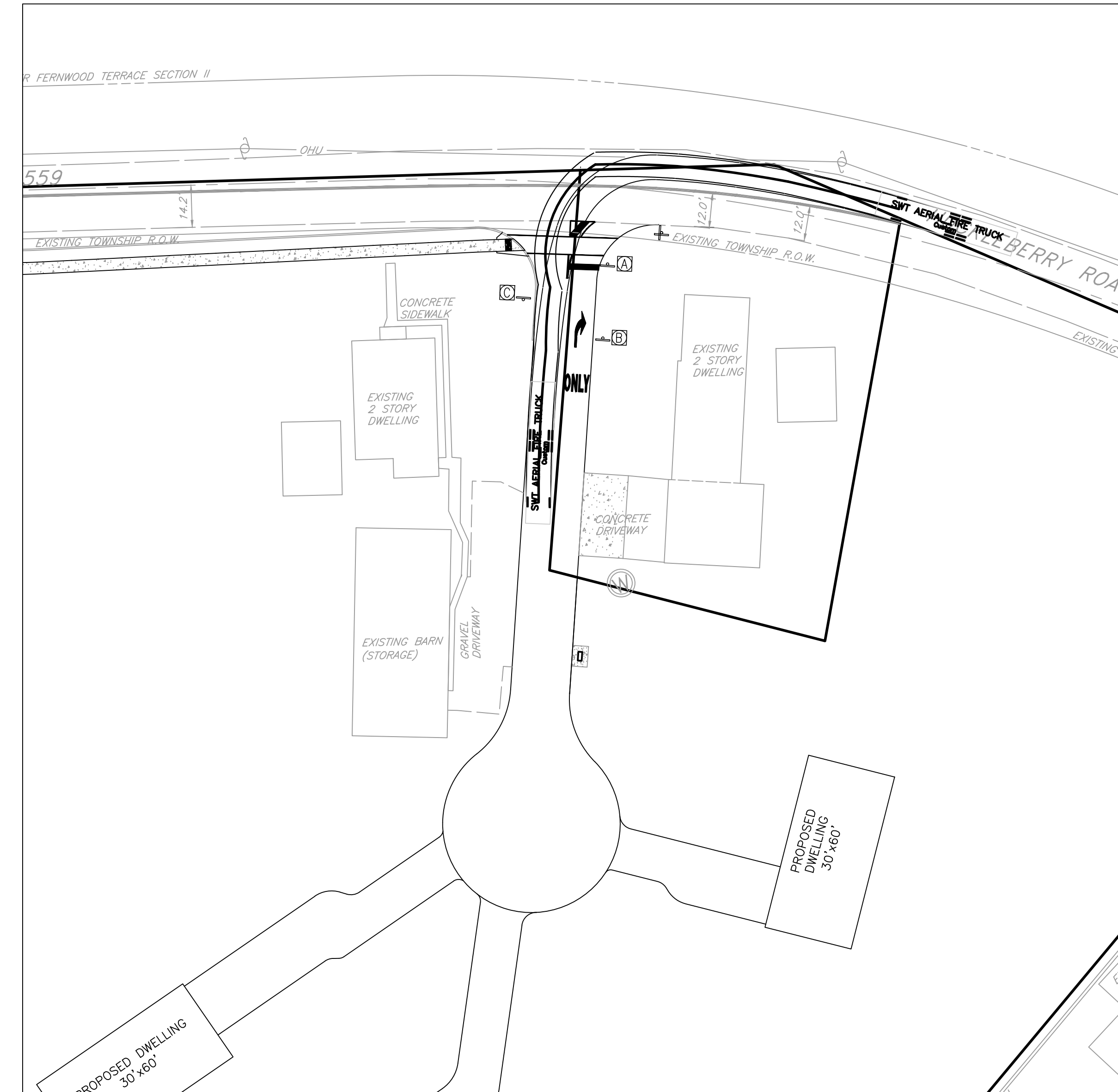
DIAL 8-1-1 OR 1-800-242-1776 NOT LESS THAN 3 BUSINESS DAYS NOR MORE THAN 10 BUSINESS DAYS PRIOR TO THE START OF EXCAVATION.

PENNSYLVANIA ONE CALL SYSTEM SERIAL NUMBER & DATE OF CALL
217420210222-000 FEBRUARY 22, 2021



SWT FIRE TRUCK RIGHT IN-RIGHT OUT TURNING TEMPLATE

1"=30'



SWT FIRE TRUCK WESTBOUND LEFT TURN TURNING TEMPLATE

1"=30'

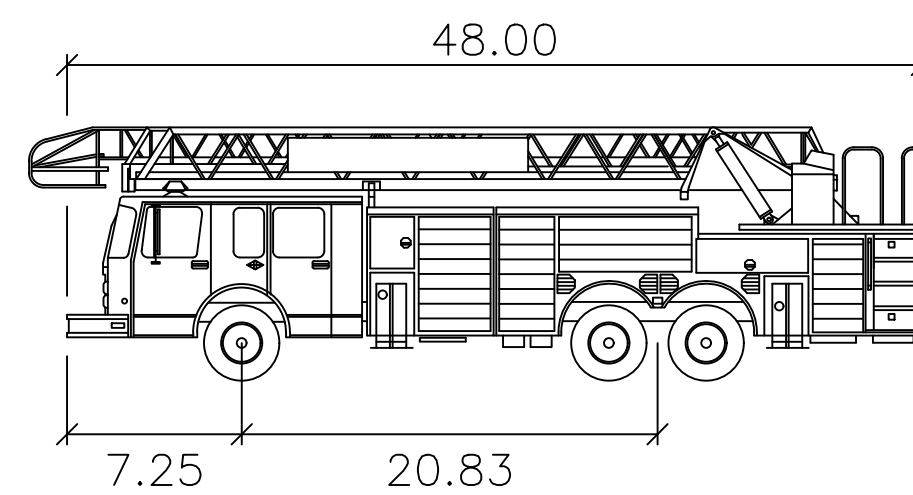
LEGEND

SLANTED TEXT INDICATES EXISTING FEATURES UPRIGHT TEXT INDICATES PROPOSED FEATURES	
	UTILITY POLE & GUY WIRE
	STORM INLET
	SANITARY MANHOLE
	WATER VALVE
	GAS VALVE
	SIGN
	IRON PIN FOUND
	IRON PIPE FOUND
	PAVEMENT EDGE
	SANITARY LINE
	STORM SEWER
	WATER LINE
	GAS LINE
	OVERHEAD WIRES
	UNDERGROUND ELECTRIC FENCE
	CONCRETE CURB
	PROPERTY BOUNDARY
	LEGAL RIGHT-OF-WAY
	CONTOUR
	PROPOSED CONTOUR
	PROPOSED BOUNDARY LINE
	ULTIMATE RIGHT-OF-WAY
	PROPOSED SIGN
	PROPOSED HYDRANT
	PROPOSED WATER VALVE
	PROPOSED WATER LINE
	PROPOSED SANITARY MANHOLE
	PROPOSED SANITARY LINE
	PROPOSED STORMWATER LINE



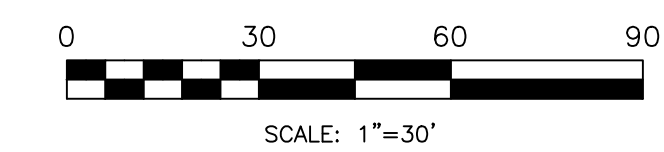
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PENNSYLVANIA ONE CALL SYSTEM NUMBER & DATE OF CALL
217420210222-000 FEBRUARY 22, 2021



SWT Aerial Fire Truck

	feet
Width	: 8.33
Track	: 8.33
Lock to Lock Time	: 6.0
Steering Angle	: 44.0



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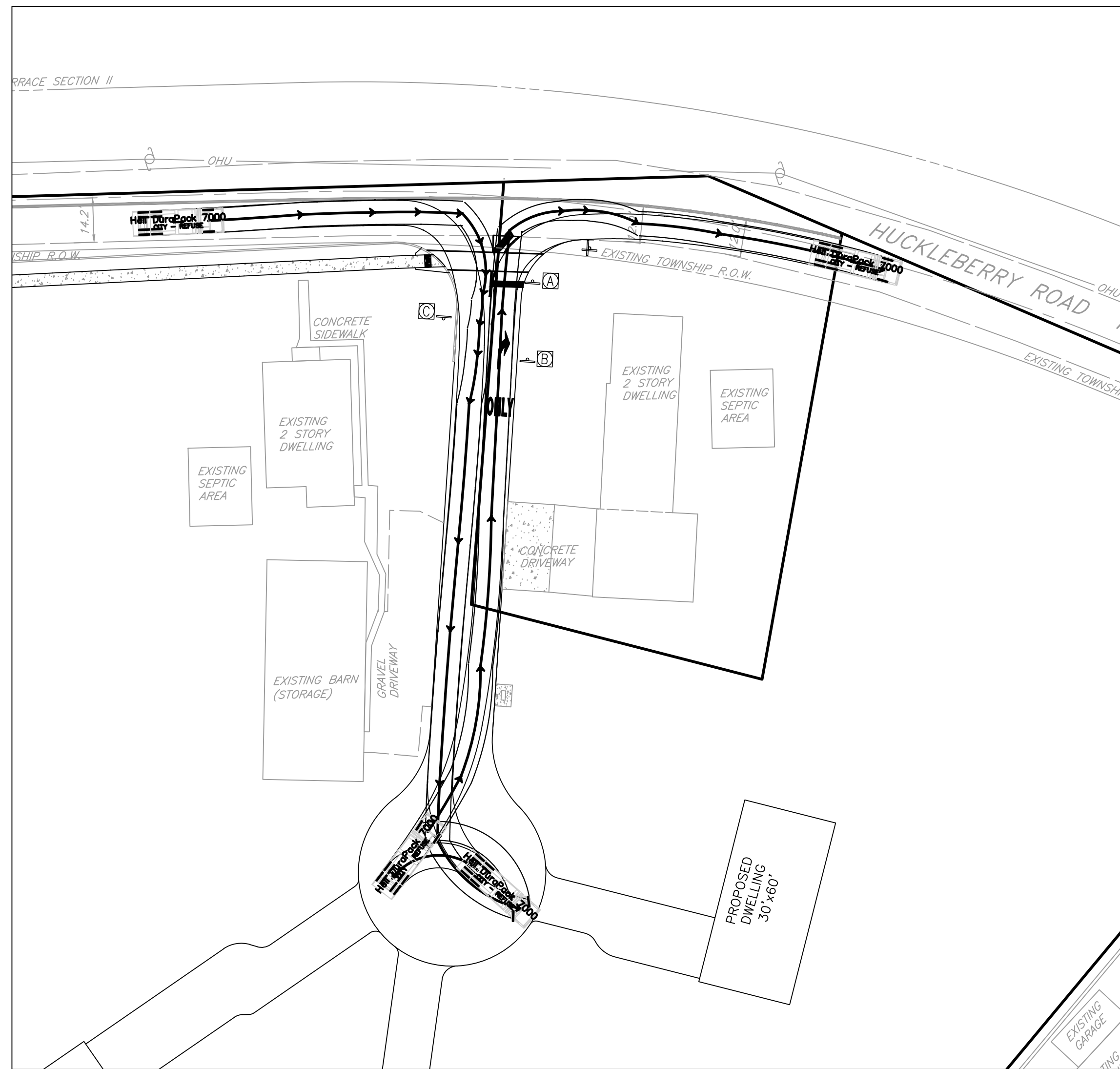


FIRE TRUCK TURN PLAN

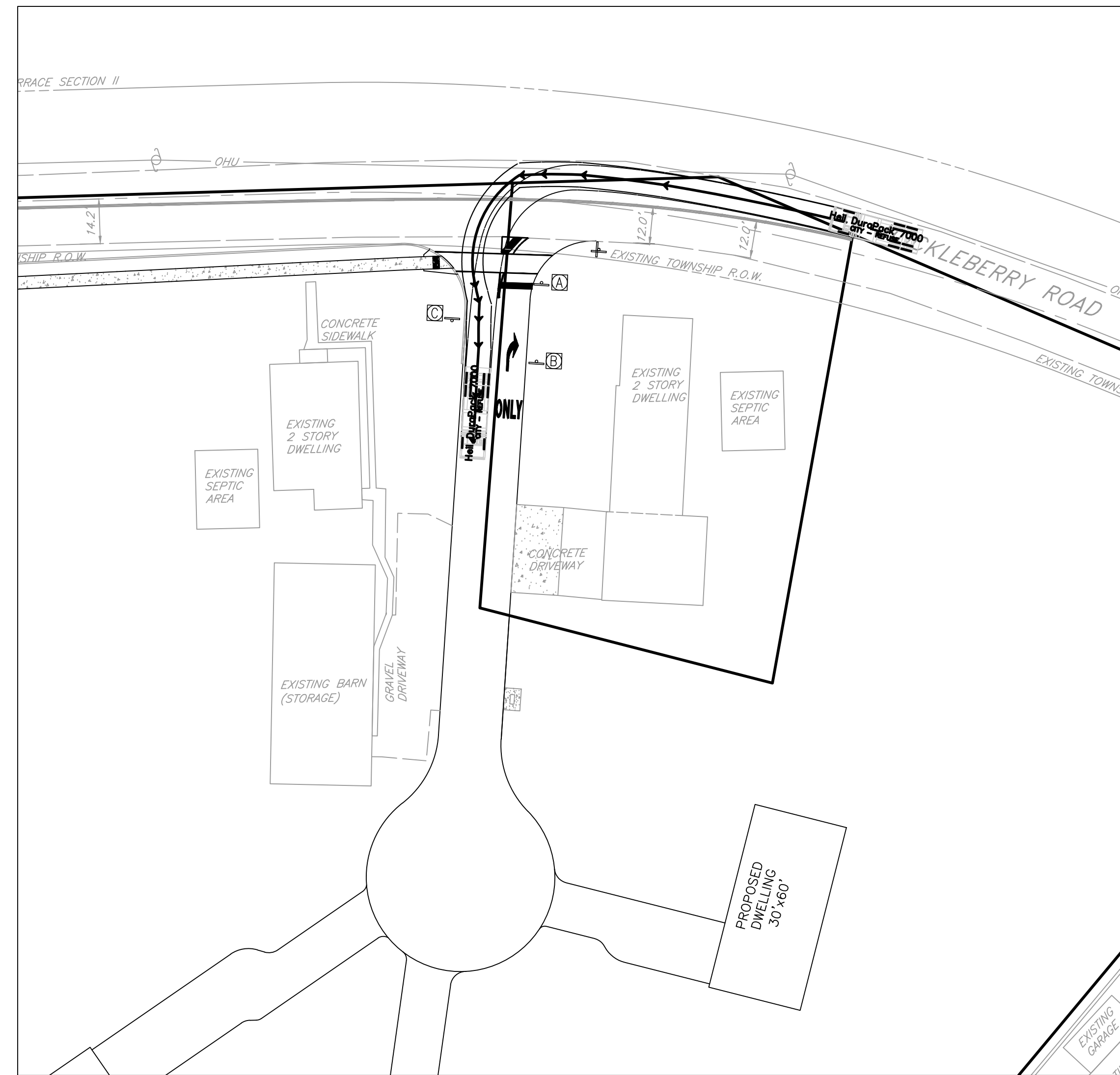
RUHE MINOR SUBDIVISION
PRELIMINARY/FINAL PLAN
2442 HUCKLEBERRY ROAD
SOUTH WHITEHALL TOWNSHIP
LEHIGH COUNTY, PENNSYLVANIA

DESIGNED BY:	KCE
DRAWN BY:	MSN
CHECKED BY:	MFC/ARF
DATE:	MARCH 5, 2021
SCALE:	1" = 30'
JOB NUMBER:	CW-20-128
SHEET:	7 OF 23

REVISIONS	DATE
BY	DATE
MSN	06/16/2021
MSN	12/16/2021
IMK	09/20/2023
IMK	11/17/2023



GARBAGE TRUCK RIGHT IN-RIGHT OUT TURNING TEMPLATE
1"=30'

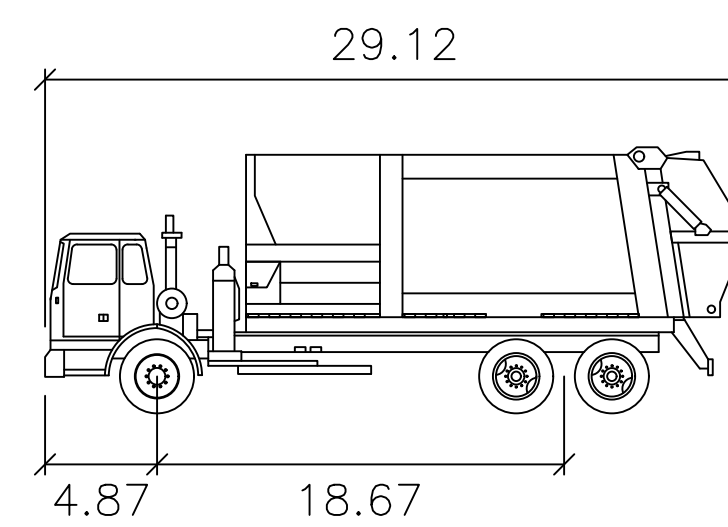


GARBAGE TRUCK WESTBOUND LEFT TURN TURNING TEMPLATE
1"=30'

LEGEND

SLANTED TEXT INDICATES EXISTING FEATURES
UPRIGHT TEXT INDICATES PROPOSED FEATURES

	UTILITY POLE & GUY WIRE
	STORM INLET
	SANITARY MANHOLE
	WATER VALVE
	GAS VALVE
	SIGN
	IRON PIN FOUND
	IRON PIPE FOUND
	PAVEMENT EDGE
	SANITARY LINE
	STORM SEWER
	WATER LINE
	GAS LINE
	OVERHEAD WIRES
	UNDERGROUND ELECTRIC FENCE
	CONCRETE CURB
	PROPERTY BOUNDARY
	LEGAL RIGHT-OF-WAY
	CONTOUR
	PROPOSED CONTOUR
	PROPOSED BOUNDARY LINE
	ULTIMATE RIGHT-OF-WAY
	PROPOSED SIGN
	PROPOSED HYDRANT
	PROPOSED WATER VALVE
	PROPOSED WATER LINE
	PROPOSED SANITARY MANHOLE
	PROPOSED SANITARY LINE
	PROPOSED STORMWATER LINE



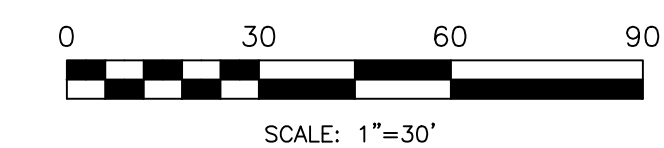
Heil DuraPack 7000
feet

Width : 8.00
Track : 8.00
Lock to Lock Time : 6.0
Steering Angle : 45.0



DIAL 8-1-1 OR 1-800-242-1776 NOT LESS THAN 3 BUSINESS DAYS NOR MORE THAN 10 BUSINESS DAYS PRIOR TO THE START OF EXCAVATION.

PENNSYLVANIA ONE CALL SYSTEM SERIAL NUMBER & DATE OF CALL
217420210222-000 FEBRUARY 22, 2021



KEYSTONE CONSULTING ENGINEERS, INC.

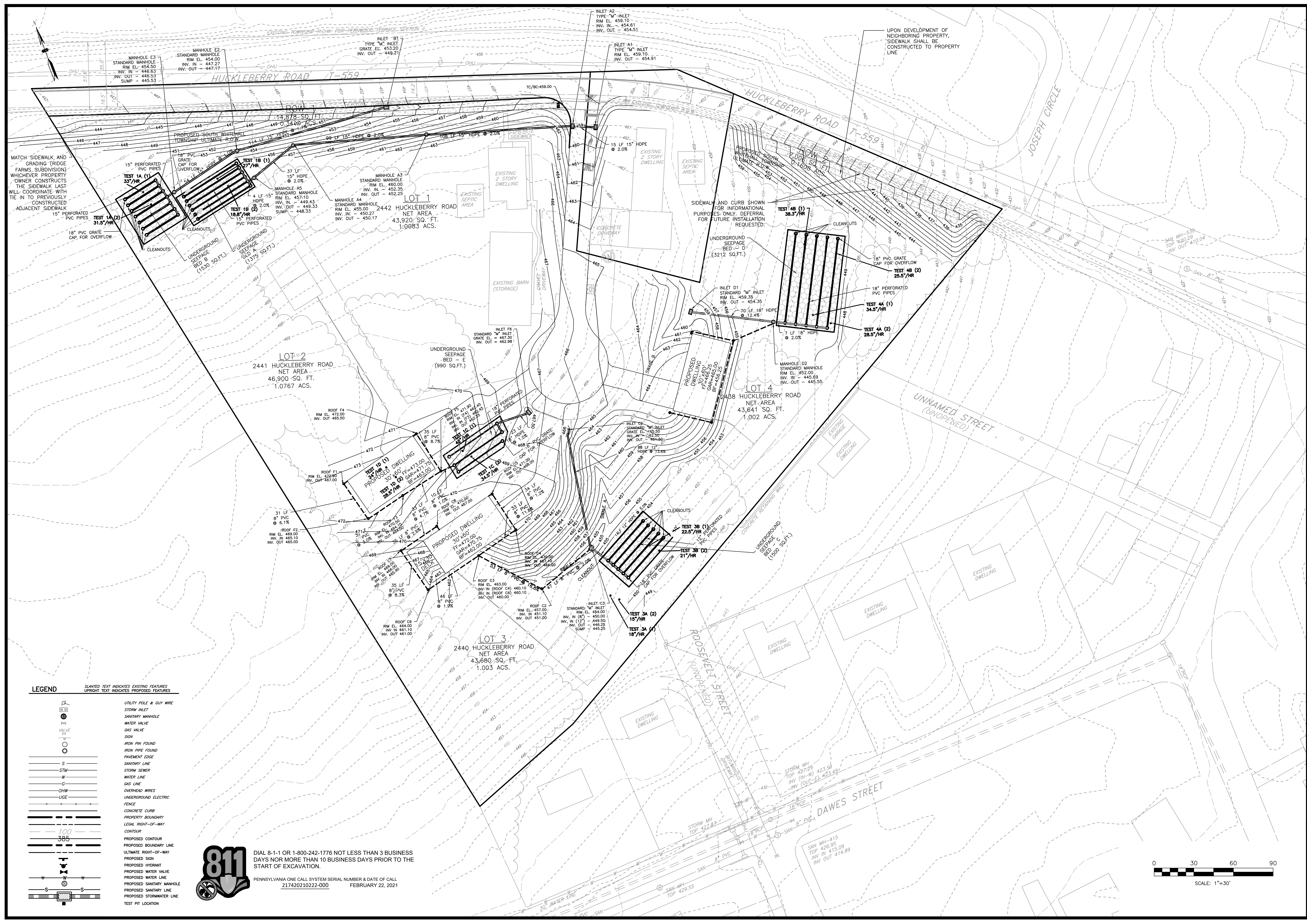
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GARBAGE TRUCK TURN PLAN

RUHE MINOR SUBDIVISION
PRELIMINARY/FINAL PLAN
2442 HUCKLEBERRY ROAD
SOUTH WHITEHALL TOWNSHIP
LEHIGH COUNTY, PENNSYLVANIA

DESIGNED BY: KCE	REVISIONS	DATE
	BY	DATE
DRAWN BY: MSN	MSN	06/16/2021
CHECKED BY: MFC/ARF	MSN	12/16/2021
DATE: MARCH 5, 2021	IMK	09/20/2023
SCALE: 1" = 30'	IMK	11/17/2023
JOB NUMBER: CW-20-128		
SHEET: 8 OF 23		



MATCH SIDEWALK AND GRADING (RIDGE FARMS SUBDIVISION) WHICHEVER PROPERTY OWNER CONSTRUCTS THE SIDEWALK LAST WILL COORDINATE WITH THE SIDEWALK CONSTRUCTED ADJACENT SIDEWALK

UPON DEVELOPMENT OF NEIGHBORING PROPERTY, SIDEWALK SHALL BE CONSTRUCTED TO PROPERTY LINE

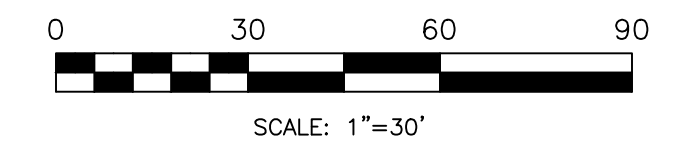
LEGEND

SLANTED TEXT INDICATES EXISTING FEATURES
UPRIGHT TEXT INDICATES PROPOSED FEATURES

- UTILITY POLE & GUY WIRE
- STORM INLET
- SANITARY MANHOLE
- WATER VALVE
- GAS VALVE
- SIGN
- IRON PIN FOUND
- IRON PIPE FOUND
- PAVEMENT EDGE
- SANITARY LINE
- STORM SEWER
- WATER LINE
- GAS LINE
- OVERHEAD WIRES
- UNDERGROUND ELECTRIC
- FENCE
- CONCRETE CURB
- PROPERTY BOUNDARY
- LEGAL RIGHT-OF-WAY
- CONTOUR
- PROPOSED CONTOUR
- PROPOSED BOUNDARY LINE
- ULTIMATE RIGHT-OF-WAY
- PROPOSED SIGN
- PROPOSED HYDRANT
- PROPOSED WATER VALVE
- PROPOSED WATER LINE
- PROPOSED SANITARY MANHOLE
- PROPOSED SANITARY LINE
- PROPOSED STORMWATER LINE
- TEST PIT LOCATION

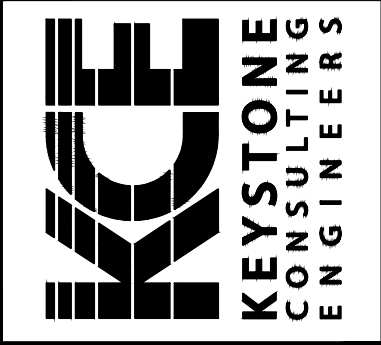
811 DIAL 8-1-1 OR 1-800-242-1776 NOT LESS THAN 3 BUSINESS DAYS NOR MORE THAN 10 BUSINESS DAYS PRIOR TO THE START OF EXCAVATION.

PENNSYLVANIA ONE CALL SYSTEM SERIAL NUMBER & DATE OF CALL
217420210222-000 FEBRUARY 22, 2021



KEYSTONE CONSULTING ENGINEERS, INC.
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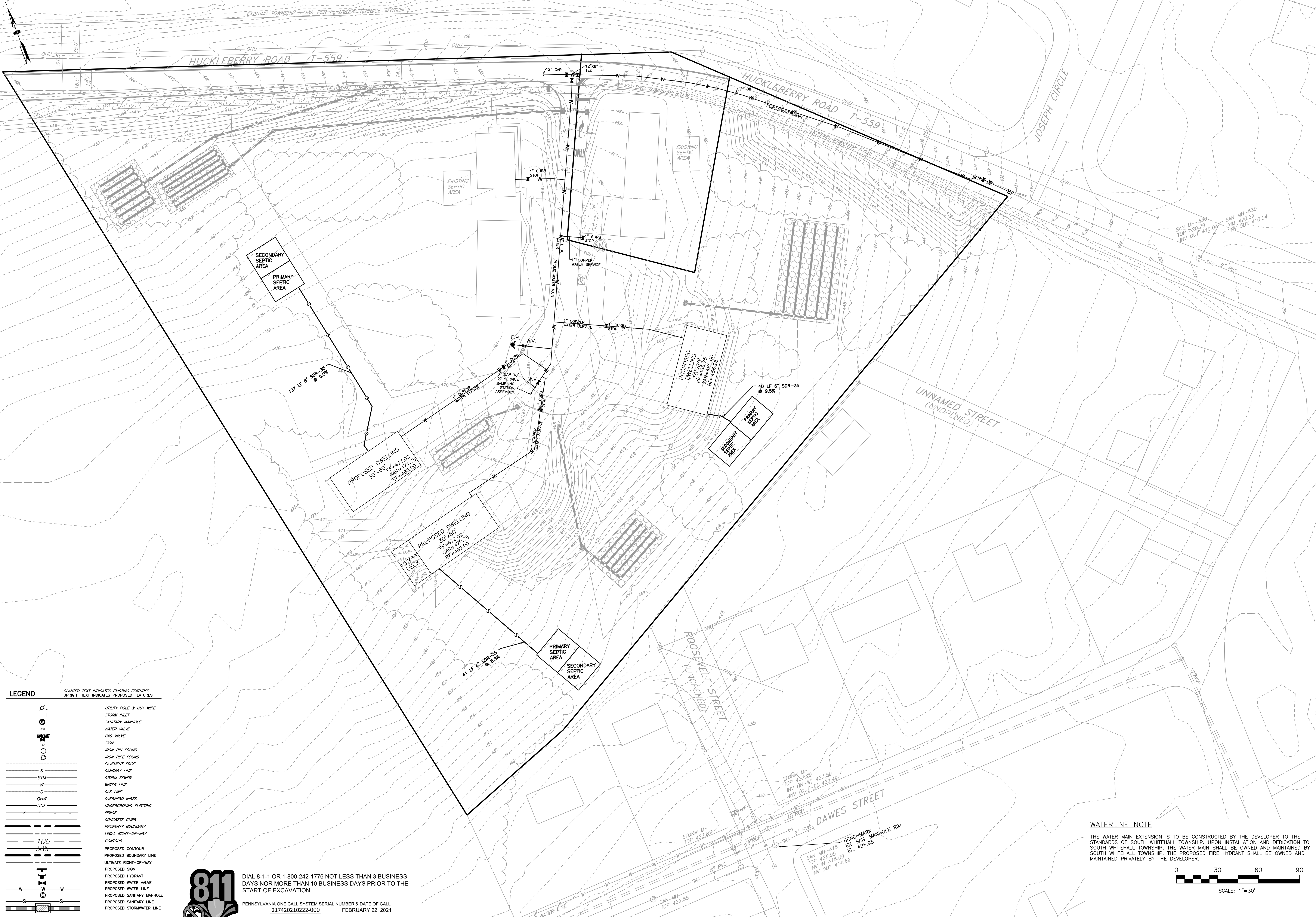
5012 MEDICAL CENTER CIRCLE, ALLENTOWN, PA 18106 610-395-0971
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GRADING & DRAINAGE PLAN
RUHE MINOR SUBDIVISION
PRELIMINARY/FINAL PLAN
2442 HUCKLEBERRY ROAD
SOUTH WHITEHALL TOWNSHIP
LEHIGH COUNTY, PENNSYLVANIA

DESIGNED BY:	DATE	BY	DATE
KCE	06/16/2021	MSN	06/16/2021
MSN	12/16/2021	MSN	12/16/2021
MFC/ARF	March 05, 2021	IMK	09/20/2023
IMK	11/17/2023	IMK	11/17/2023

JOB NUMBER: CW-20-128
 SHEET: 9 OF 23



LEGEND

SLANTED TEXT INDICATES EXISTING FEATURES
UPRIGHT TEXT INDICATES PROPOSED FEATURES

	UTILITY POLE & GUY WIRE
	STORM INLET
	SANITARY MANHOLE
	WATER VALVE
	GAS VALVE
	SIGN
	IRON PIN FOUND
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	PROPOSED SIGN
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PENNSYLVANIA ONE CALL SYSTEM SERIAL NUMBER & DATE OF CALL
217420210222-000 FEBRUARY 22, 2021

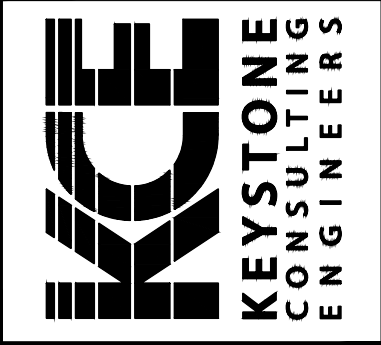
WATERLINE NOTE

THE WATER MAIN EXTENSION IS TO BE CONSTRUCTED BY THE DEVELOPER TO THE STANDARDS OF SOUTH WHITEHALL TOWNSHIP. UPON INSTALLATION AND DEDICATION TO SOUTH WHITEHALL TOWNSHIP, THE WATER MAIN SHALL BE OWNED AND MAINTAINED BY SOUTH WHITEHALL TOWNSHIP. THE PROPOSED FIRE HYDRANT SHALL BE OWNED AND MAINTAINED PRIVATELY BY THE DEVELOPER.

0 30 60 90
SCALE: 1"=30'

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UTILITY PLAN	
RUHE MINOR SUBDIVISION	
PRELIMINARY/FINAL PLAN	
2442 HUCKLEBERRY ROAD	
SOUTH WHITEHALL TOWNSHIP	
LEHIGH COUNTY, PENNSYLVANIA	
DESIGNED BY:	KCE
DRAWN BY:	MSN
CHECKED BY:	MFC/ARF
DATE:	March 05, 2021
SCALE:	1" = 30'
JOB NUMBER:	CW-20-128
SHEET:	10 OF 23

REVISIONS	BY	DATE
	MSN	06/16/2021
	MSN	12/16/2021
	IMK	09/20/2023
	IMK	11/17/2023



MATCH SIDEWALK AND GRADING (RIDGE FARMS SUBDIVISION) WHICHEVER PROPERTY OWNER CONSTRUCTS THE SIDEWALK LAST WILL COORDINATE WITH TIE IN TO PREVIOUSLY CONSTRUCTED ADJACENT SIDEWALK

SIGHT DISTANCE 35 MPH AASHTO 335' PROVIDED

100' CLEAR SIGHT TRIANGLE

UPON DEVELOPMENT OF NEIGHBORING PROPERTY, SIDEWALK SHALL BE CONSTRUCTED TO PROPERTY LINE

SIDEWALK AND CURB SHOWN FOR INFORMATIONAL PURPOSES ONLY. DEFERRAL FOR FUTURE INSTALLATION REQUESTED.

LEGEND

SLANTED TEXT INDICATES EXISTING FEATURES
UPRIGHT TEXT INDICATES PROPOSED FEATURES

	UTILITY POLE & GUY WIRE
	STORM INLET
	SANITARY MANHOLE
	WATER VALVE
	GAS VALVE
	SIGN
	IRON PIN FOUND
	IRON PIPE FOUND
	PAVEMENT EDGE
	SANITARY LINE
	STORM SEWER
	WATER LINE
	GAS LINE
	OVERHEAD WIRES
	UNDERGROUND ELECTRIC
	FENCE
	CONCRETE CURB
	PROPERTY BOUNDARY
	LEGAL RIGHT-OF-WAY
	CONTOUR
	PROPOSED BOUNDARY LINE
	ULTIMATE RIGHT-OF-WAY
	PROPOSED SIGN
	PROPOSED HYDRANT
	PROPOSED WATER VALVE
	PROPOSED WATER LINE
	PROPOSED SANITARY MANHOLE
	PROPOSED SANITARY LINE
	PROPOSED STORMWATER LINE
	TEST PIT LOCATION

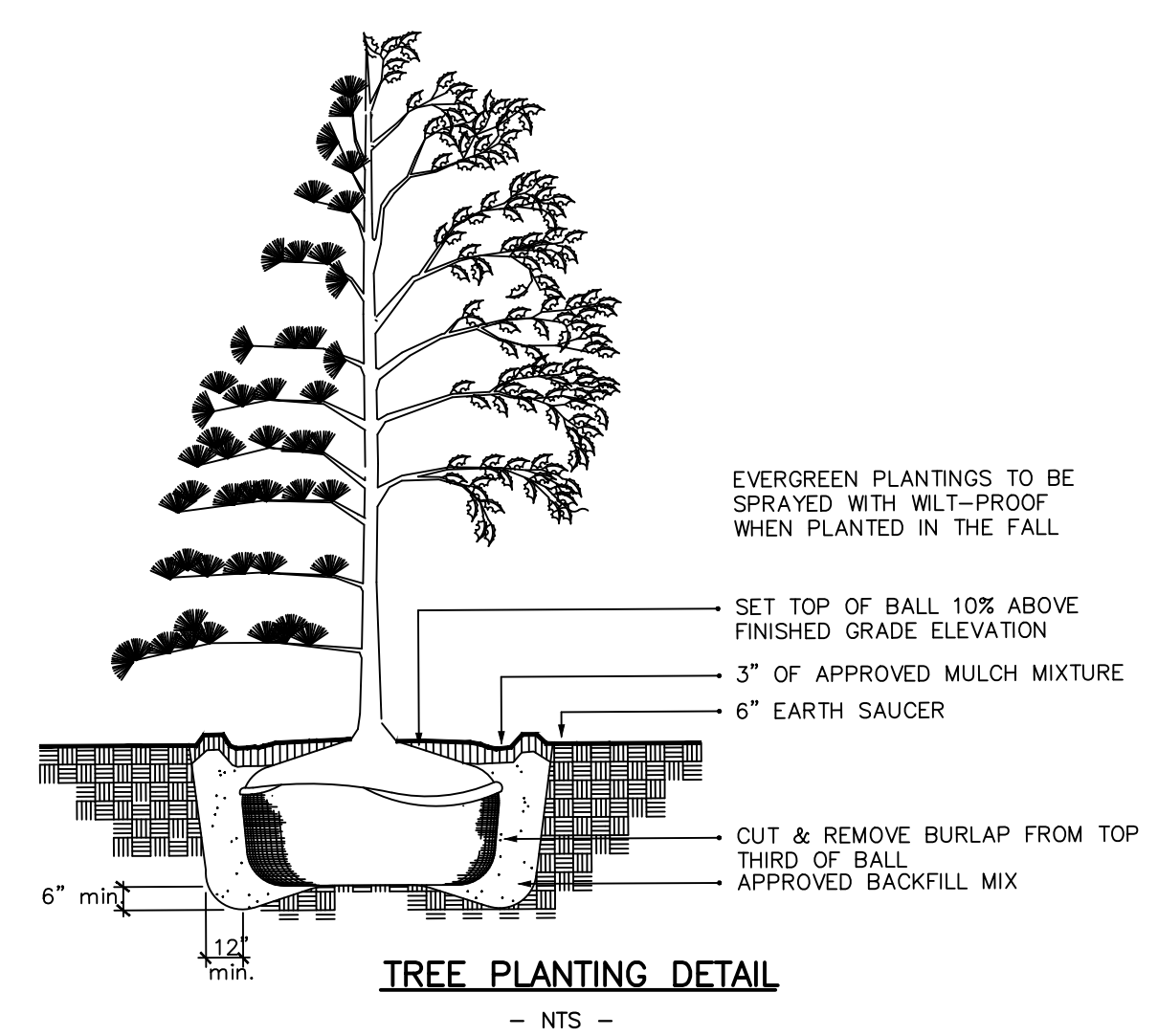
LANDSCAPE PLAN LEGEND

DECIDUOUS TREE



DIAL 8-1-1 OR 1-800-242-1776 NOT LESS THAN 3 BUSINESS DAYS NOR MORE THAN 10 BUSINESS DAYS PRIOR TO THE START OF EXCAVATION.

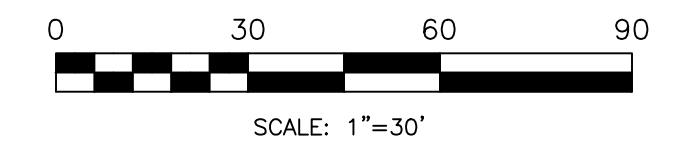
PENNSYLVANIA ONE CALL SYSTEM SERIAL NUMBER & DATE OF CALL
217420210222-000 FEBRUARY 22, 2021



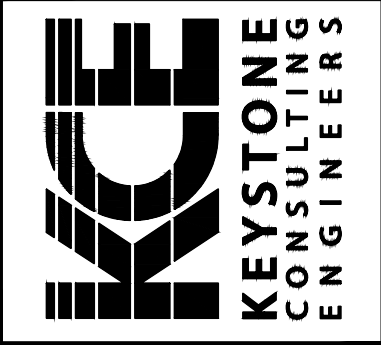
PLANT SCHEDULE

SYMBOL	QUANTITY	BOTANICAL NAME	COMMON NAME	FAMILY	SIZE	CONDITION	COMMENTS
STREET TREES							
QA	8	QUERCUS ALBA	WHITE OAK	FAGACEAE	2" - 2 1/2" CAL.	B&B	
PA	5	PLATANUS x ACERIFOLIA 'BLOODGOOD'	LONDON PLANETREE	PLATANACEAE	2" - 2 1/2" CAL.	B&B	
ZS	6	ZELKOVA SERRATA 'GREEN VASE'	JAPANESE ZELKOVA	ULMACEAE	2" - 2 1/2" CAL.	B&B	

NOTES:
 1. PLANTS SHALL BE IN ACCORDANCE WITH THE AMERICAN STANDARDS FOR NURSERY STOCK, LATEST EDITION.
 2. WHERE DISCREPANCIES OCCUR BETWEEN THE PLAN AND THE PLANT SCHEDULE, THE PLAN SHALL PREVAIL.
 3. INSTALLATION OF SHADE TREES SHALL BE DEFERRED UNTIL AFTER THE INSTALLATION OF PROPOSED SIDEWALKS.

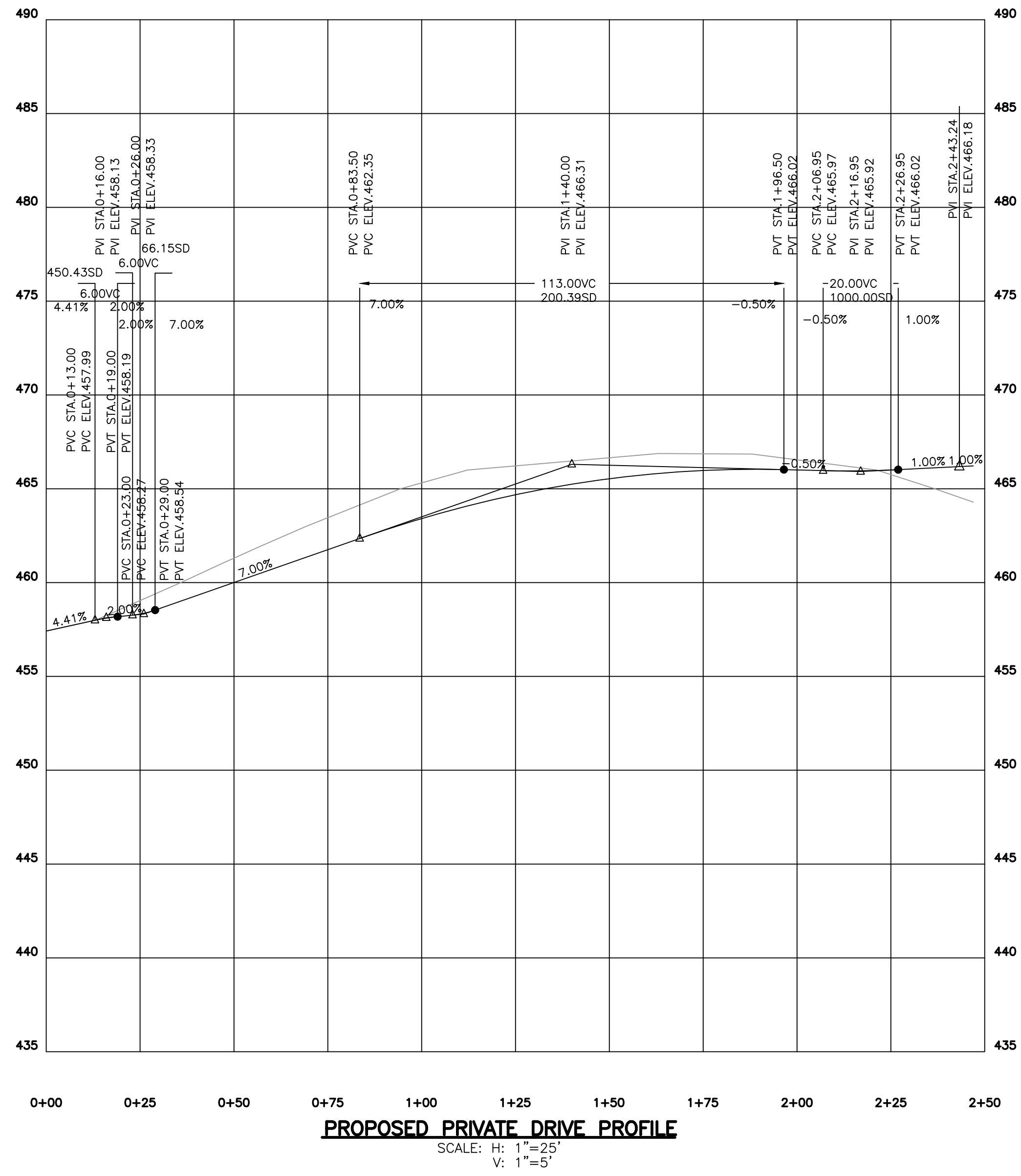
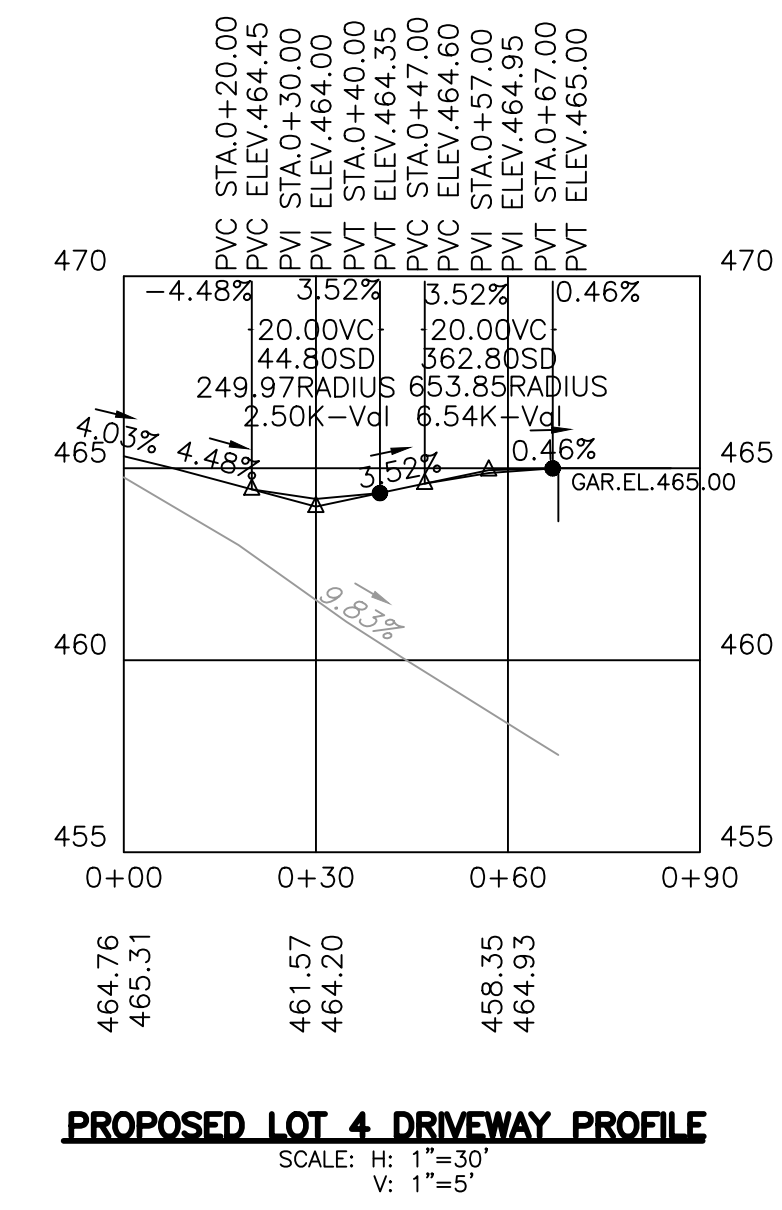
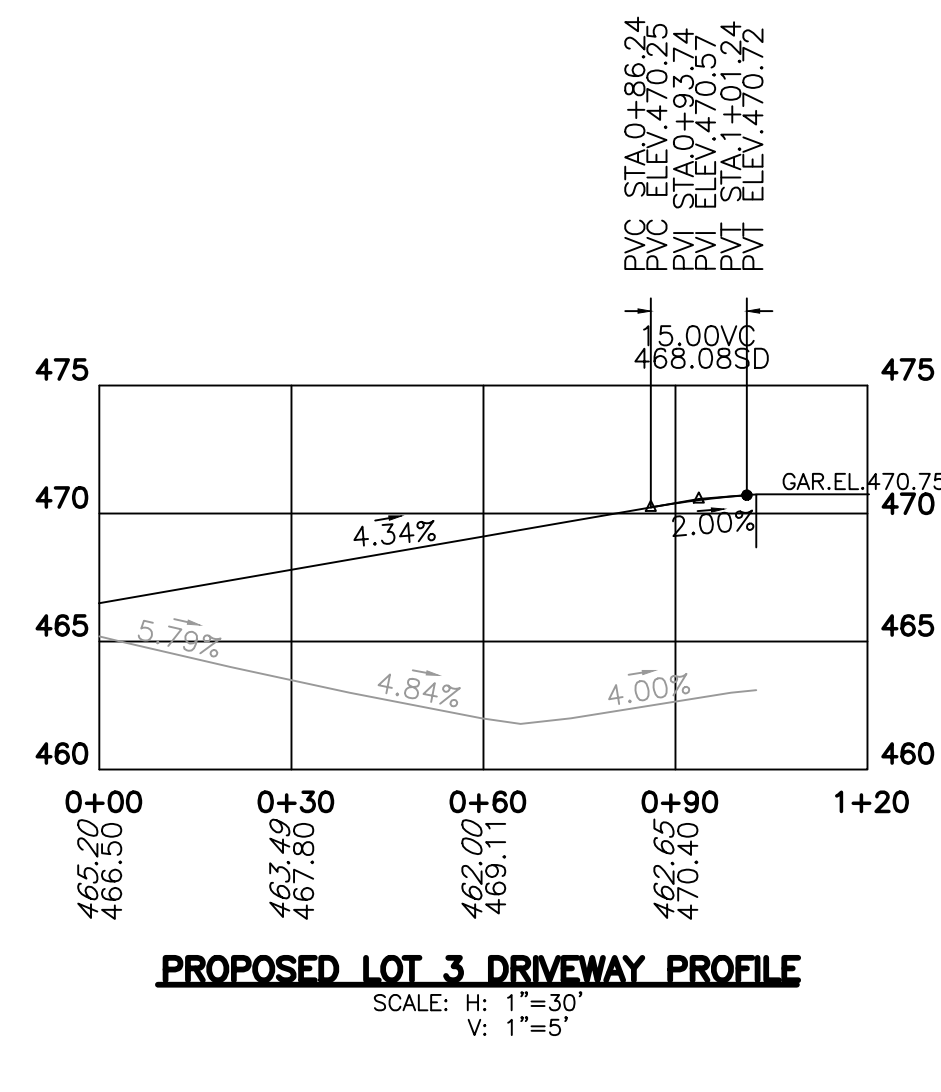
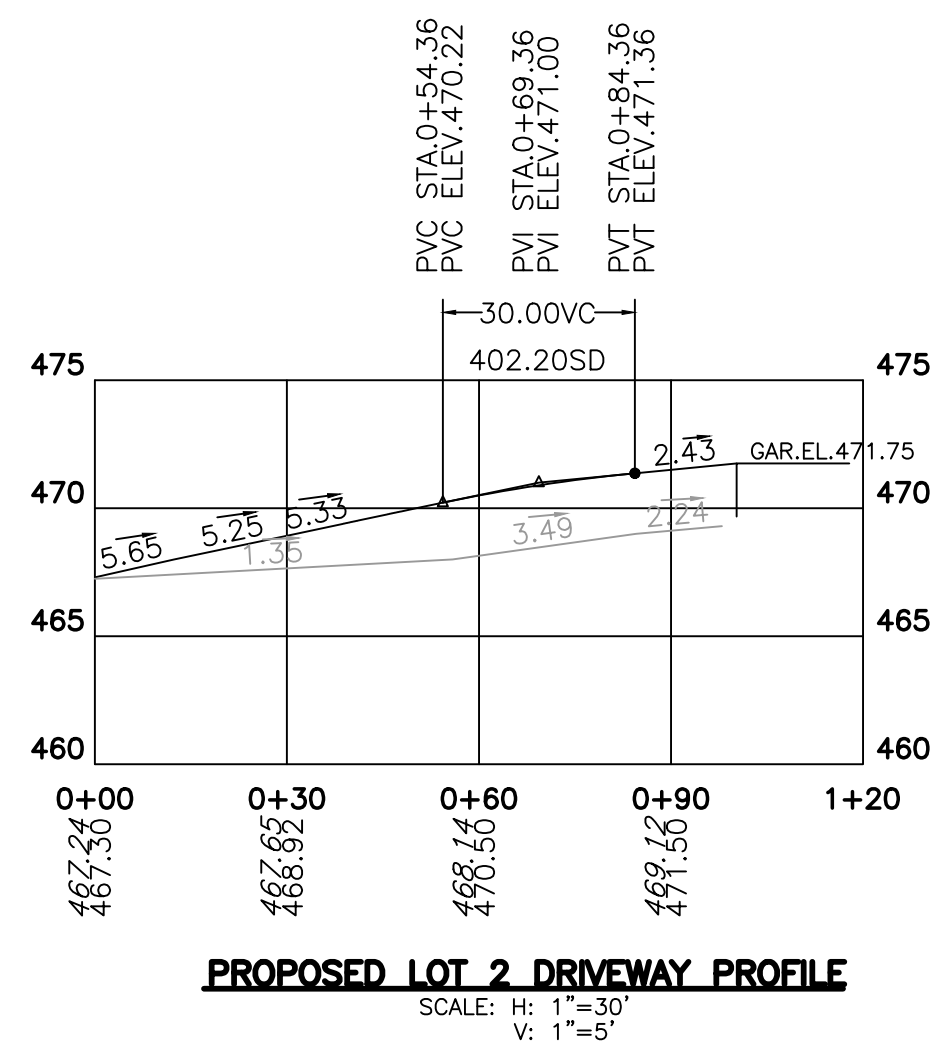


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LANDSCAPE PLAN
RUHE MINOR SUBDIVISION
PRELIMINARY/FINAL PLAN
 2442 HUCKLEBERRY ROAD
 SOUTH WHITEHALL TOWNSHIP
 LEHIGH COUNTY, PENNSYLVANIA

DESIGNED BY:	DATE	REVISIONS
MSN	06/16/2021	BY MSN
MFC/ARF	12/16/2021	BY MSN
March 05, 2021	09/20/2023	BY IMK
1" = 30'	11/17/2023	BY IMK
CW-20-128		
11 OF 23		



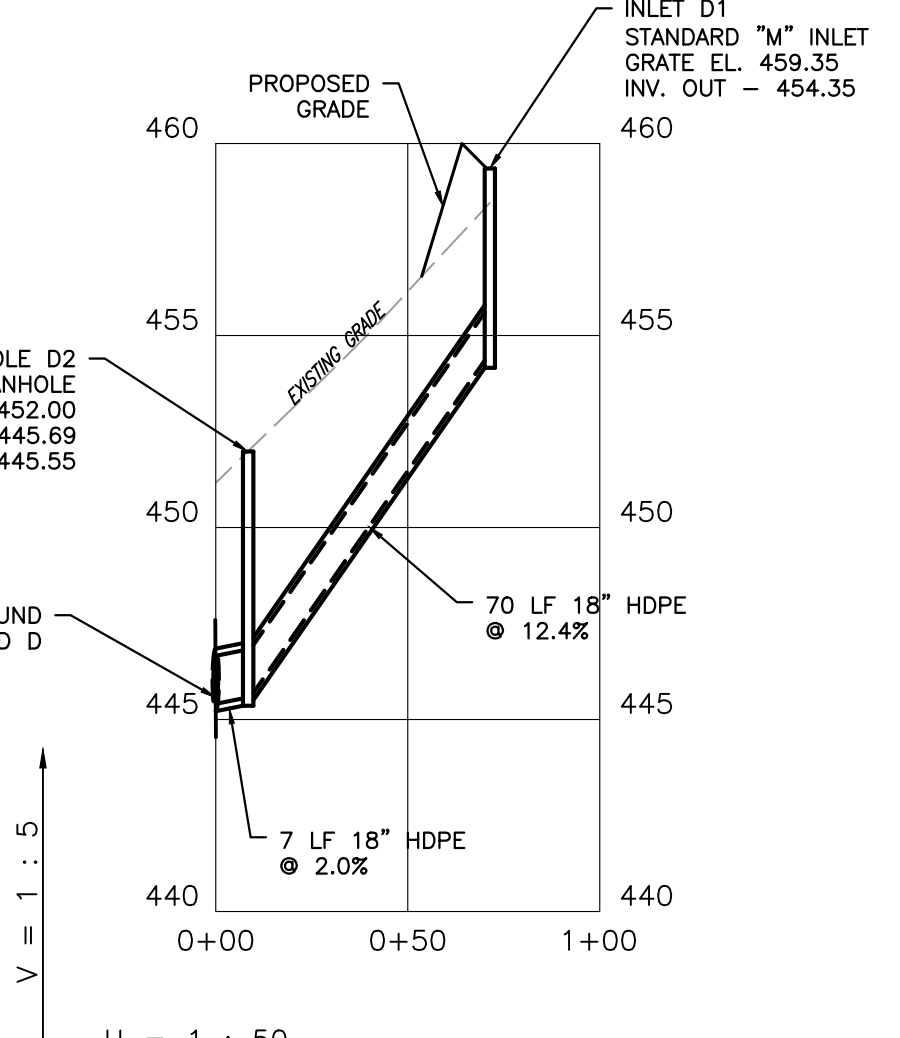
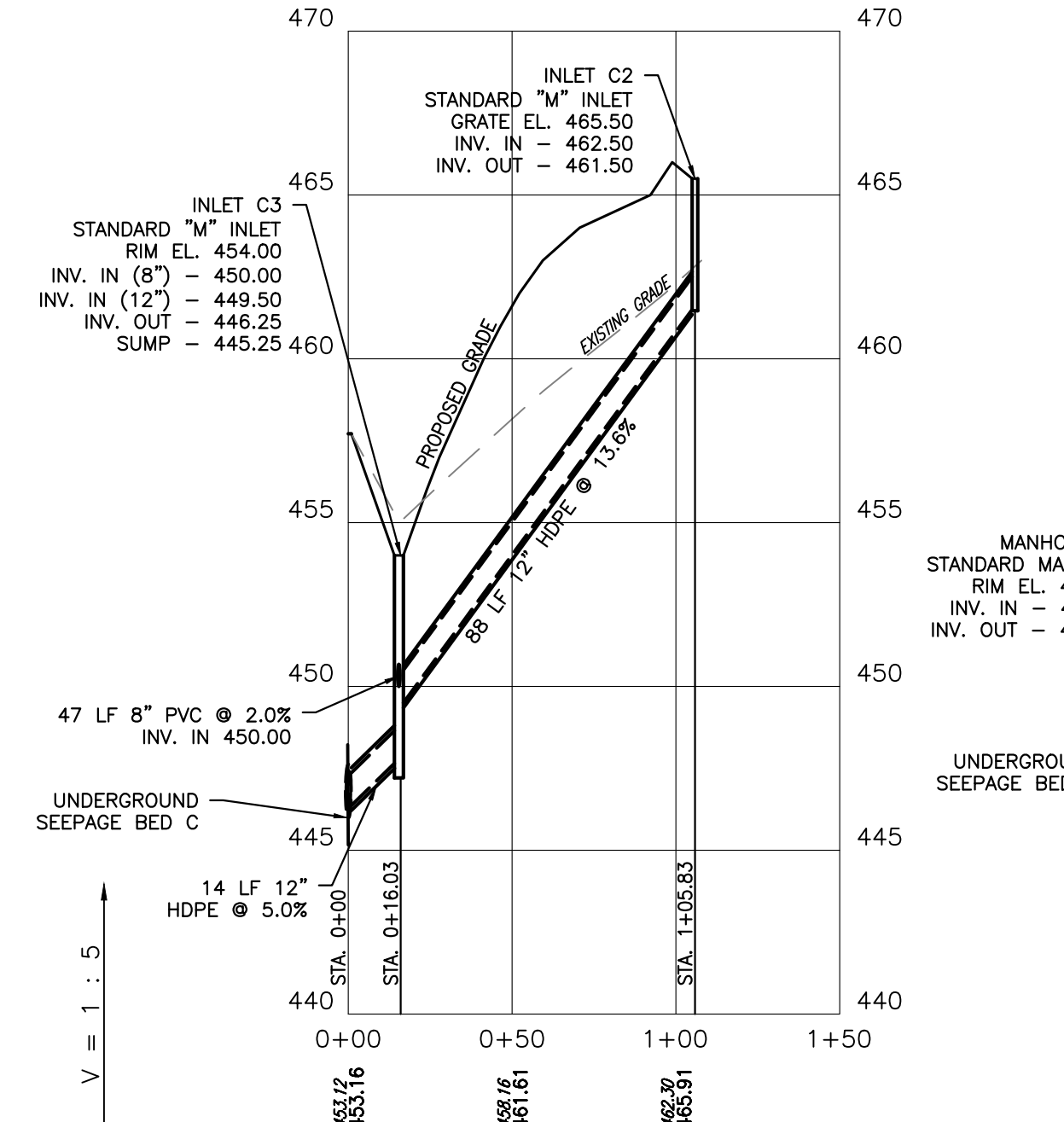
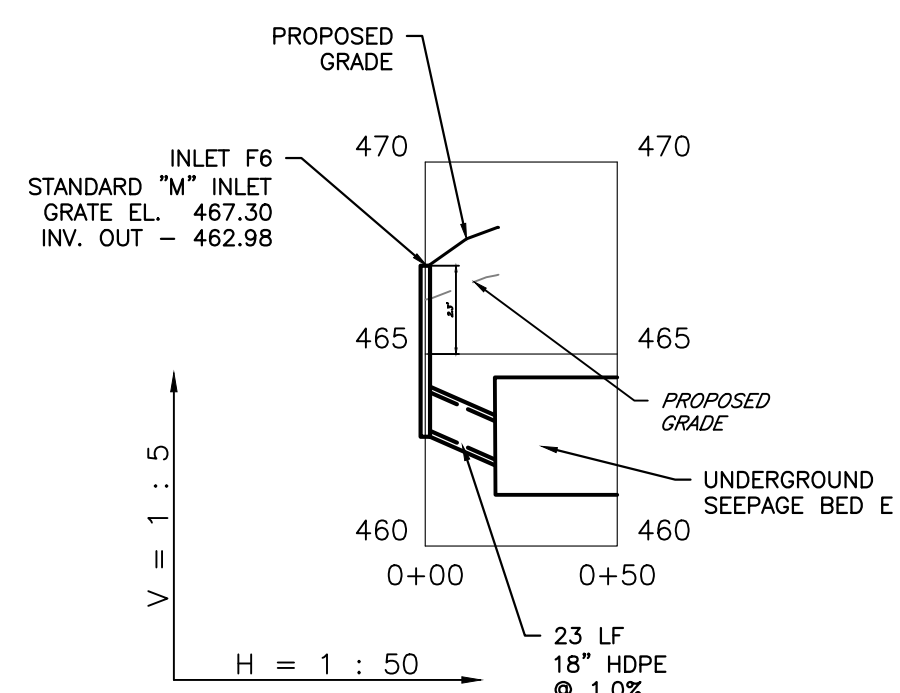
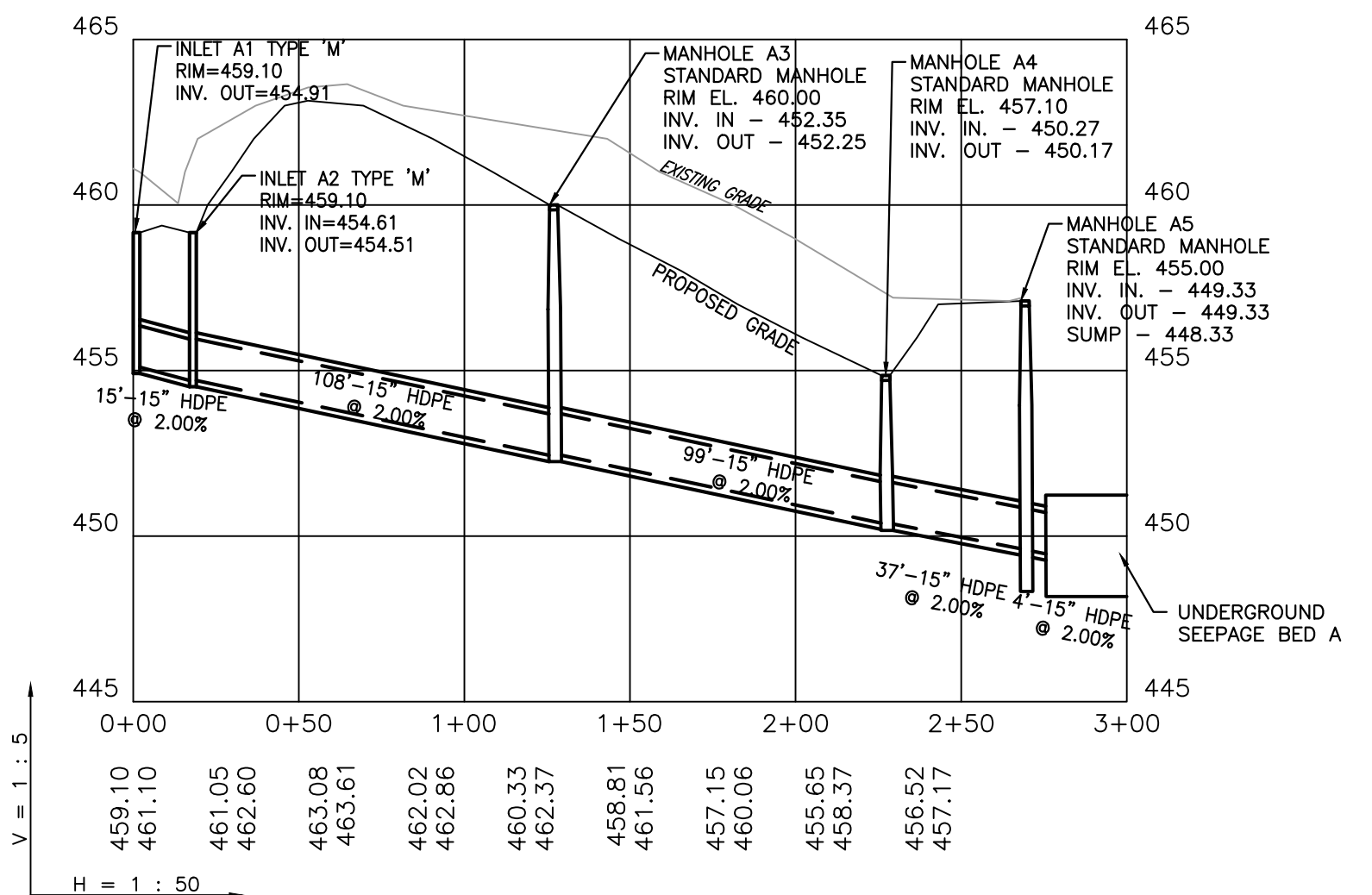
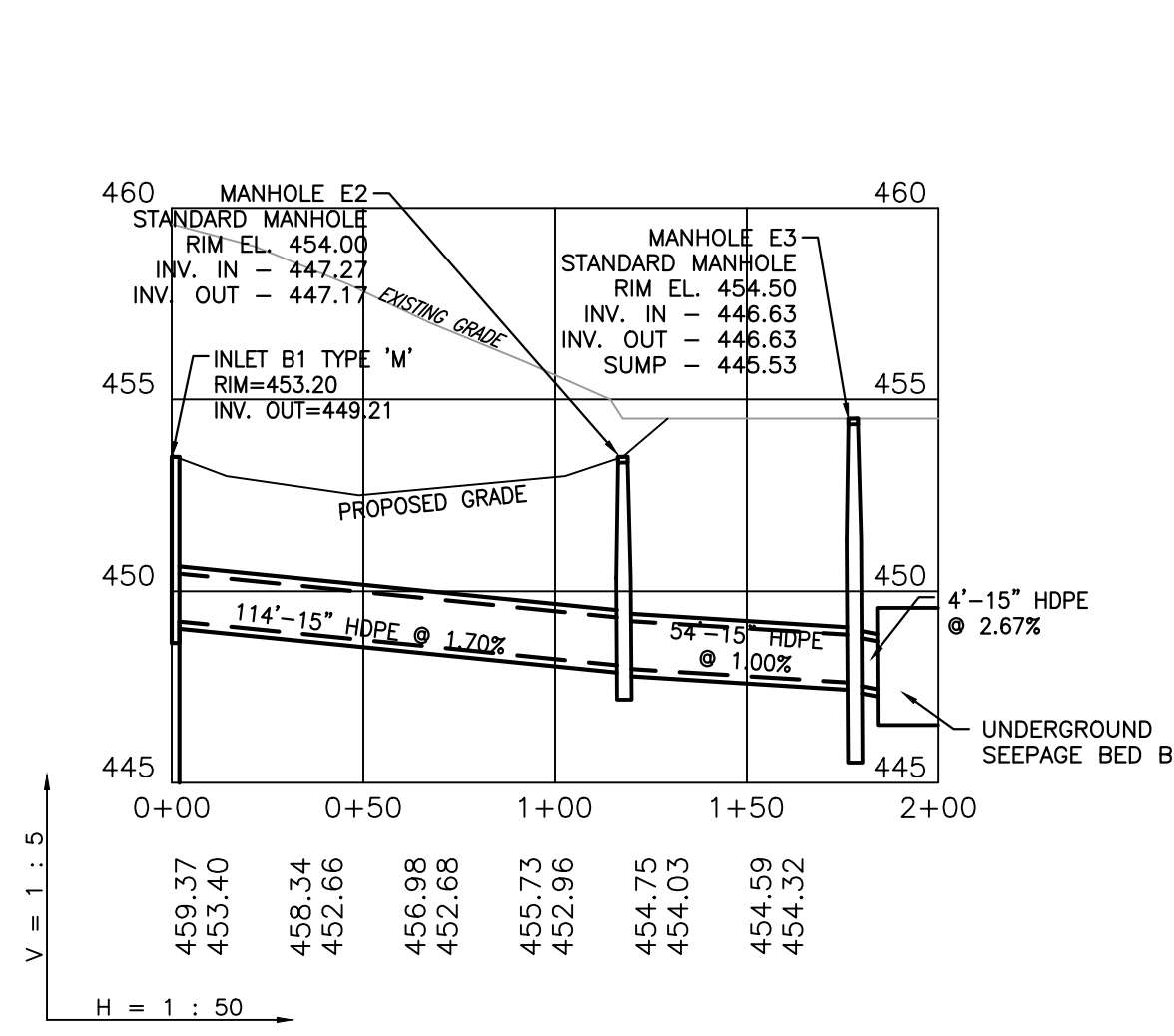
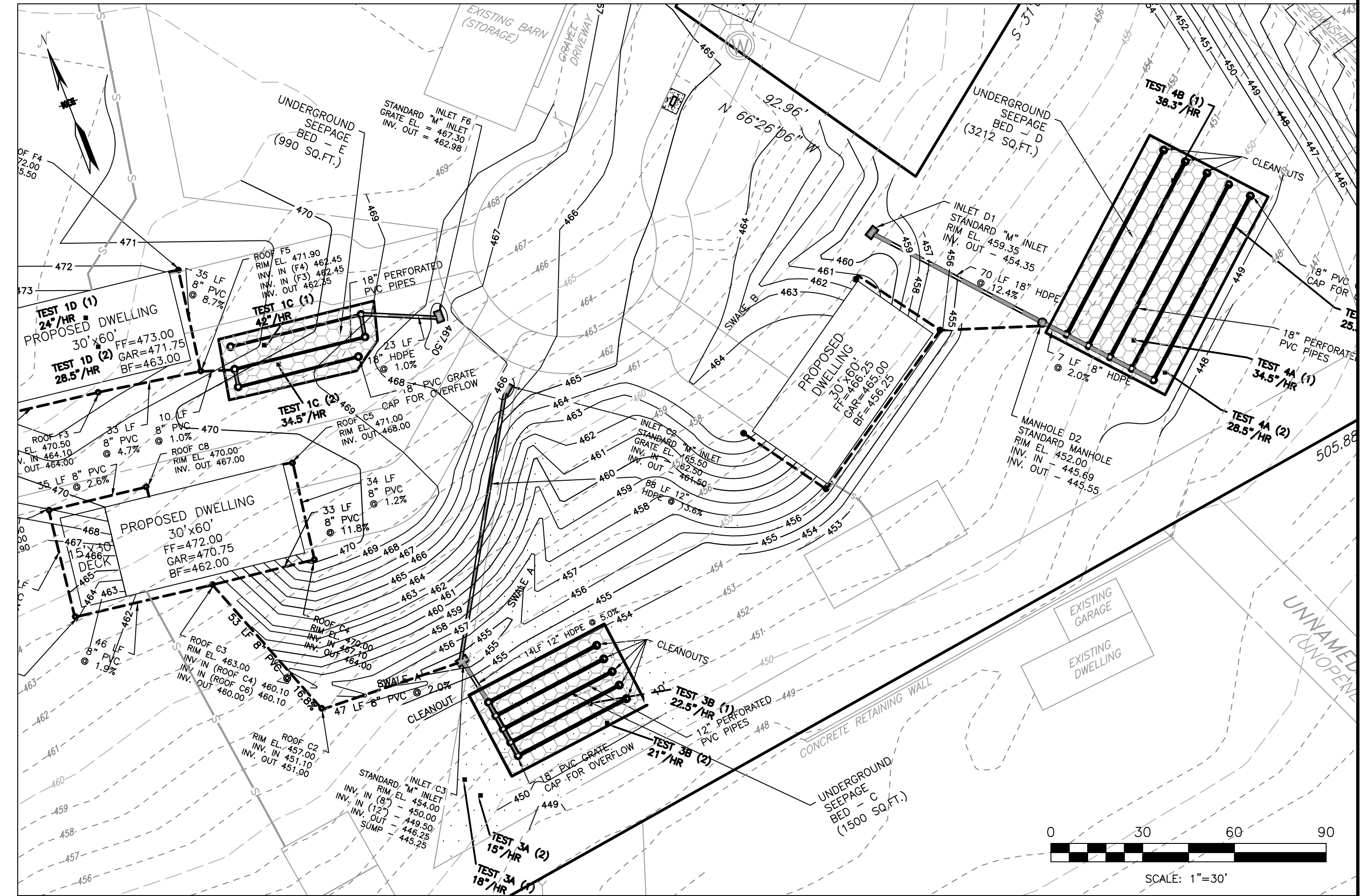
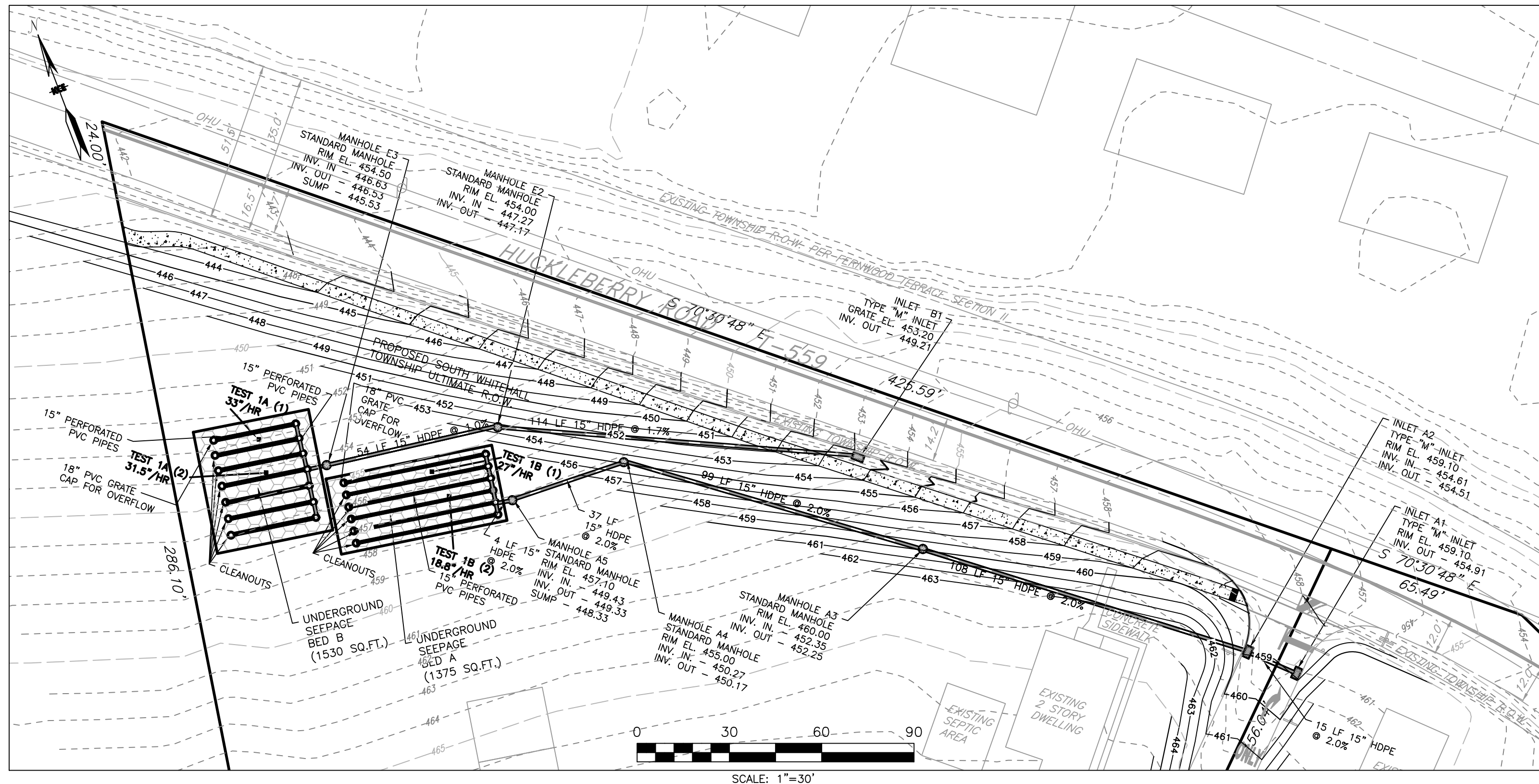
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DATE:	March 05, 2021
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JOB NUMBER:	CW-20-128
SHEET:	12 OF 23

REVISIONS	DATE
BY	DATE
MSN	06/16/2021
MSN	12/16/2021
IMK	09/20/2023
IMK	11/17/2023

SHARED PRIVATE DRIVEWAY & DRIVEWAY PROFILES	
RUHE MINOR SUBDIVISION	
PRELIMINARY/FINAL PLAN	
2442 HUCKLEBERRY ROAD	
SOUTH WHITEHALL TOWNSHIP	
LEHIGH COUNTY, PENNSYLVANIA	



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STORM SEWER INLET B1 TO UNDERGROUND SEEPAGE BED B PROFILE

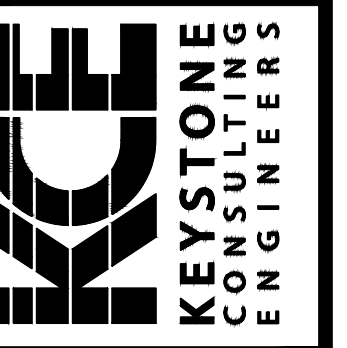
STORM SEWER INLET A1 TO UNDERGROUND SEEPAGE BED A PROFILE

STORM SEWER INLET F6 TO UNDERGROUND SEEPAGE BED E

UNDERGROUND SEEPAGE BED C TO INLET C2

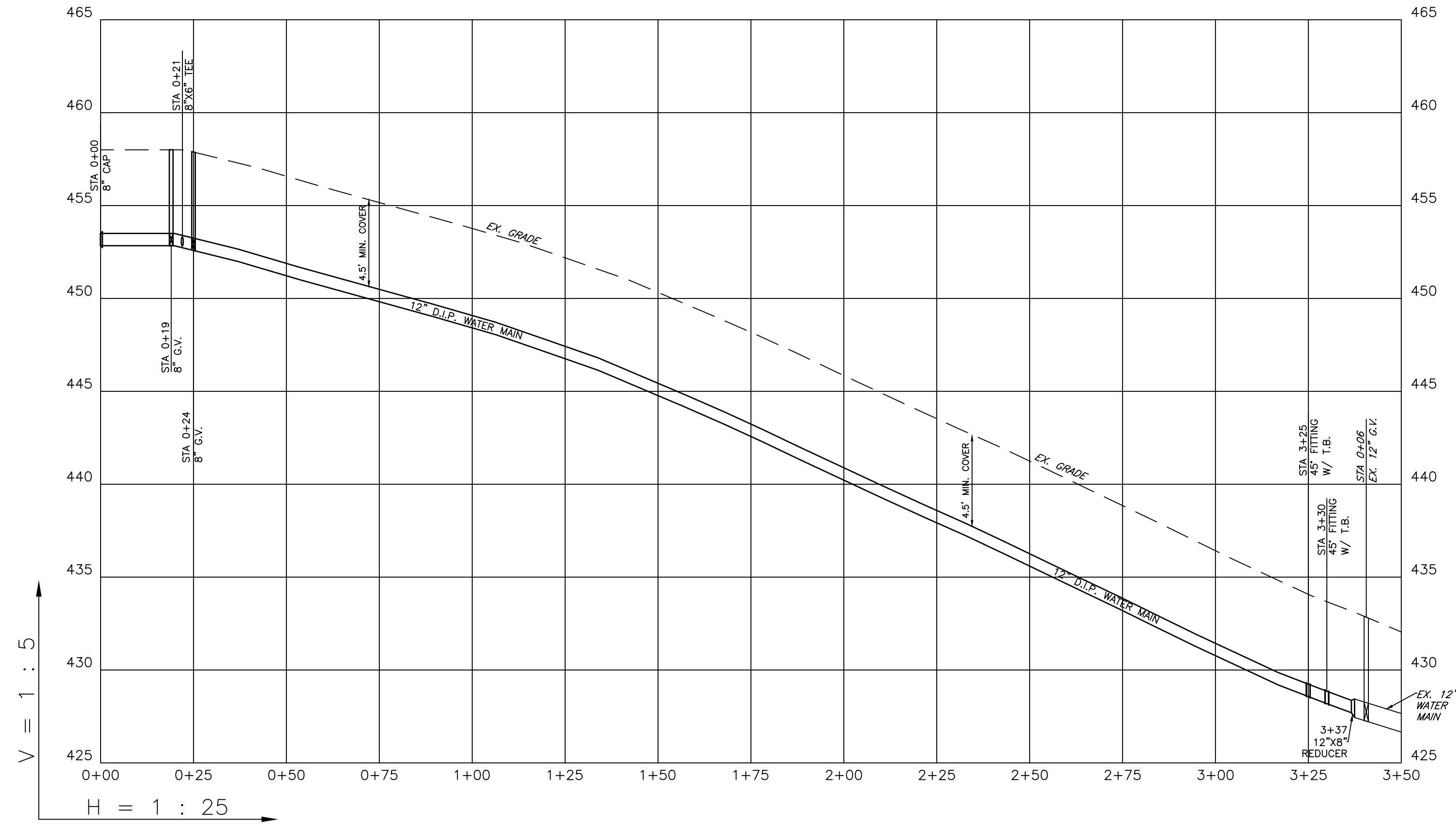
STORM SEWER INLET D1 TO UNDERGROUND SEEPAGE BED D

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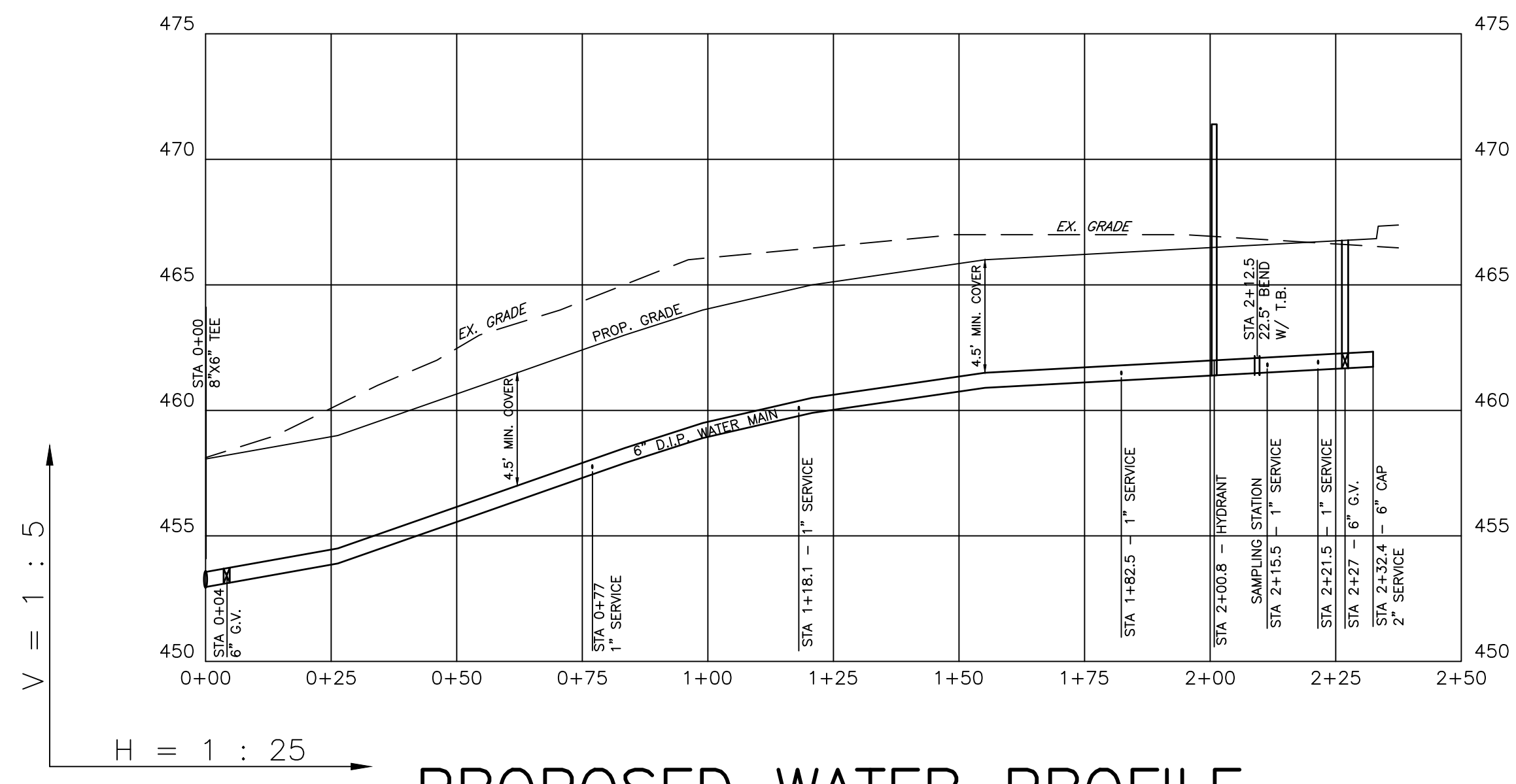


STORMWATER PLAN AND PROFILE
RUHE MINOR SUBDIVISION
PRELIMINARY/FINAL PLAN
 2442 HUCKLEBERRY ROAD
 SOUTH WHITEHALL TOWNSHIP
 LEHIGH COUNTY, PENNSYLVANIA

DESIGNED BY:	KCE
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SHEET:	13 OF 23



**PROPOSED WATER PROFILE
HUCKLEBERRY ROAD**



**PROPOSED WATER PROFILE
PRIVATE DRIVE**

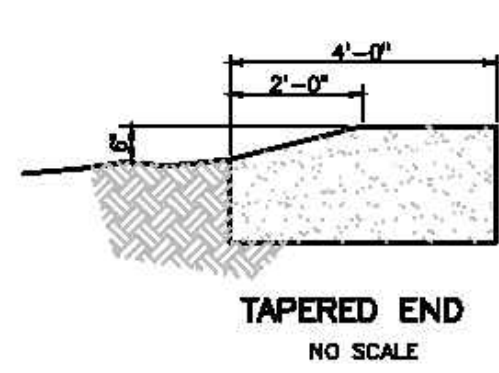
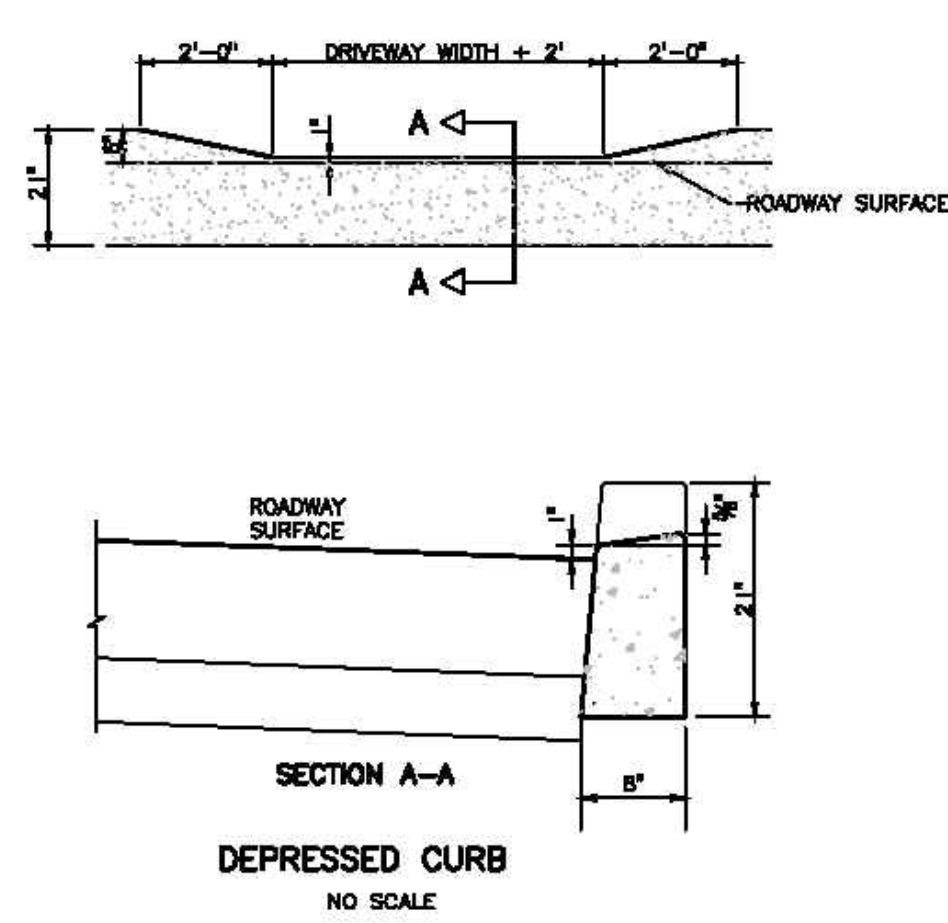
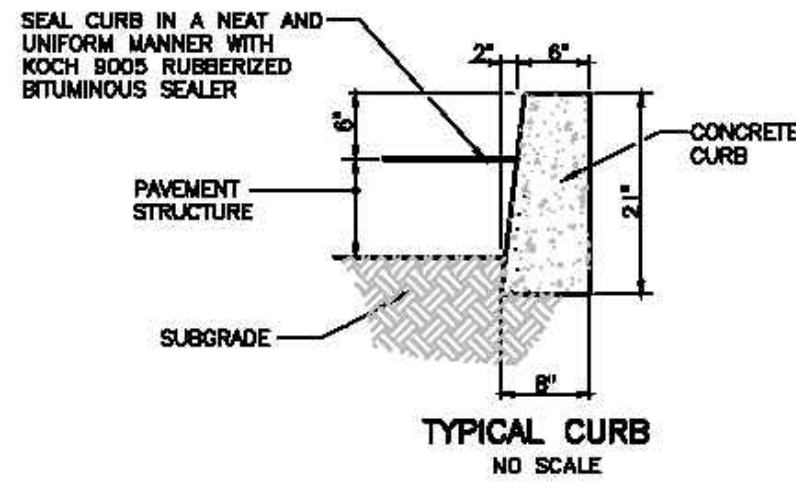
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DRAWN BY:	MSN
CHECKED BY:	MFC/ARF
DATE:	March 05, 2021
SCALE:	AS SHOWN
JOB NUMBER:	CW-20-128
SHEET:	14 OF 23

REVISIONS	
BY:	DATE
MSN	06/16/2021
MSN	12/16/2021
IMK	09/20/2023
IMK	11/17/2023

WATER SYSTEM PLAN AND PROFILE
RUIE MINOR SUBDIVISION
PRELIMINARY/FINAL PLAN
 2442 HUCKLEBERRY ROAD
 SOUTH WHITEHALL TOWNSHIP
 LEHIGH COUNTY, PENNSYLVANIA

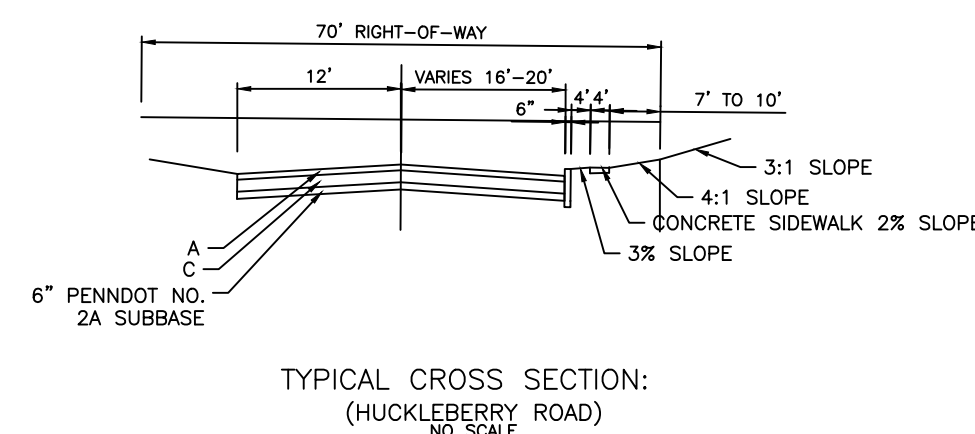
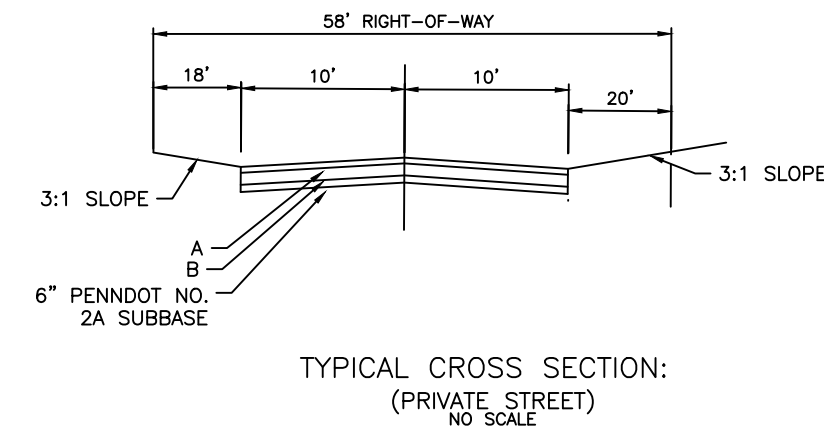


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NOTES:

- EXISTING CURB REMOVAL SHALL BE IN COMPLETE SECTIONS (JOINT TO JOINT), NOT PARTIAL SECTIONS.
- PROVIDE MATERIALS AND CONSTRUCTION MEETING THE REQUIREMENTS OF PENNDOT SPECIFICATIONS, PUBLICATION 408, CURRENT EDITION, SECTION 630.
- SPACE CONTRACTION JOINTS IN UNIFORM LENGTHS OR SECTIONS, 10'-0" MAX. TO 4'-0" MIN.
- PLACE 1/2 INCH BITUMINOUS PREMOULDED EXPANSION JOINT FILLER MATERIAL AT STRUCTURES AND AT THE END OF THE WORK DAY. CUT MATERIAL TO CONFORM TO AREA ADJACENT TO CURB OR TO CONFORM TO CROSS SECTIONAL AREA OF CURB.
- EXPANSION JOINTS SHALL BE SPACED AS REQUIRED BY THE TOWNSHIP - TYPICALLY 30' O. C.



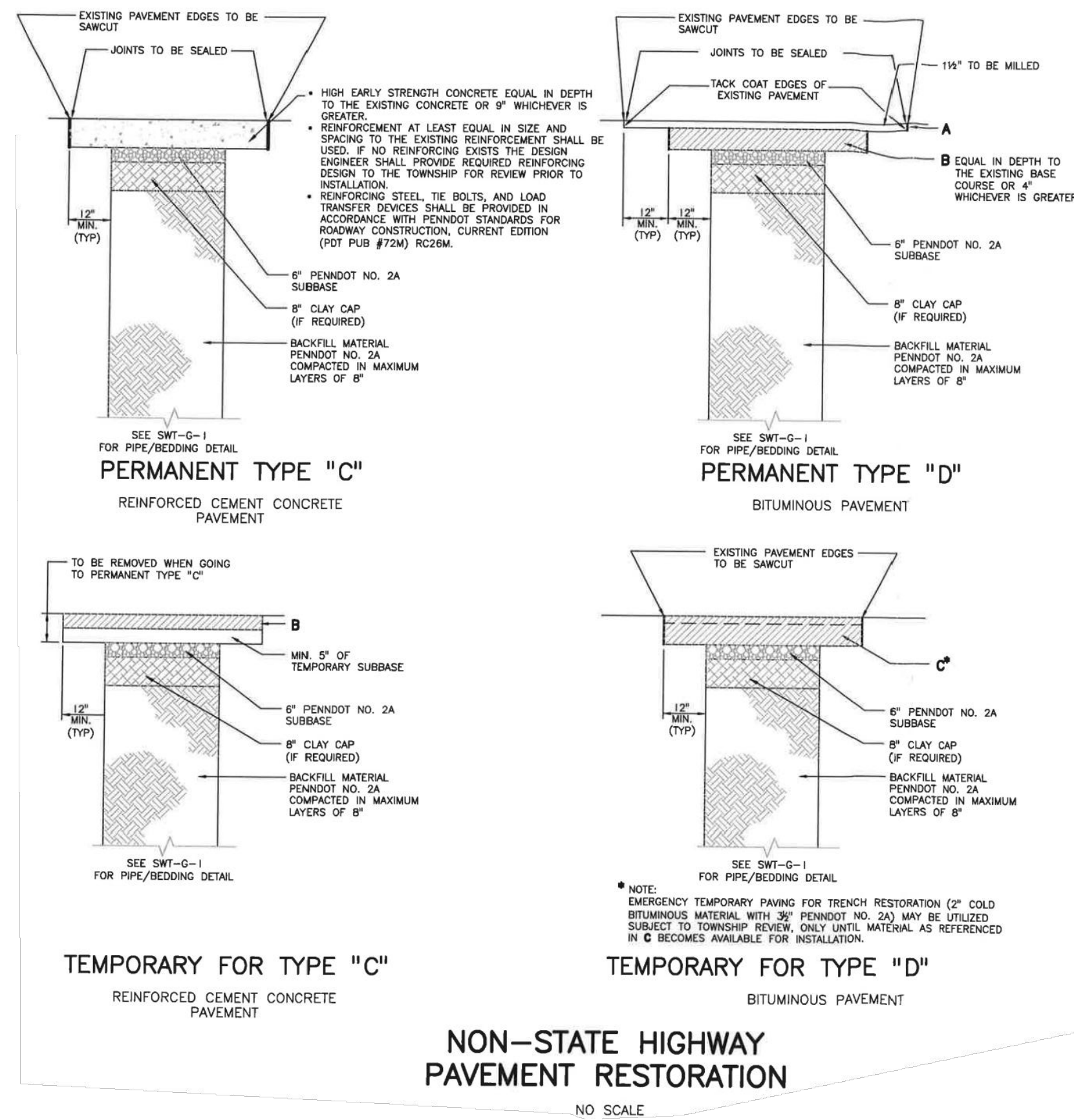
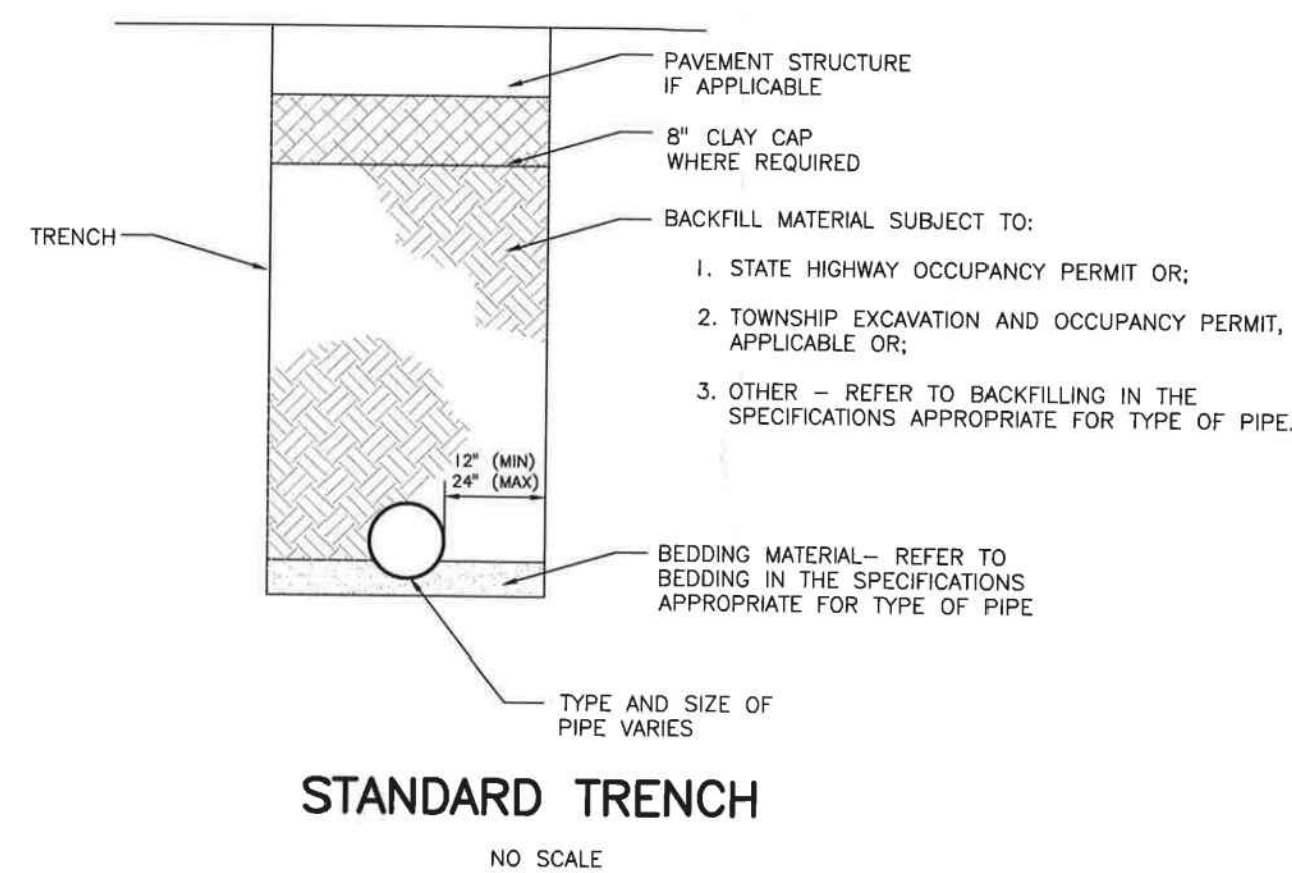
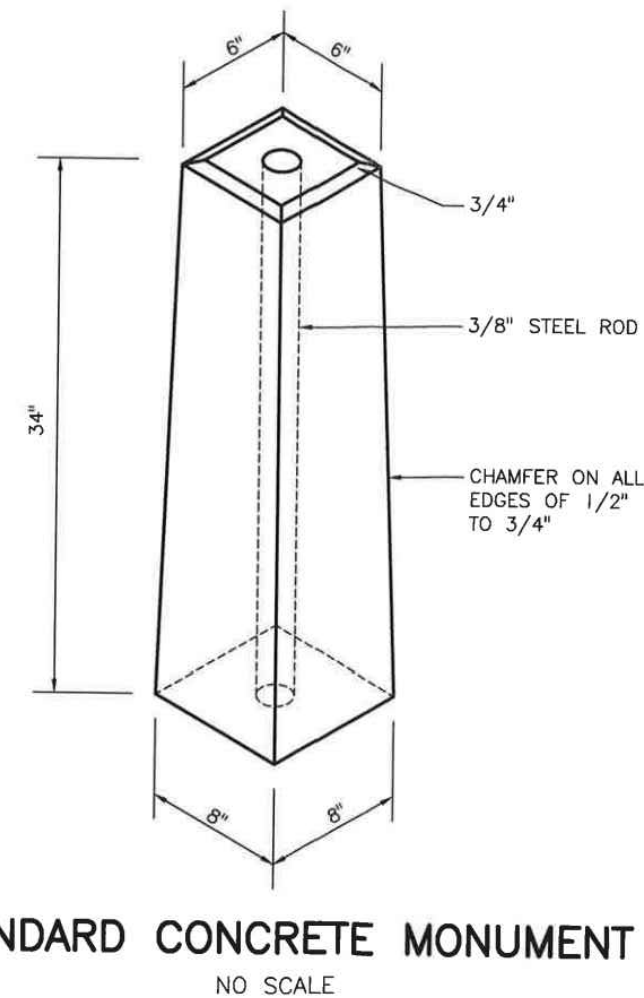
- PAVEMENT MATERIALS:**
- 1 1/2" SUPERPAVE ASPHALT 9.5mm, PG64-22, 0.0 TO 0.3 MILLION ESAL, SRL-L, HMA WEARING COURSE.
 - 4" SUPERPAVE ASPHALT, 25.0mm, PG64-22, 0.0 TO 0.3 MILLION ESAL, HMA BASE COURSE.
 - 4 1/2" SUPERPAVE ASPHALT AS DEFINED IN B.

- PAVEMENT NOTES:**
- PROVIDE MATERIALS AND CONSTRUCTION MEETING THE REQUIREMENTS OF PENNDOT SPECIFICATIONS, PUBLICATION 408, CURRENT EDITION, SECTIONS 203, 204, 205, 206, 210, 309, 350, 409, 630 AND 676.
 - SEAL CURB IN ACCORDANCE WITH CONCRETE CURB DETAILS SWT-R-5.
 - THE FOLLOWING ABBREVIATIONS APPEAR ON THIS SHEET:
 - ESAL - EQUIVALENT SINGLE AXLE LOAD
 - SRL - SKID RESISTANCE LEVEL
 - HMA - HOT MIXED ASPHALT
 - PG - PERFORMANCE GRADE

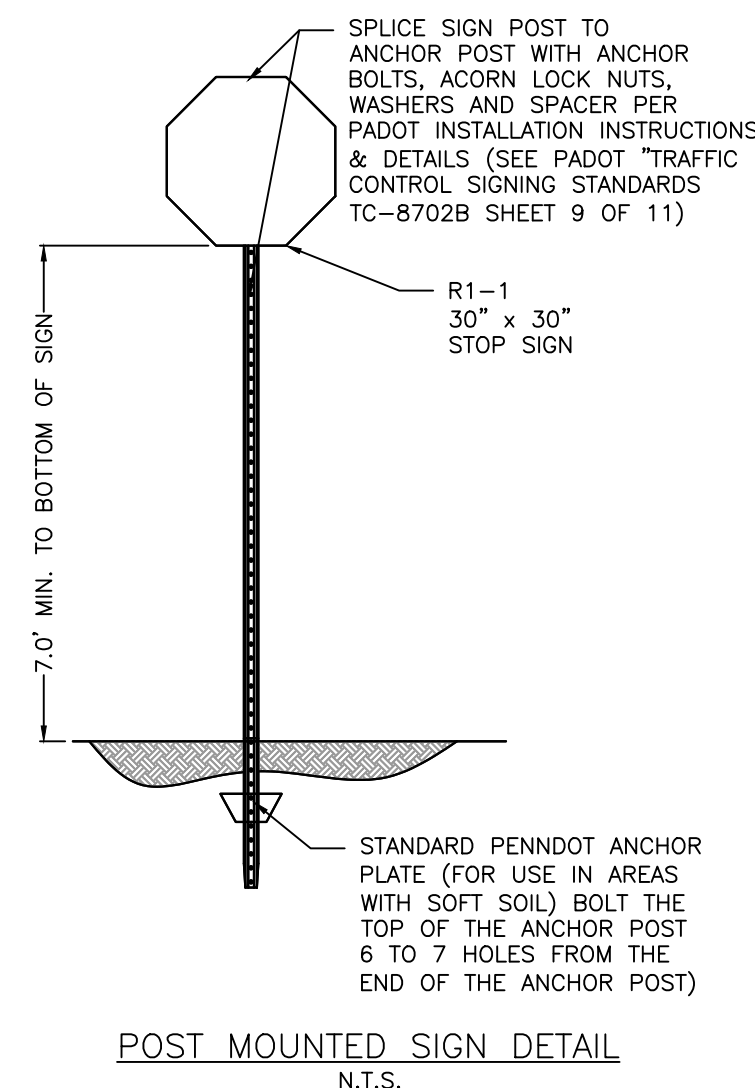
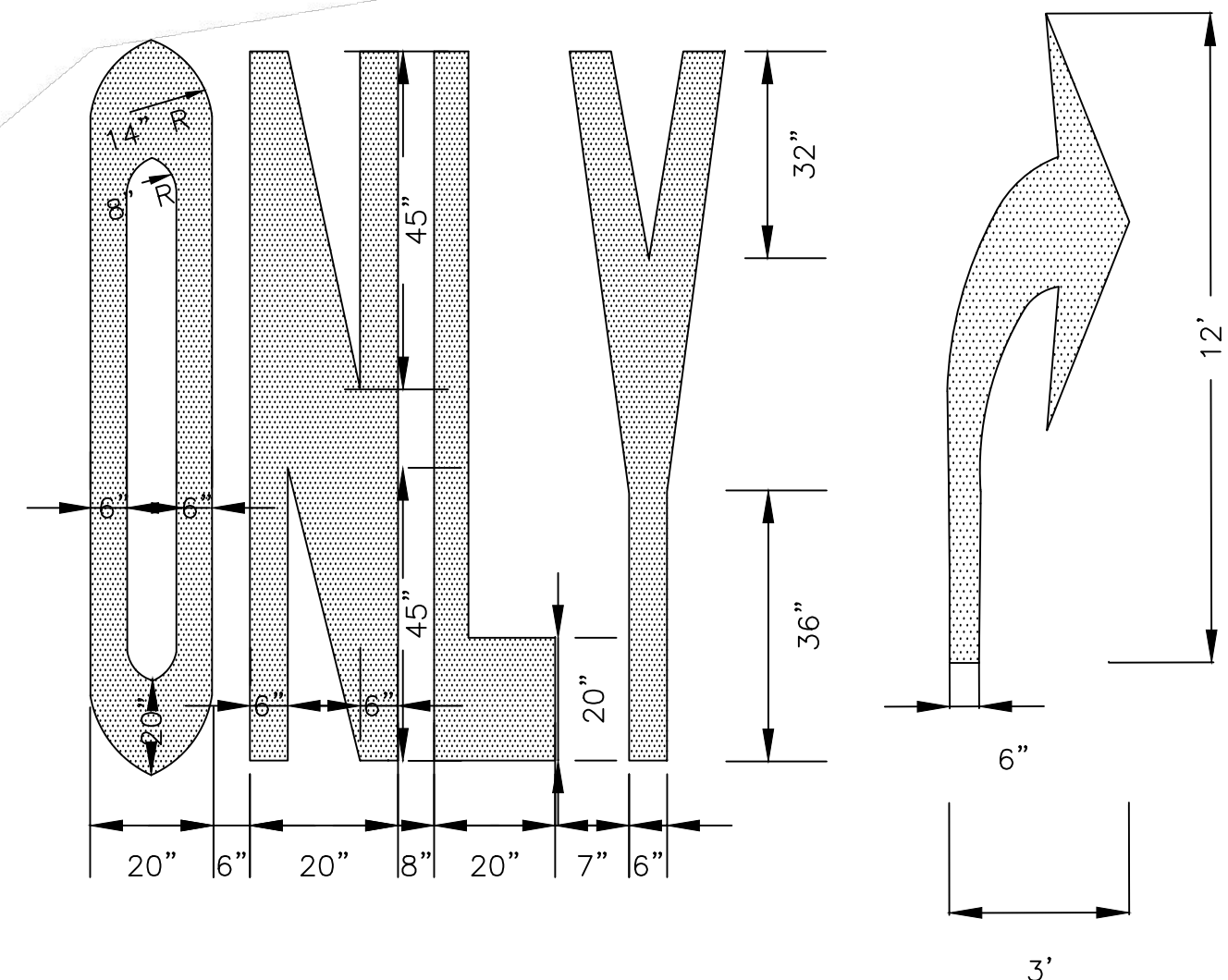
PROPOSED ROADWAY CROSS SECTIONS

NOTES:

- LOCATION: PERMANENT REFERENCE MONUMENTS SHALL BE LOCATED AT EACH STREET INTERSECTION, AT THE BEGINNING AND ENDING OF ALL STREET CURVES, AND AT EXTERIOR CORNERS OF THE SUBDIVISION DESIGNATED BY THE TOWNSHIP ENGINEER.
- THE DEVELOPER MAY INSTALL MONUMENTS ON ONLY ONE SIDE OF THE STREET PROVIDED THAT ENOUGH MONUMENTS ARE SET TO PERMIT A SURVEYOR TO STAKE OUT ACCURATELY ANY BUILDING LOT ON THE FINAL PLAN.
- TYPE: REFERENCE MONUMENTS SHALL BE CONSTRUCTED OF STEEL REINFORCED PORTLAND CEMENT TO THE DIMENSIONS SHOWN ON THIS DRAWING, OR AS REVIEWED IN ADVANCE IN WRITING BY THE TOWNSHIP ENGINEER.
- PLACEMENT: REFERENCED MONUMENTS SHALL BE PLACED SO THAT THE TOP OF THE MONUMENT IS FLUSH WITH FINISH GRADE.



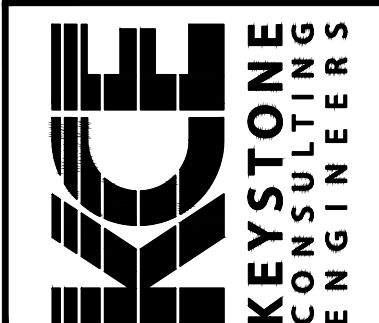
- NOTES:**
- PROVIDE MATERIALS AND CONSTRUCTION MEETING THE REQUIREMENTS OF PENNDOT SPECIFICATIONS, PUBLICATION 408, CURRENT EDITION, SECTIONS 203, 204, 205, 206, 210, 309, 350 AND 409.
 - PERMANENT BITUMINOUS PAVING TYPE IN TRENCH SHALL MATCH EXISTING TYPE OF PAVING IN THE ROAD.
 - WARNING TAPE SHALL BE PLACED AT A MINIMUM OF 2' ABOVE ANY MANHOLE PIPE OR LATERAL.
- NOTES:**
- SEAL CURB IN ACCORDANCE WITH CONCRETE CURB DETAILS SWT-R-5.
 - THE FOLLOWING ABBREVIATIONS APPEAR ON THIS SHEET:
 - ESAL - EQUIVALENT SINGLE AXLE LOAD
 - SRL - SKID RESISTANCE LEVEL
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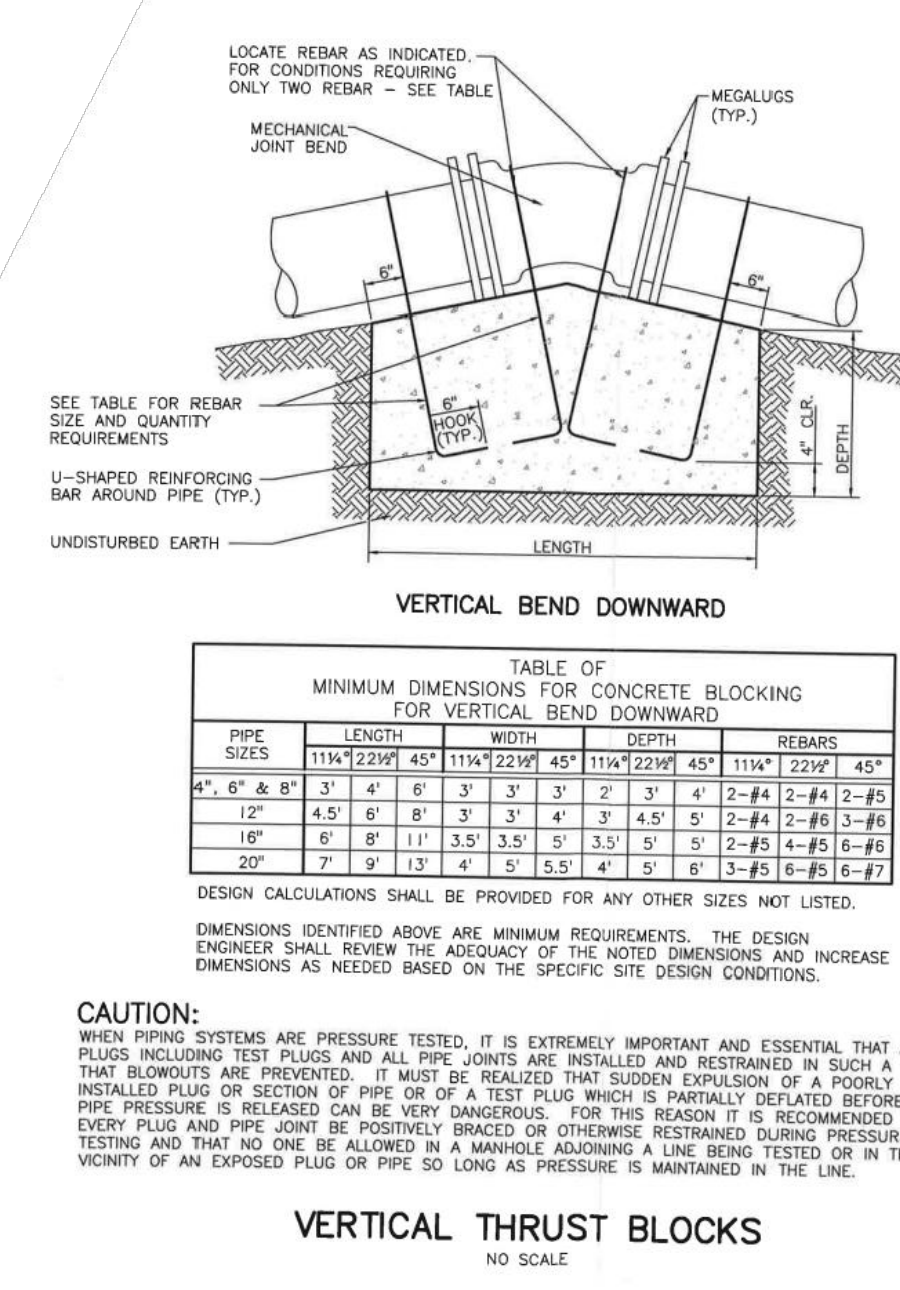
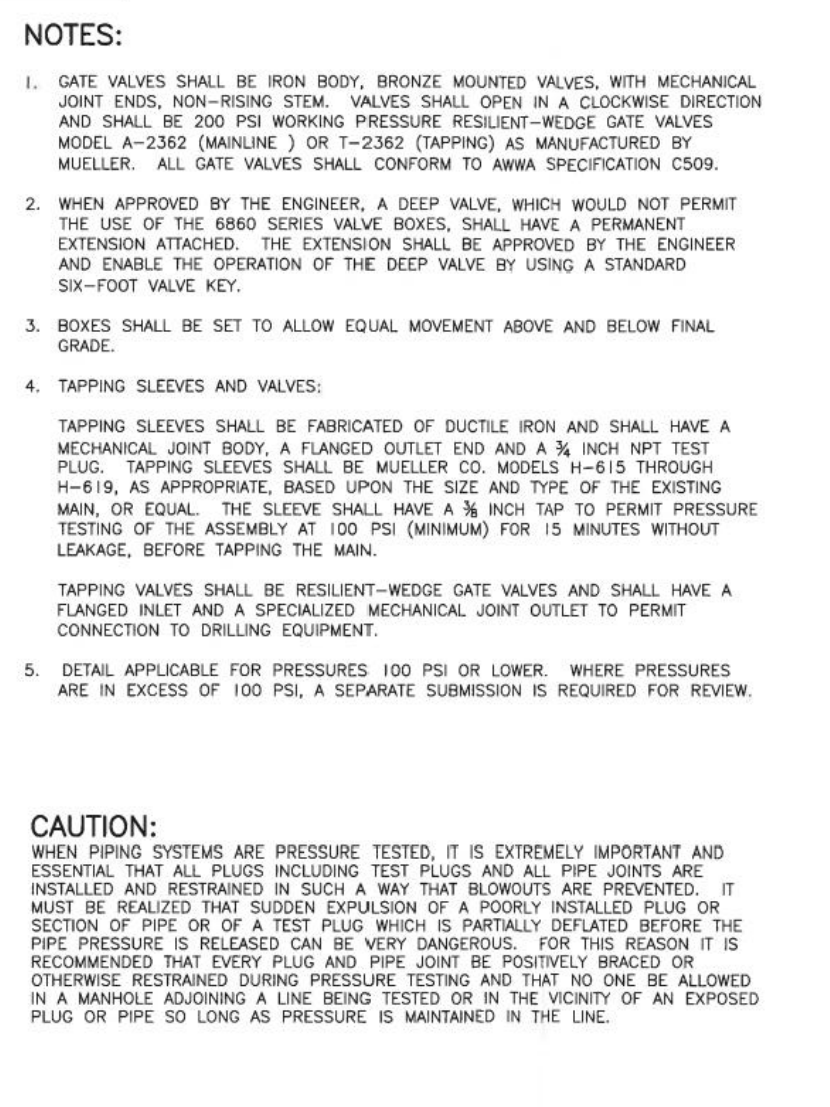
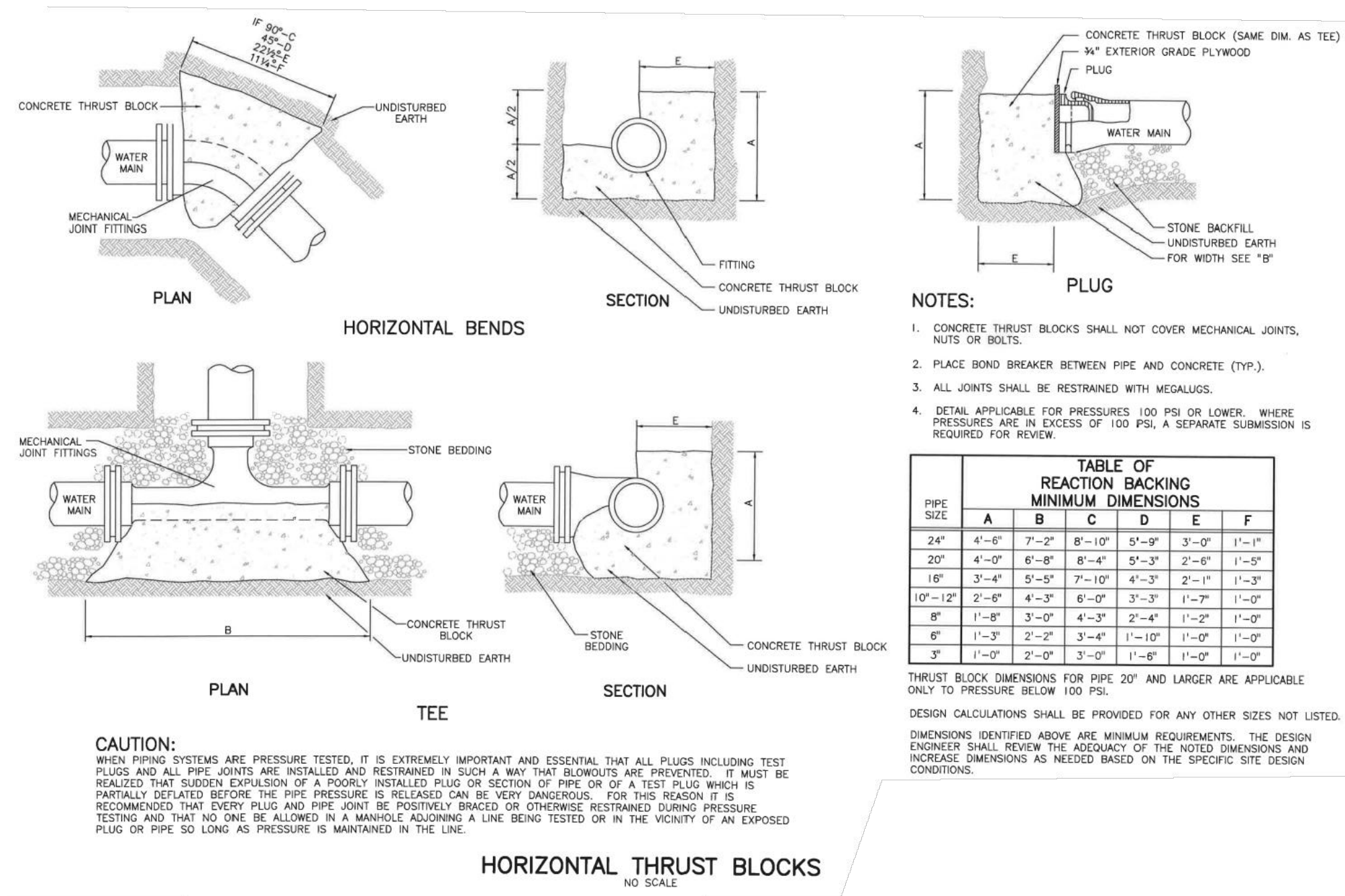
NOTES:

- POST MOUNTED SIGNS SHALL BE TYPE B CHANNEL BAR POSTS AND SHALL CONFORM TO PADOT "TRAFFIC CONTROL SIGNING STANDARDS" TC-8702B SHEET 8 THRU 11 OF 11. APPROPRIATE POSTS SHALL BE SELECTED BASED ON THE SIZE OF THE SIGN USING THE SELECTION TABLES CONTAINED THEREIN.
- SIGN INSTALLATION SHALL BE IN ACCORDANCE WITH PADOT "TRAFFIC CONTROL SIGNING STANDARDS" TC-8702B SHEETS 8 THRU 11 OF 11 AS AMENDED.
- SEE CIVIL PLANS FOR EXACT LOCATION, TYPE AND SIZE OF SIGNS. ALL REGULATORY (R SERIES) SIGNS SHALL CONFORM TO THE PADOT "HANDBOOK OF APPROVED SIGNS", PUBLICATION 236M, AS AMENDED UNLESS OTHERWISE SPECIFIED.
- SIGNS SHALL BE SETBACK 2' FROM CURBLINES OR OTHER OBSTRUCTIONS AS MEASURED FROM THE FACE/EDGE OF THE SIGN.
- RESERVED PARKING SPACE SIGNS SHALL CONFORM TO DEPARTMENT OF JUSTICE "ADA STANDARDS FOR ACCESSIBLE DESIGN" AS AMENDED.
- ALL SIGNS SHALL BE INSTALLED WITH ACORN NUT FASTENERS.

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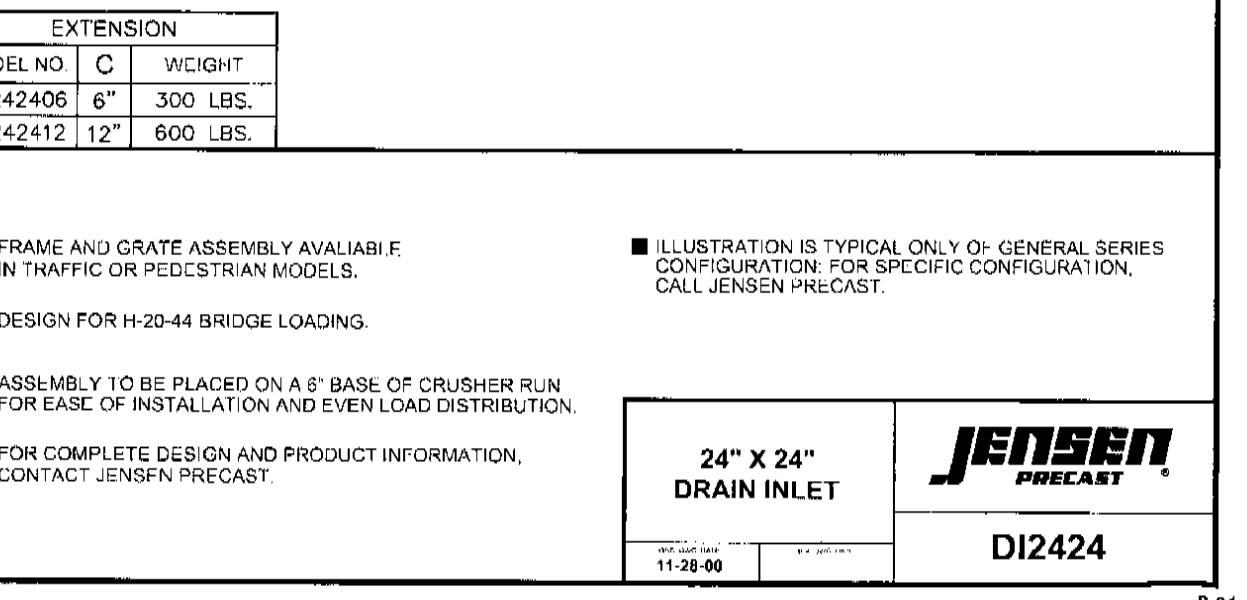
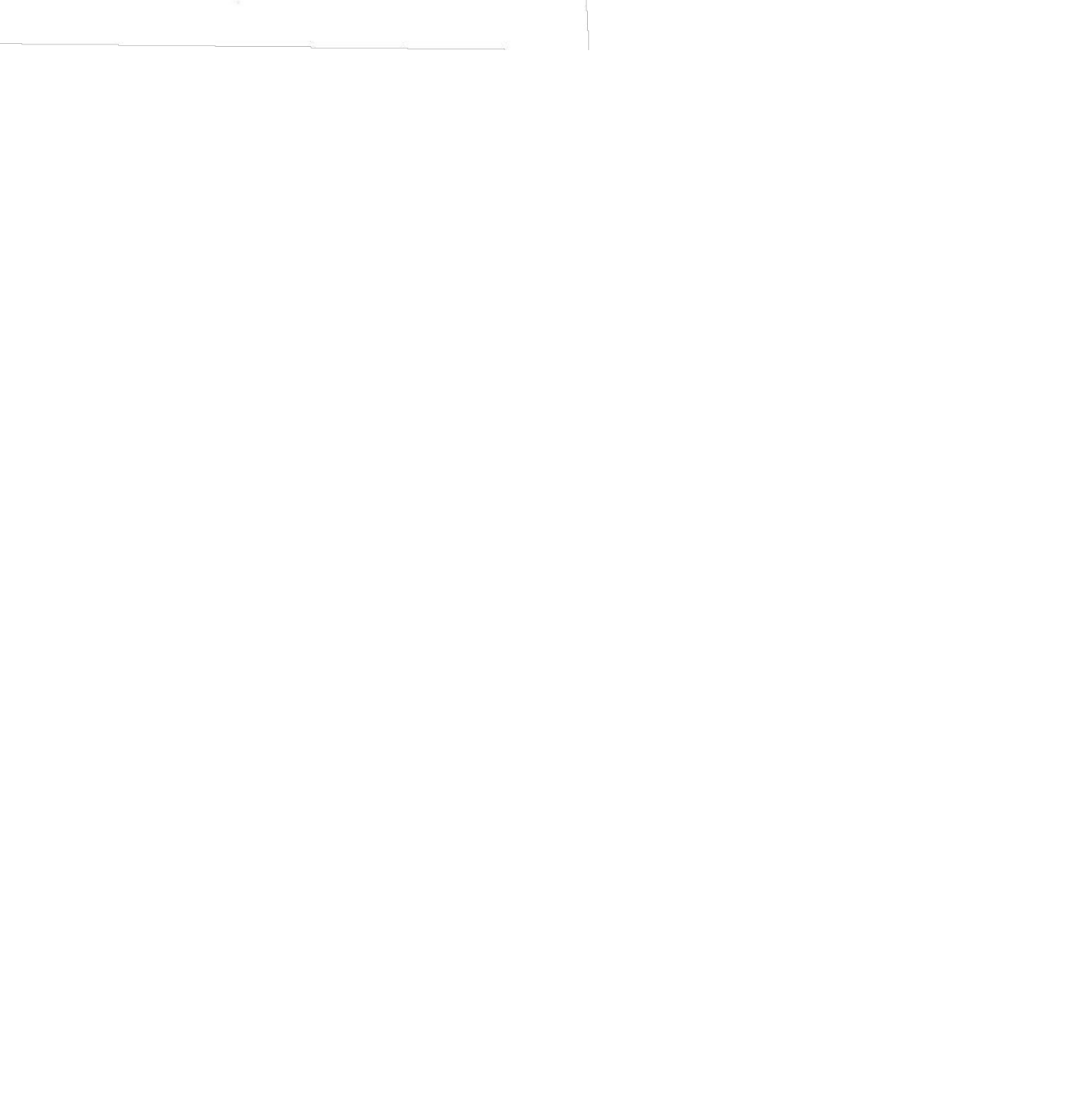
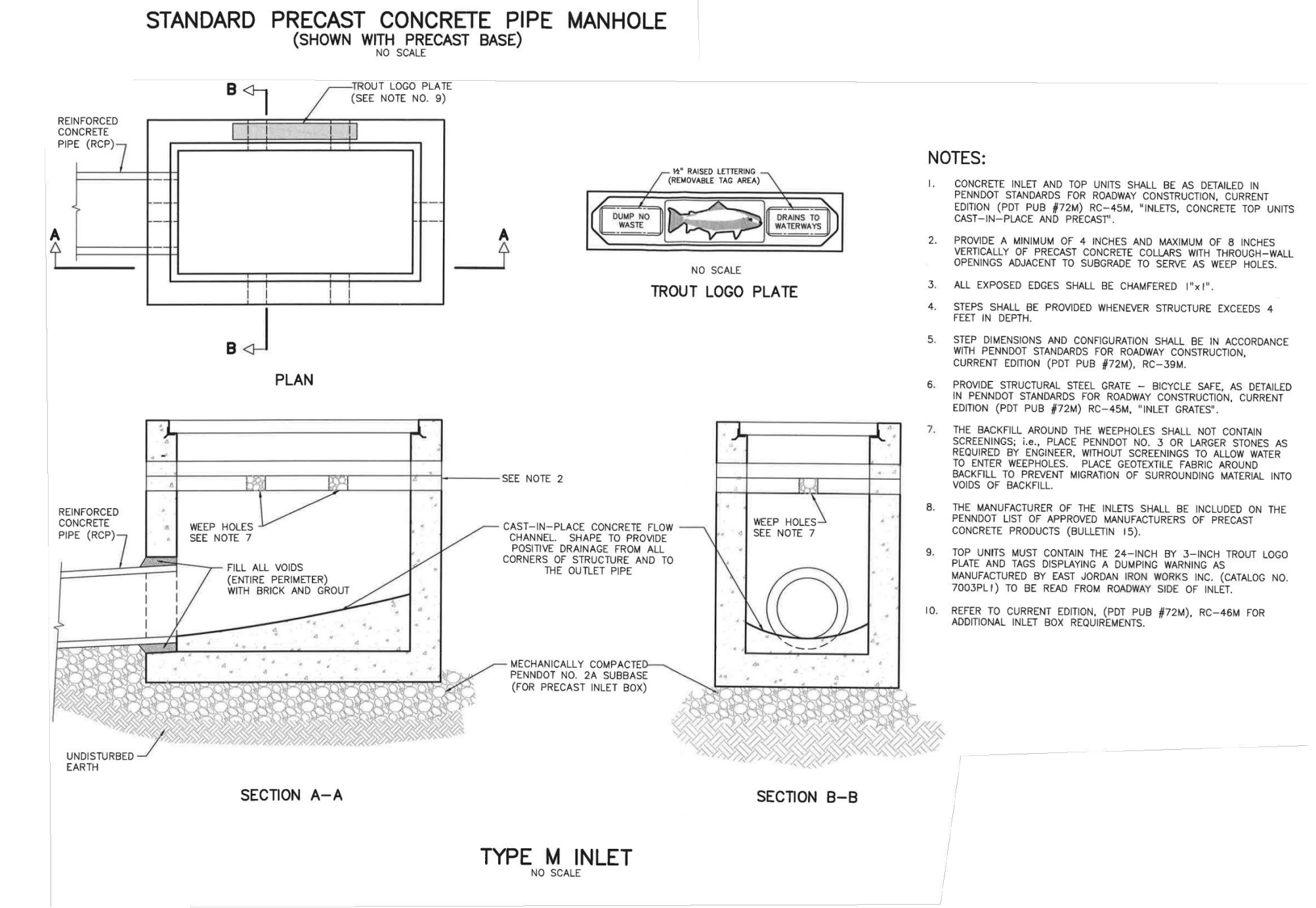
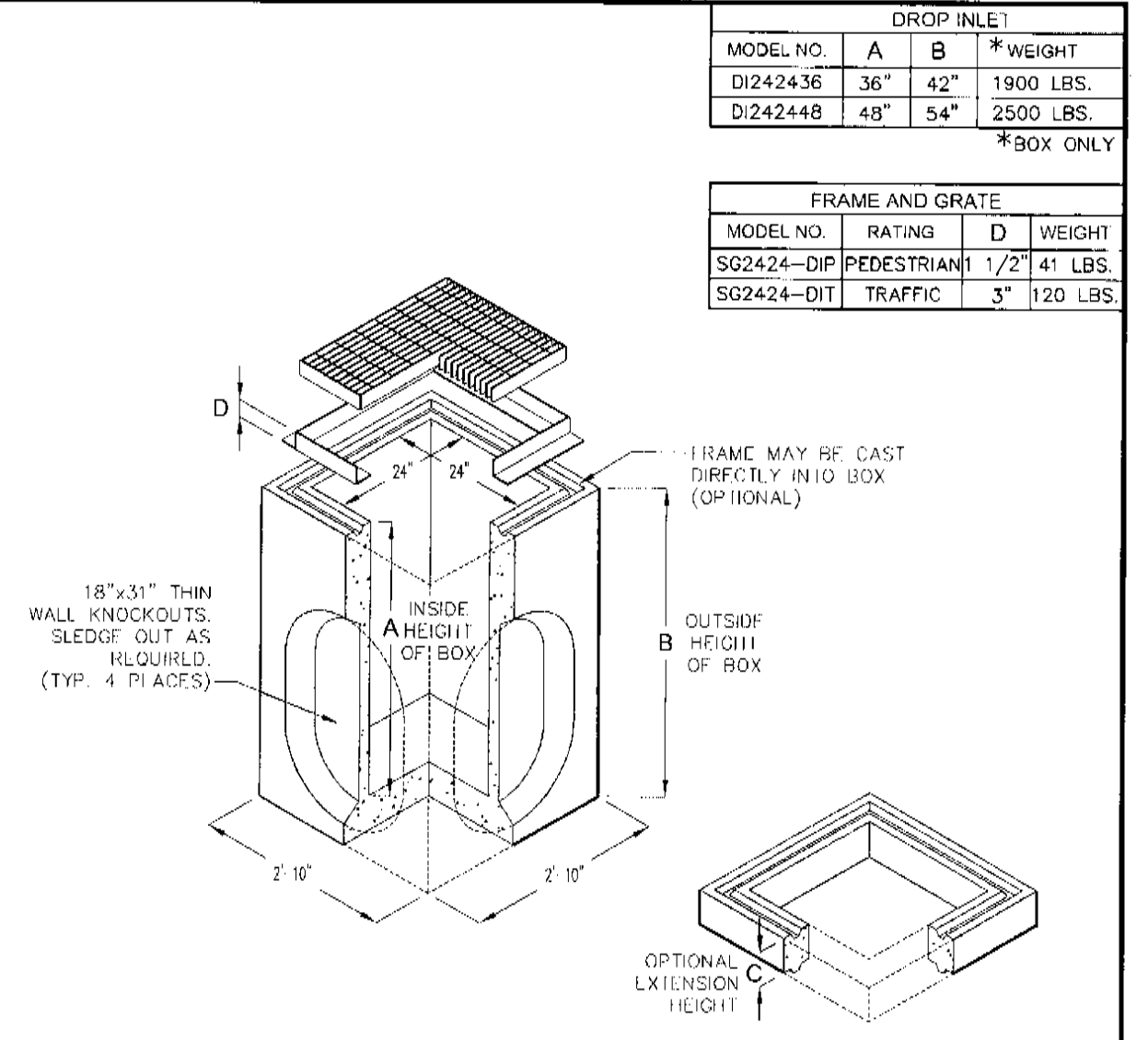
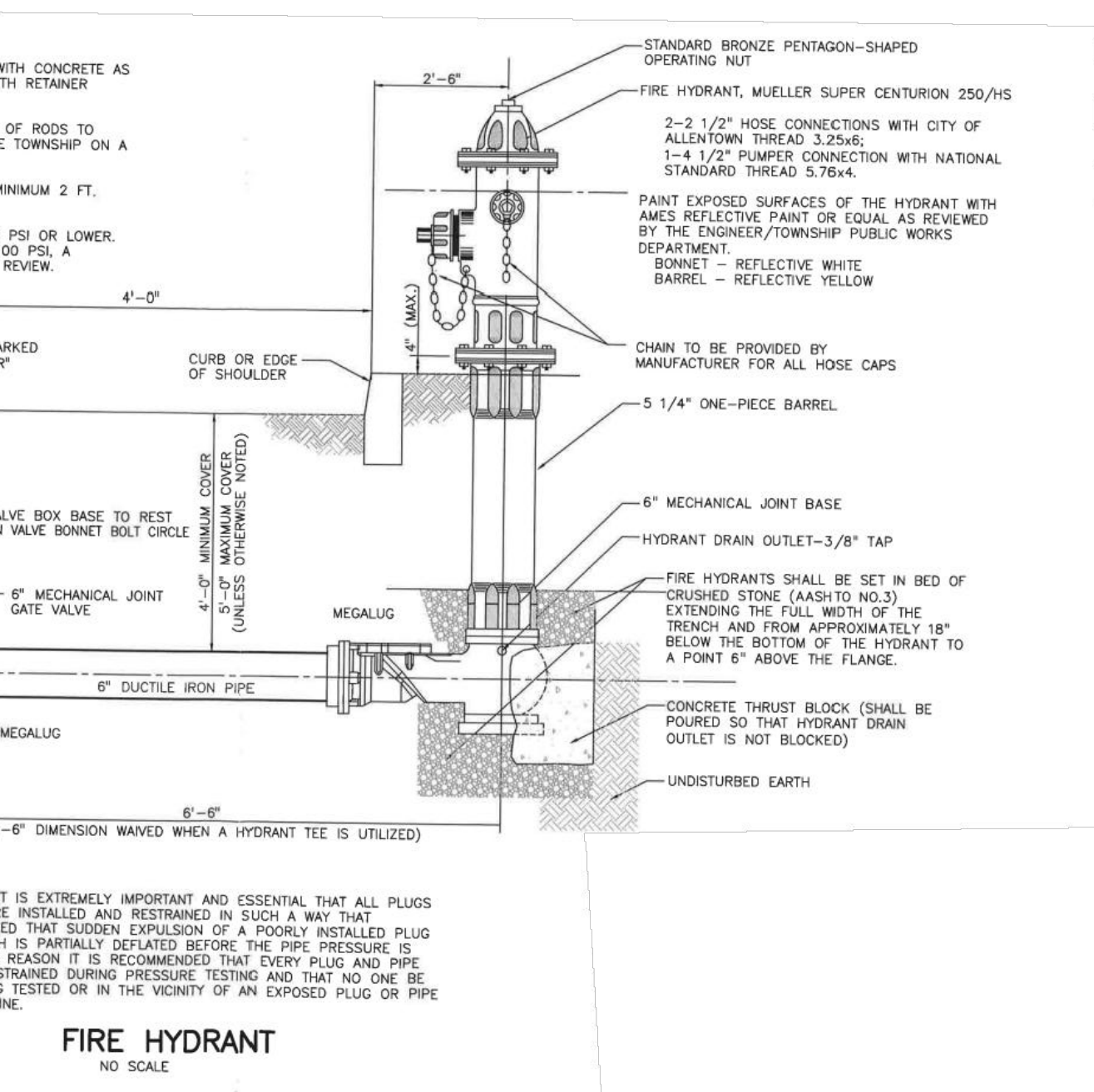
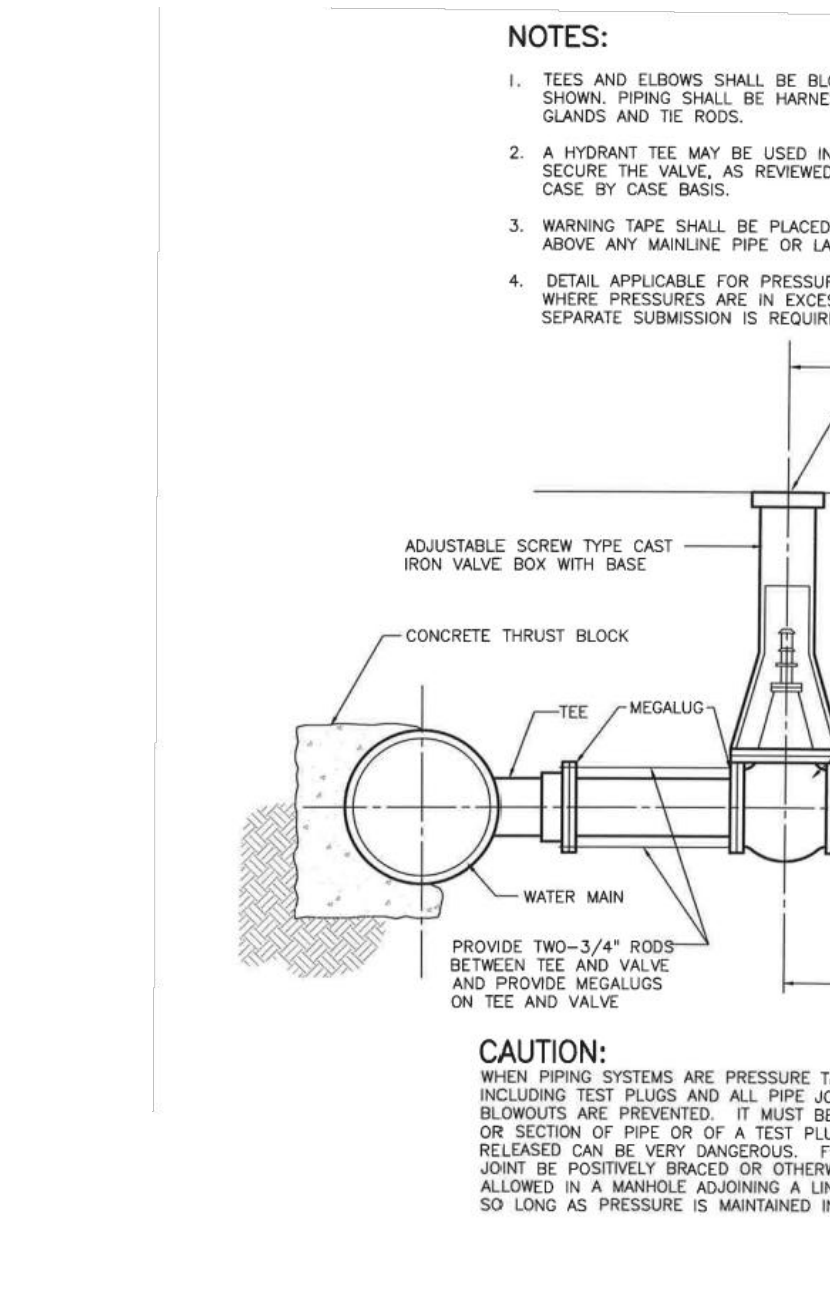
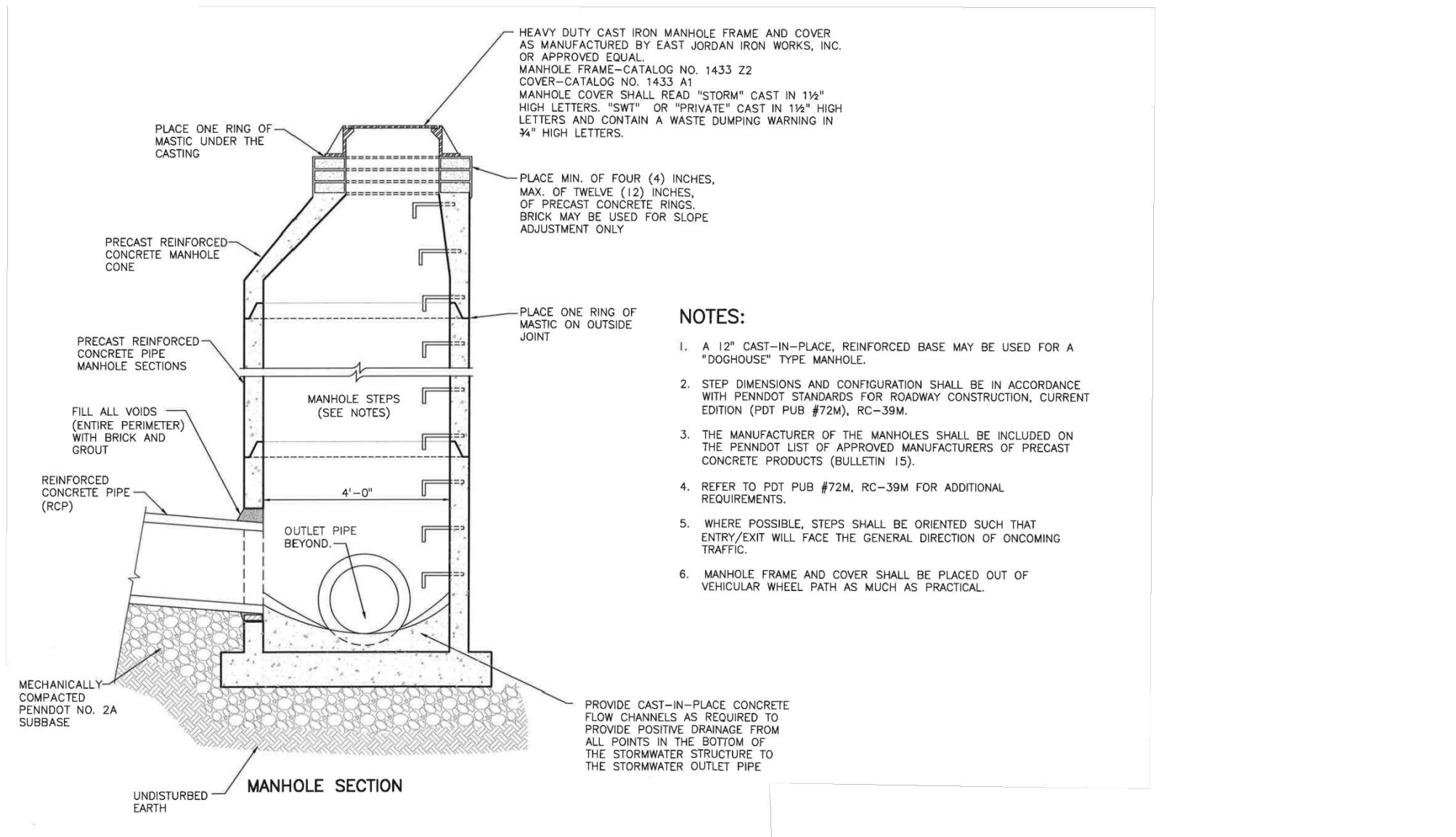
CONSTRUCTION DETAILS											
RUHE MINOR SUBDIVISION PRELIMINARY/FINAL PLAN 2442 HUCKLEBERRY ROAD											
SOUTH WHITEHALL TOWNSHIP LEHIGH COUNTY, PENNSYLVANIA											
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SHEET:	15 OF 23										
REVISIONS	<table border="1"> <tr> <th>BY</th> <th>DATE</th> </tr> <tr> <td>MSN</td> <td>06/16/2021</td> </tr> <tr> <td>MSN</td> <td>12/16/2021</td> </tr> <tr> <td>IMK</td> <td>09/20/2023</td> </tr> <tr> <td>IMK</td> <td>11/17/2023</td> </tr> </table>	BY	DATE	MSN	06/16/2021	MSN	12/16/2021	IMK	09/20/2023	IMK	11/17/2023
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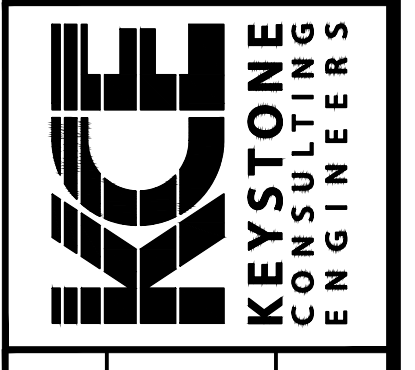
CAUTION: WHEN PIPING SYSTEMS ARE PRESSURE TESTED, IT IS EXTREMELY IMPORTANT AND ESSENTIAL THAT ALL PLUGS INCLUDING TEST PLUGS AND ALL PIPE JOINTS ARE INSTALLED AND RESTRAINED IN SUCH A WAY THAT BLOWOUTS ARE PREVENTED. IT MUST BE REALIZED THAT SUDDEN EXPLOSION OF A POORLY INSTALLED PLUG OR SECTION OF PIPE OR OF A TEST PLUG WHICH IS PARTIALLY DEFLECTED BEFORE THE PIPE PRESSURE IS RELEASED CAN BE VERY DANGEROUS. FOR THIS REASON IT IS RECOMMENDED THAT EVERY PLUG AND PIPE JOINT BE POSITIVELY BRACED OR OTHERWISE RESTRAINED DURING PRESSURE TESTING AND THAT NO ONE BE ALLOWED IN A MANHOLE ADJOINING A LINE BEING TESTED OR IN THE VICINITY OF AN EXPOSED PLUG OR PIPE SO LONG AS PRESSURE IS MAINTAINED IN THE LINE.

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NOTE: DETAIL APPLICABLE FOR PRESSURES 100 PSI OR LOWER, WHERE PRESSURES ARE IN EXCESS OF 100 PSI, A SEPARATE SUBMISSION IS REQUIRED FOR REVIEW.



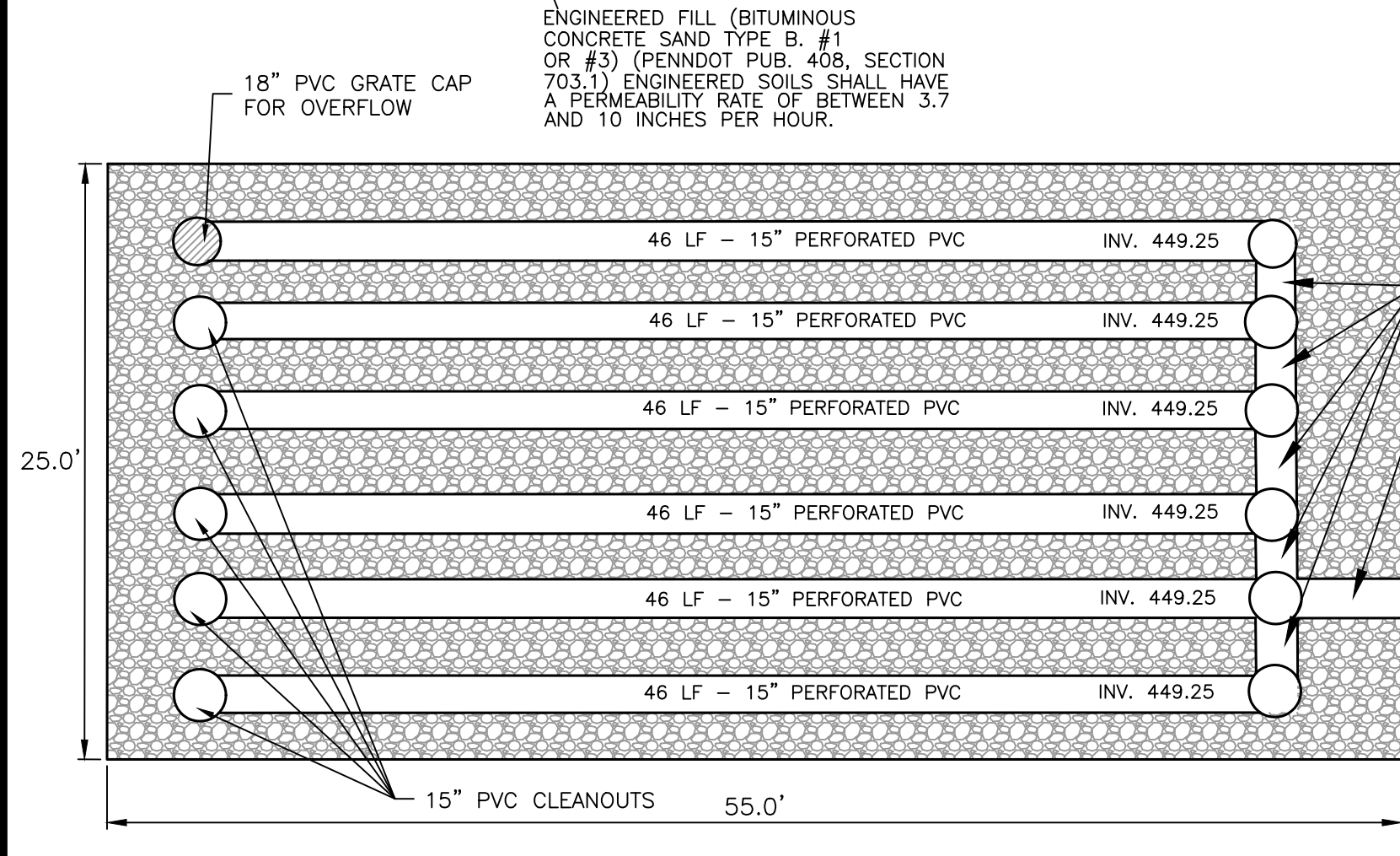
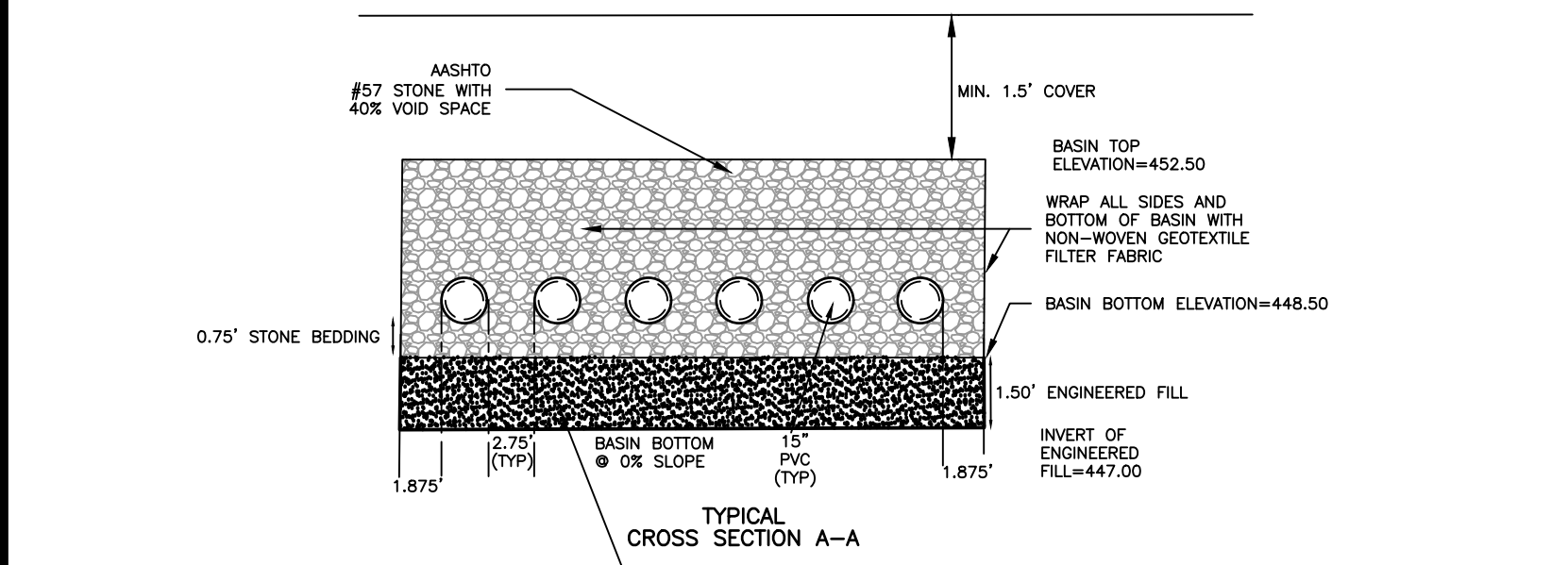
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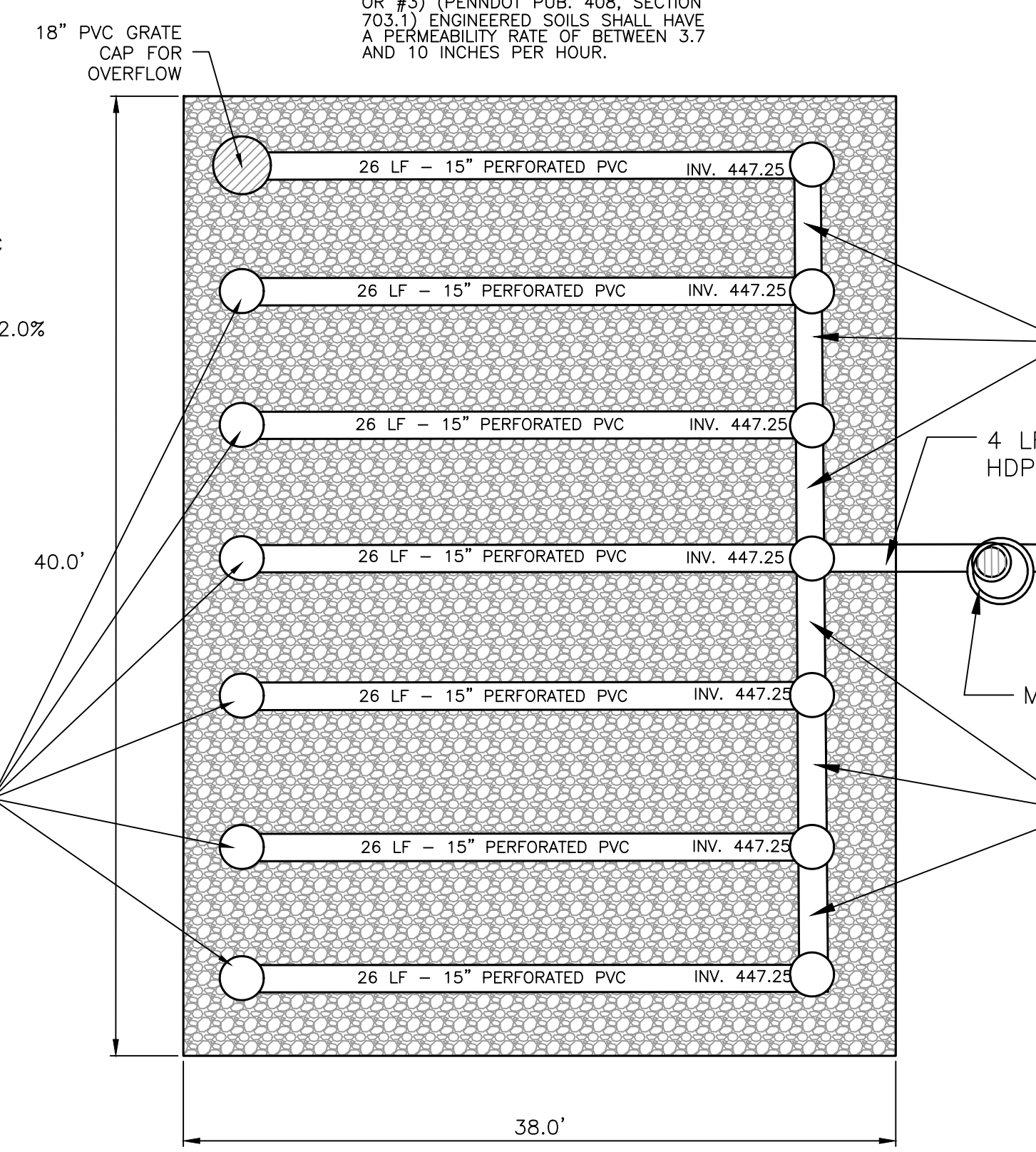
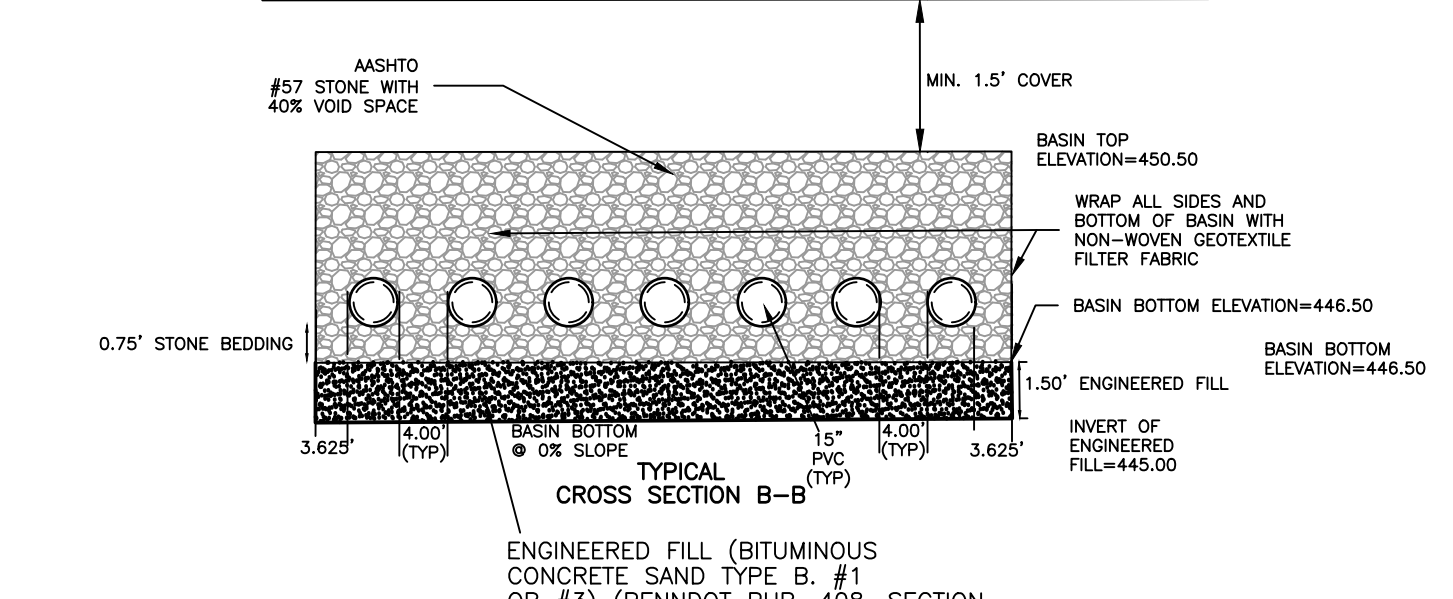
UTILITY DETAILS
RUIE MINOR SUBDIVISION
PRELIMINARY/FINAL PLAN
 2442 HUCKLEBERRY ROAD
 SOUTH WHITEHALL TOWNSHIP
 LEHIGH COUNTY, PENNSYLVANIA

DESIGNED BY:	KCE
DRAWN BY:	MFC/ARF
CHECKED BY:	March 05, 2021
DATE:	N.T.S.
SCALE:	CW-20-128
JOB NUMBER:	16 OF 23
SHEET:	

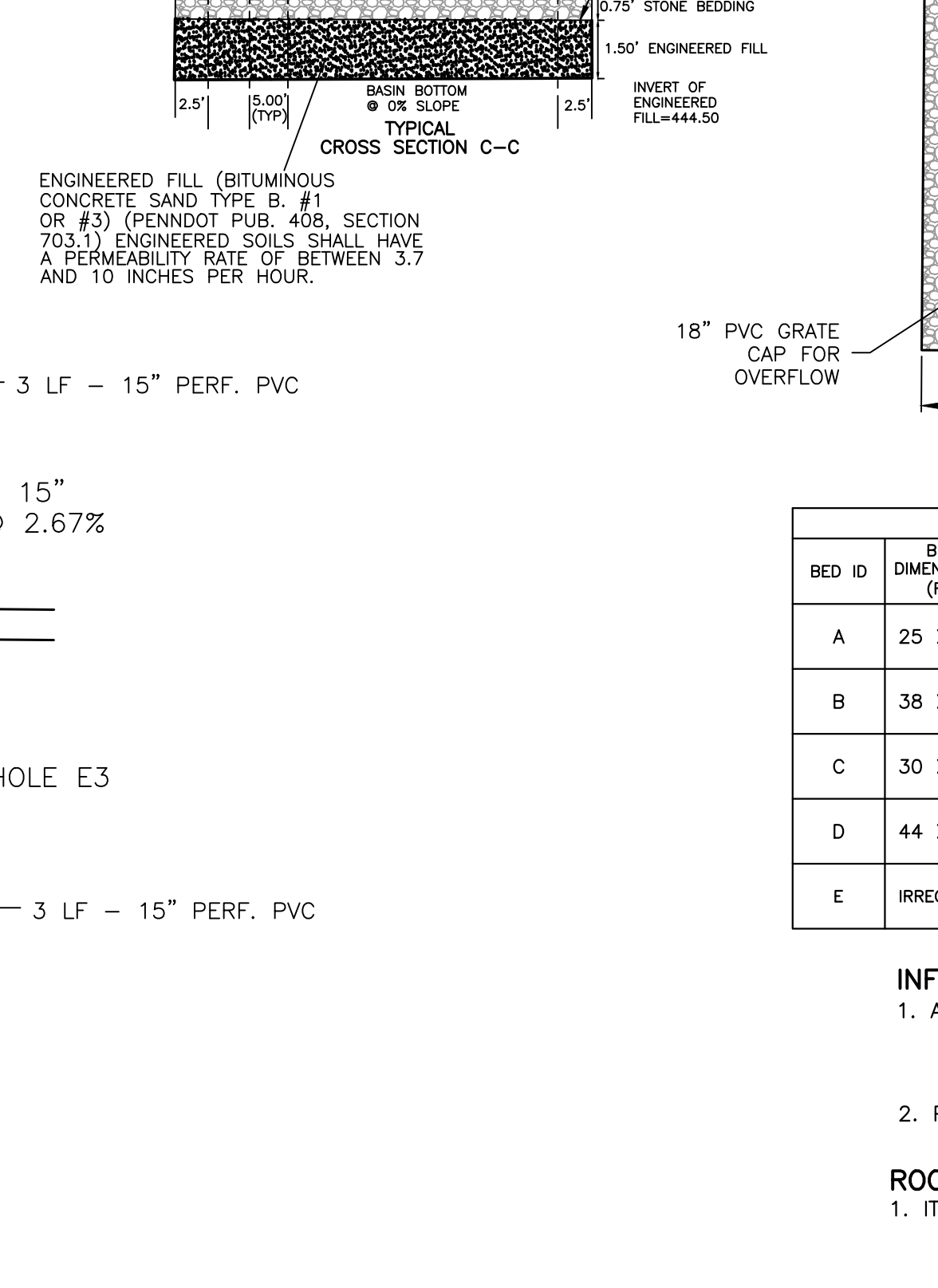
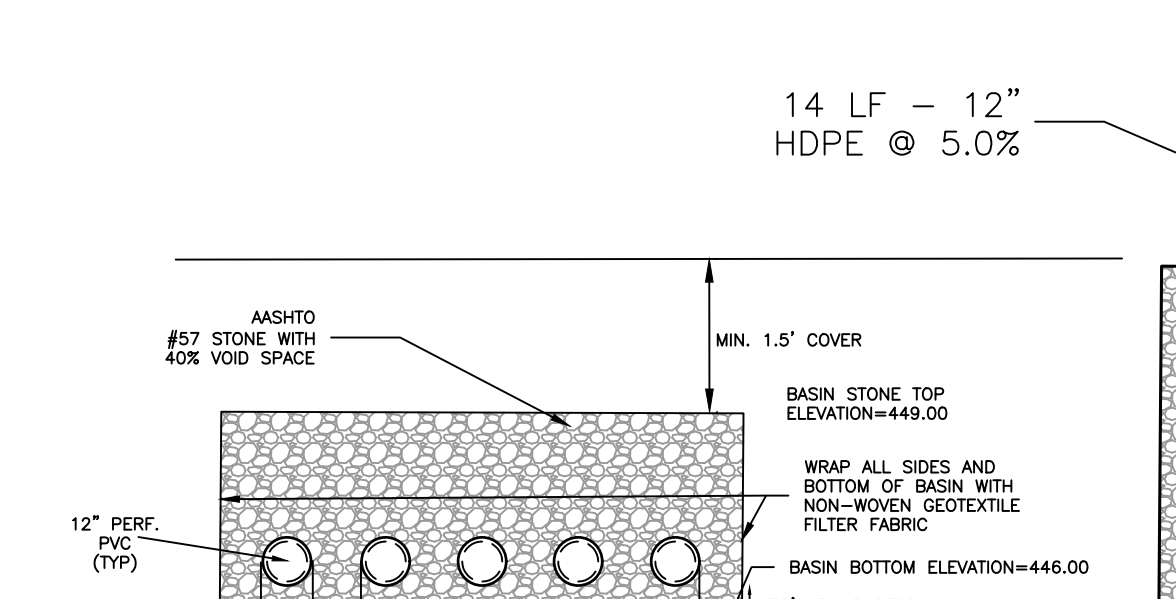
REVISIONS	BY	DATE
	MSN	06/16/2021
	MSN	12/16/2021
	IMK	09/20/2023
	IMK	11/17/2023



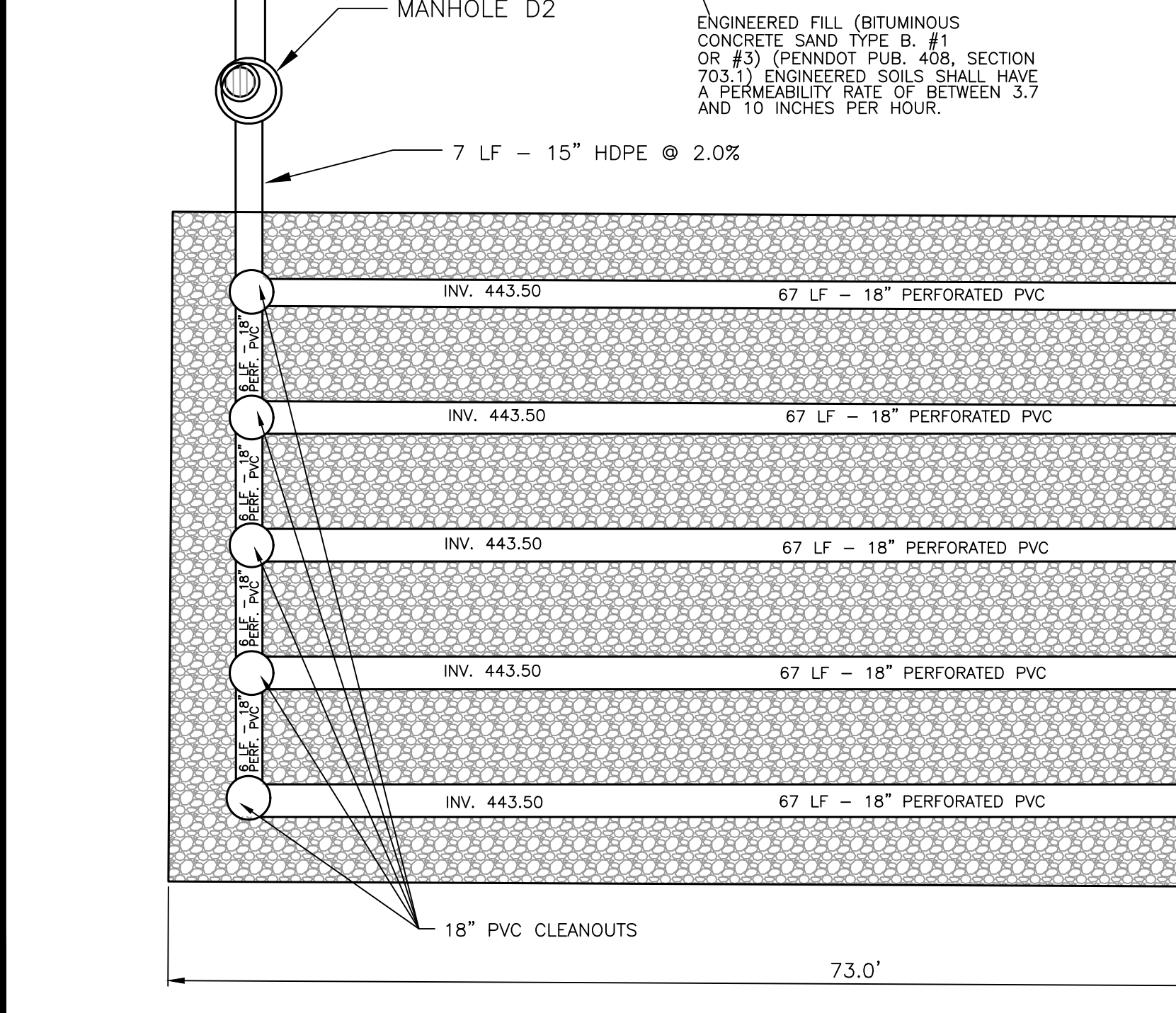
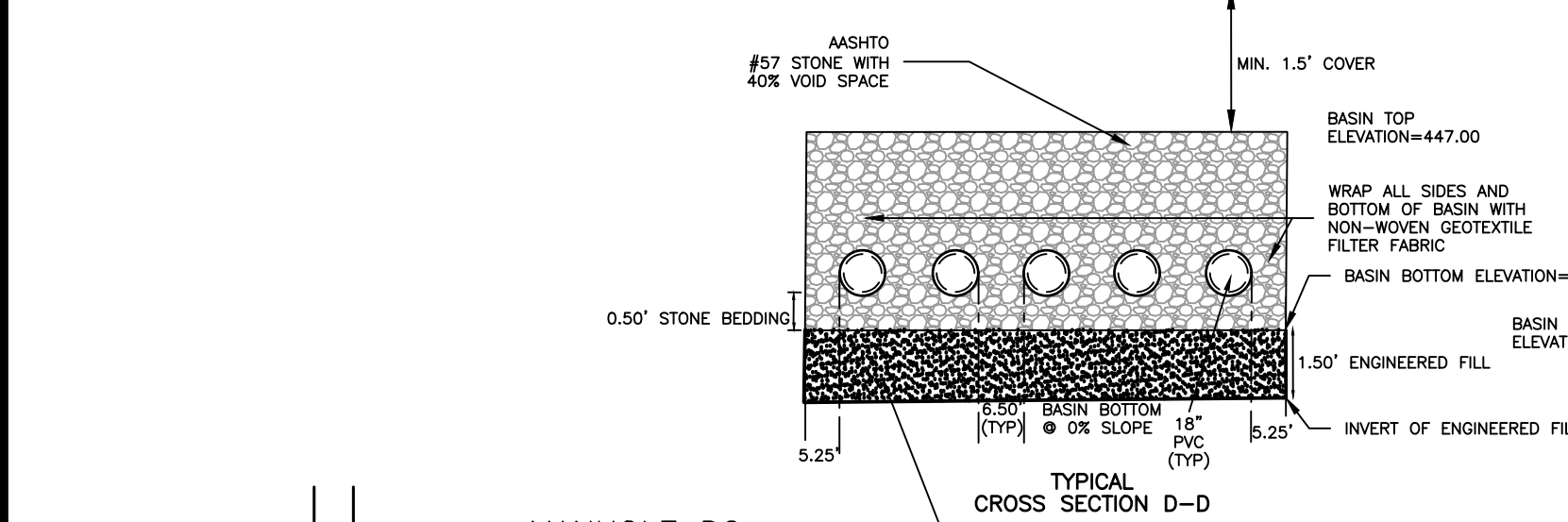
UNDERGROUND SEEPAGE BED A DETAIL
N.T.S.
BASIN BOTTOM AREA 1375 SQ.FT.



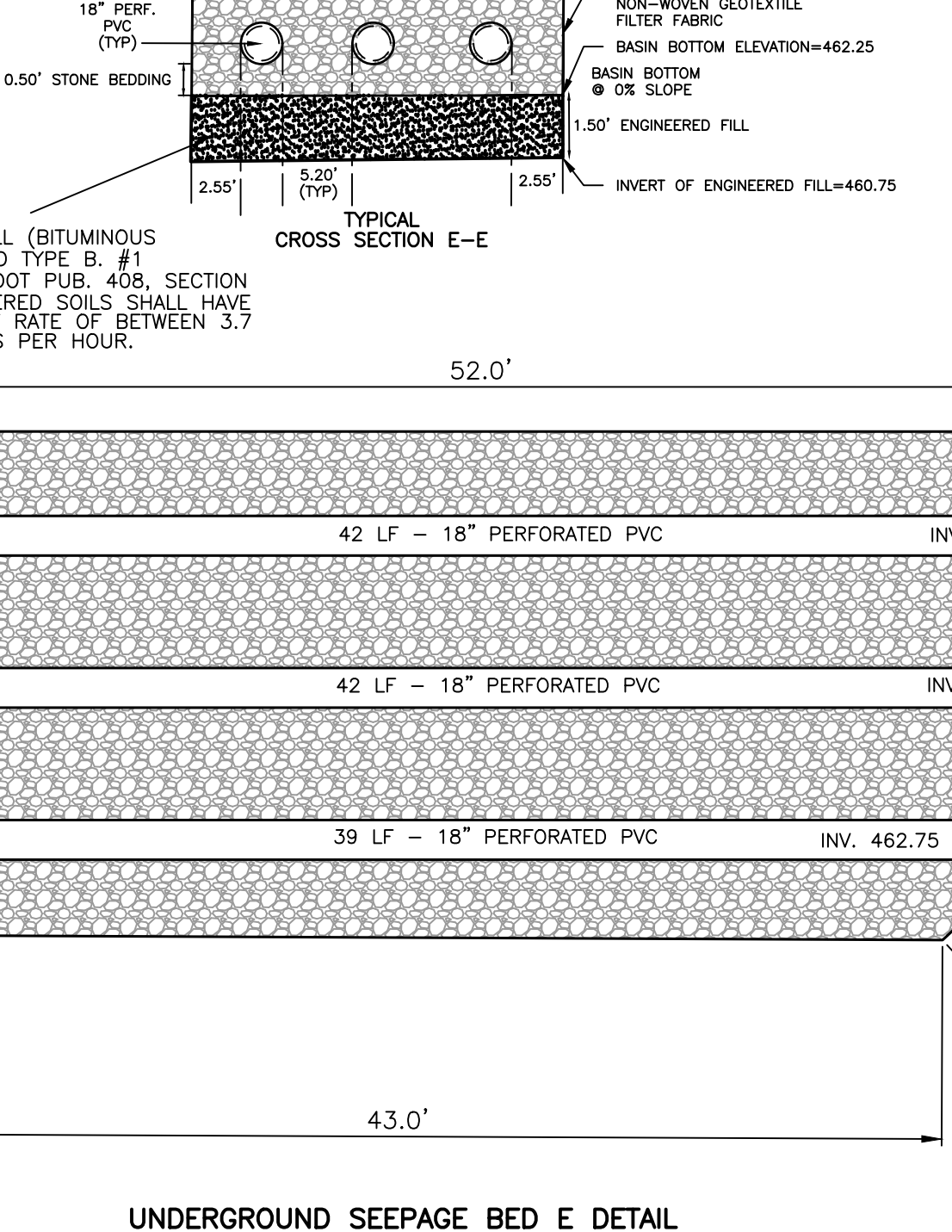
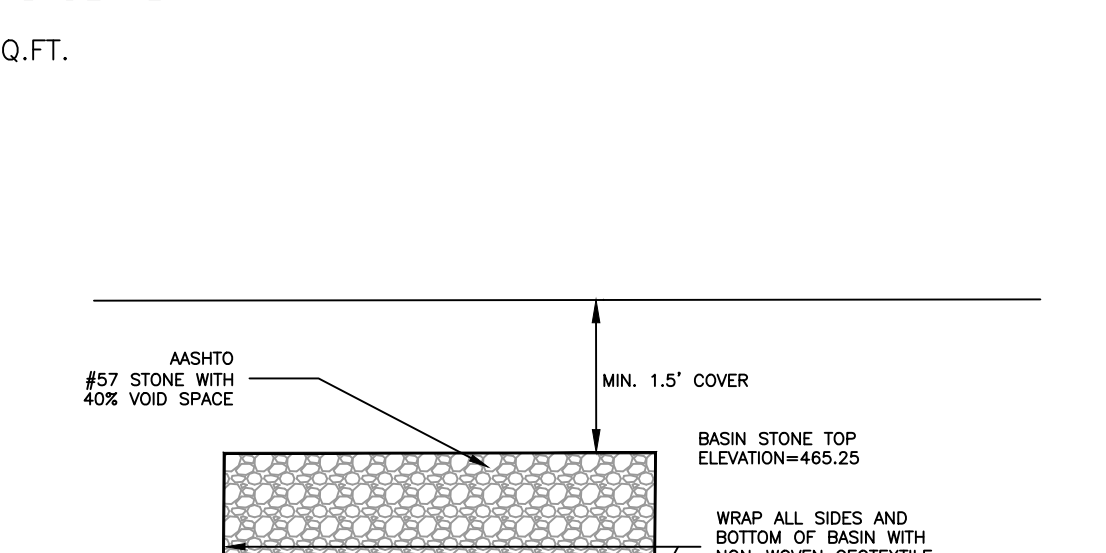
UNDERGROUND SEEPAGE BED B DETAIL
N.T.S.
BASIN BOTTOM AREA 1520 SQ.FT.



UNDERGROUND SEEPAGE BED C DETAIL
N.T.S.
BASIN BOTTOM AREA 1500 SQ.FT.



UNDERGROUND SEEPAGE BED D DETAIL
N.T.S.
BASIN BOTTOM AREA 3212 SQ.FT.



UNDERGROUND SEEPAGE BED E DETAIL
N.T.S.
BASIN BOTTOM AREA 990 SQ.FT.

SEEPAGE BED DETAIL										
BED ID	BED DIMENSIONS (FT)	INFILTRATION BED FOOTPRINT (SQ.FT.)	STONE DEPTH (D) (FT)	ENGINEERED FILL DEPTH (FT)	DISTRIBUTION PIPE SIZE (IN)	INFILTRATION BED BOTTOM ELE.	ENGINEERED FILL INV. ELE.	DISTRIBUTION PIPE INV. ELE.	TEST ID	TEST ELE.
A	25 X 55	1375	4.0	1.5	15	448.50	447.00	449.25	1B(1&2)	448.50
B	38 X 40	1520	4.0	1.5	15	446.50	445.00	447.25	1A(1&2)	446.00
C	30 X 50	1500	3.0	1.5	12	446.00	444.50	446.50	3A/3B	445.50
D	44 X 73	3212	4.0	1.5	18	443.00	441.50	443.50	4B	445.10
E	IRREGULAR	990	3.0	1.5	18	462.25	460.75	462.75	1C/1D	461.50

- INFILTRATION RATE NOTES**
- ALL UNDERGROUND SEEPAGE BEDS ARE TO BE UNDERLAIN BY 18" OF ENGINEERED FILL. ONCE COMPLETED, INFILTRATION TESTS SHALL BE CONDUCTED TO VERIFY INFILTRATION RATE OF THE SEEPAGE BED MEETS OR EXCEEDS THE DESIGNED INFILTRATION RATE OF 2.5"/HOUR. THIS IS A CRITICAL STAGE AND SHOULD OVERSEEN BY A LICENSED PROFESSIONAL.
 - POST CONSTRUCTION INFILTRATION TESTING RESULTS WILL BE SENT TO THE LEHIGH COUNTY CONSERVATION DISTRICT TO VERIFY THE BEDS MEET OR EXCEED THE DESIGN INFILTRATION RATE OF 2.5"/HOUR.

- ROOF LEADER AND YARD DRAINAGE NOTES**
- IT IS THE RESPONSIBILITY OF THE DESIGN ENGINEER TO DESIGN A ROOF LEADER CONSISTENT WITH THE ACTUAL DWELLING PROPOSED FOR CONSTRUCTION ON THE INDIVIDUAL LOT GRADING PLAN. THE ROOF LEADER SYSTEM SHALL BE DESIGNED TO CAPTURE THE EQUIVALENT AMOUNT OF ROOF TOP AS SHOWN ON THE BMP DRAINAGE MAP ATTACHED TO THE APPROVED PCSM PLAN AND DIRECT THE STORM FLOWS TO THE SEEPAGE BED. THE YARD DRAINAGE SYSTEM SHALL INCLUDE APPROPRIATE GRADING AND THE 2X2 YARD INLET.
 - MODIFICATIONS TO THE APPROVED PCSM PLAN MAY BE REQUIRED BY LCDD WHEN AN EQUIVALENT TRIBUTARY AREA TO THAT WHICH IS SHOWN ON THE BMP DRAINAGE MAP IS NOT CAPTURED AND DIRECTED TO THE SEEPAGE BED.

- CONSTRUCTION NOTES**
- LEAF/DEBRIS TRAP MAY BE CONSTRUCTED OF 18" HDPE, PEP OR EQUIVALENT.
 - STONE FOR THE SEEPAGE BED SHALL BE 2 INCH TO 1 INCH UNIFORMLY GRADED COARSE AGGREGATE, WITH A WASH LOSS OF NO MORE THAN 0.5 ASHTO SIZE NUMBER 3 PER ASHTO SPECIFICATIONS AND SHALL HAVE Voids EQUAL TO OR GREATER THAN 40%.
 - NON-WOVEN GEOTEXTILE SHALL CONSIST OF NEEDLED NON WOVEN POLYPROPYLENE FIBERS AND MEET THE FOLLOWING PROPERTIES:

- A. GRAB TENSILE STRENGTH (ASTM-D4632) 120 LBS.
- B. MULLEN BURST STRENGTH (ASTM-d3786) 225 PSI.
- C. FLOW RATE (ASTM-D4491) 95 GAL/MIN/SF
- D. UV RESISTANCE AFTER 500 HRS (ASTM D4355) 70
- E. HEAT SET OR HEAT CALENDARED FABRICS ARE NO PERMITTED. ACCEPTABLE TYPES INCLUDE MIRAFI 140n, AMOCO 4547, AND GEOTEX 451

- SEEPAGE BED NOTES**
- THE INDIVIDUAL LOT OWNER IS RESPONSIBLE FOR THE PROPER OPERATION AND MAINTENANCE OF THE SEEPAGE BED ON HIS OR HER LOT IN PERPETUITY. THE INDIVIDUAL LOT OWNER SHALL INSPECT, CLEAN, REMOVE SILT OR OTHER DEBRIS AND OTHERWISE MAINTAIN THE CLEANOUT STRUCTURE(S) AND RECHARGE PIT(S) IN PROPER WORKING ORDER.
 - THE SEEPAGE BED SHALL BE LEVEL.
 - PIPING SHALL BE PERFORMED ONLY WITHIN THE SUBSURFACE INFILTRATION BED FOOTPRINT.

CONSTRUCTION SEQUENCE UNDERGROUND SEEPAGE BEDS

- DUE TO THE NATURE OF CONSTRUCTION SITES, SEEPAGE BEDS SHOULD BE INSTALLED TOWARD THE END OF THE CONSTRUCTION PERIOD.
- INSTALL AND MAINTAIN ADEQUATE EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION.
- THE EXISTING SUBGRADE UNDER THE BED AREAS SHOULD NOT BE COMPACTED OR SUBJECT TO EXCESSIVE EQUIPMENT TRAFFIC PRIOR TO GEOTEXTILE AND STONE BED PLACEMENT.
- WHERE EROSION OF SUBGRADE HAS CAUSED ACCUMULATION OF FINE MATERIALS AND/OR SURFACE PONDING, THIS MATERIAL SHOULD BE REMOVED WITH LIGHT EQUIPMENT AND THE UNDERLYING SOILS SCARIFIED TO A MINIMUM DEPTH OF 6" WITH A YORK RAKE OR EQUIVALENT LIGHT TRACTOR. ALL FINE GRADING SHOULD BE DONE BY HAND. ALL BED BOTTOMS SHOULD BE AT LEVEL GRADE.
- INSTALL UPSTREAM AND DOWNSTREAM CONTROL STRUCTURES, CLEANOUTS, PERFORATED PIPING, AND ALL OTHER NECESSARY STORMWATER STRUCTURES.
- GEOTEXTILE AND BED AGGREGATE SHOULD BE PLACED IMMEDIATELY AFTER APPROVAL OF SUBGRADE PREPARATION AND INSTALLATION OF STRUCTURES. GEOTEXTILE SHOULD BE PLACED IN ACCORDANCE WITH MANUFACTURERS STANDARDS AND RECOMMENDATIONS. WRAP ALL SIDES AND BOTTOM OF BASIN WITH GEOTEXTILE. ADJACENT STRIPS OF GEOTEXTILE SHOULD OVERLAP A MINIMUM OF 16 INCHES. IT SHOULD ALSO BE SECURED AT LEAST 4 FEET OUTSIDE OF BED IN ORDER TO PREVENT ANY RUNOFF OR SEDIMENT FROM ENTERING THE STORAGE BED. THIS EDGE STRIP SHOULD REMAIN IN PLACE UNTIL ALL BARE SOILS CONTIGUOUS TO THE BED IS STABILIZED AND VEGETATED. AS THE SITE IS FULLY STABILIZED, EXCESS GEOTEXTILE ALONG BED EDGES CAN BE CUT BACK TO THE EDGE OF THE BED.
- CLEAN WASHED, UNIFORMLY GRADED AGGREGATE SHOULD BE PLACED IN THE BED IN MAXIMUM 8 INCH LIFTS. EACH LAYER SHOULD BE LIGHTLY COMPACTED WITH CONSTRUCTION EQUIPMENT BEING KEPT OFF THE BED AS MUCH AS POSSIBLE.
- TOPSOIL SHOULD BE PLACED OVER THE SEEPAGE BED IN MAXIMUM 6 INCH LIFTS.
- SEED AND STABILIZE TOPSOIL.
- DO NOT REMOVE EROSION CONTROLS UNTIL SITE IS FULLY STABILIZED.

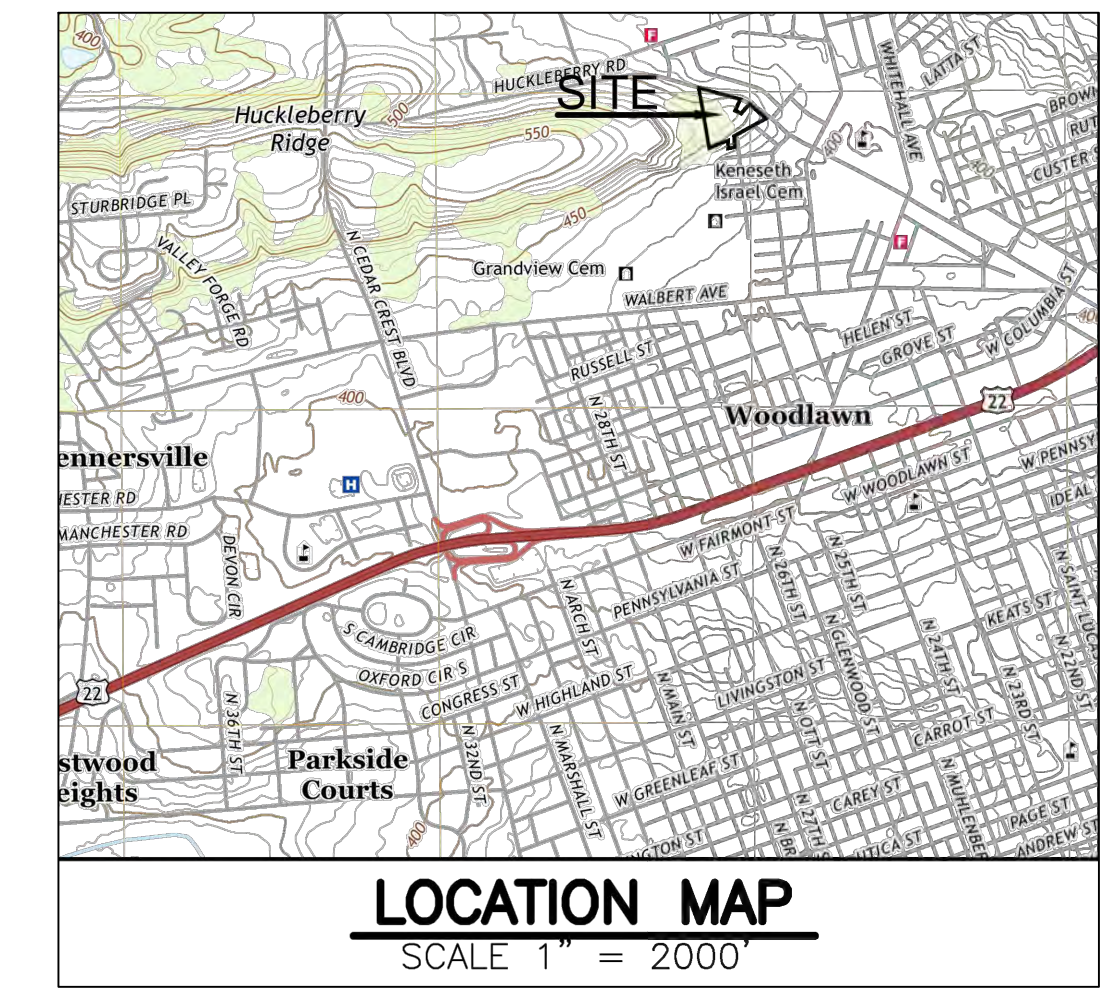
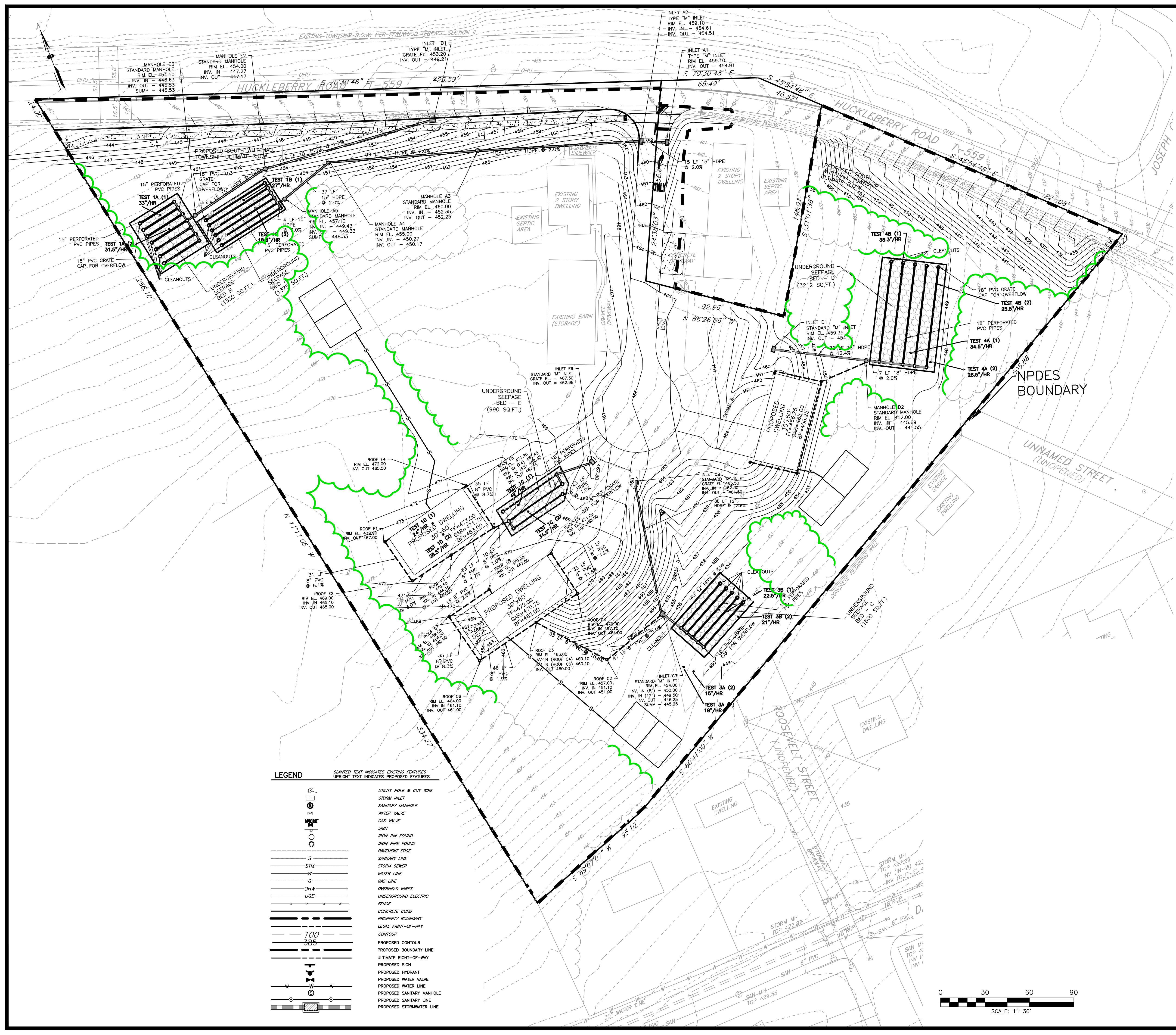
MAINTENANCE

- INSPECT UNDERGROUND SEEPAGE BED AT LEAST FOUR TIMES A YEAR, AS WELL AS AFTER EVERY STORM EXCEEDING 1 INCH.
- DISPOSE OF SEDIMENT, DEBRIS/TRASH, AND ANY OTHER WASTE MATERIAL REMOVED FROM SEEPAGE BED AT A SUITABLE DISPOSAL/RECYCLING FACILITY AND IN COMPLIANCE WITH LOCAL, STATE AND FEDERAL WASTE REGULATIONS.
- EVALUATE THE DRAIN DOWN TIME TO ENSURE THE MAXIMUM TIME OF 72 HOURS IS NOT BEING EXCEEDED. IF DRAIN DOWN TIMES AREA EXCEEDING THE MAXIMUM, DRAIN THE SEEPAGE BED VIA PUMPING AND CLEAN OUT PERFORATED PIPING. IF SLOW DRAINAGE PERSISTS, THE SYSTEM MAY NEED REPLACING.
- REGULARLY CLEAN OUT GUTTERS AND ENSURE PROPER CONNECTIONS TO FACILITATE THE EFFECTIVENESS OF THE SEEPAGE BED.
- REPLACE FILTER SCREENS THAT INTERCEPT ROOF RUNOFF AS NECESSARY.



STORMWATER DETAILS
RUIHE MINOR SUBDIVISION
PRELIMINARY/FINAL PLAN
2442 HUCKLEBERRY ROAD
SOUTH WHITEHALL TOWNSHIP
LEHIGH COUNTY, PENNSYLVANIA

DESIGNED BY:	DATE:
KCE	06/16/2021
BY:	DATE:
MSN	12/16/2021
MSN	09/20/2023
IMK	11/17/2023
IMK	
DATE:	SCALE:
March 05, 2021	N.T.S.
SCALE:	JOB NUMBER:
N.T.S.	CW-20-128
JOB NUMBER:	SHEET:
CW-20-128	17 OF 23



LEGEND

SLANTED TEXT INDICATES EXISTING FEATURES
UPRIGHT TEXT INDICATES PROPOSED FEATURES

	UTILITY POLE & GUY WIRE
	STORM INLET
	SANITARY MANHOLE
	WATER VALVE
	GAS VALVE
	SIGN
	IRON PIN FOUND
	IRON PIPE FOUND
	PAVEMENT EDGE
	SANITARY LINE
	STORM SEWER
	WATER LINE
	GAS LINE
	OVERHEAD WIRES
	UNDERGROUND ELECTRIC
	FENCE
	CONCRETE CURB
	PROPERTY BOUNDARY
	LEGAL RIGHT-OF-WAY
	CONTOUR
	PROPOSED CONTOUR
	PROPOSED BOUNDARY LINE
	ULTIMATE RIGHT-OF-WAY
	PROPOSED SIGN
	PROPOSED HYDRANT
	PROPOSED WATER VALVE
	PROPOSED MANHOLE
	PROPOSED SANITARY LINE
	PROPOSED STORMWATER LINE

SOCK NO.	Dia. In.	LOCATION	SLOPE-PERCENT	SLOPE LENGTH ABOVE BARRIER (FT)
CFS 1	24"	Lot 4	7.2%	313'
CFS 2	32"	Lot 4	50%	178'
CFS 3	12"	Lot 4	7.6%	224'
CFS 4	12"	Lot 4	9.2%	209'
CFS 5	8"	Lot 4	9.6%	187'
CFS 6	24"	Lot 3	7.2%	340'
CFS 7	8"	Lot 3	8.6%	134'
CFS 8	18"	Lot 2	50%	10'
CFS 9	5"	Lot 2	2.4%	109'
CFS 10	5"	Lot 2	7.4%	102'
CFS 11	8"	Lutz Property	5.3%	170'
CFS 12	5"	ROW 1	8.3%	84'
CFS 13	5"	ROW 1	12.7%	55'
CFS 14	18"	Lot 2	10.4%	198'

811 DIAL 8-1-1 OR 1-800-242-1776 NOT LESS THAN 3 BUSINESS DAYS NOR MORE THAN 10 BUSINESS DAYS PRIOR TO THE START OF EXCAVATION.

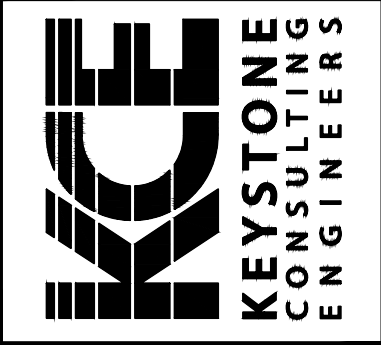
DESIGNED BY: MSN
 DRAWN BY: MFC/ARF
 CHECKED BY: EAH
 DATE: March 05, 2021
 SCALE: 1" = 30'

REVISIONS:

NO.	DATE	BY	DESCRIPTION
1	06/16/2021	EAH	MSN
2	12/16/2021	EAH	IMK
3	09/20/2023	IMK	IMK
4	11/17/2023	IMK	IMK

JOB NUMBER: CW-20-128
 SHEET: 18 OF 23

KEYSTONE CONSULTING ENGINEERS, INC.
 Engineering firm of choice since 1972
 5012 MEDICAL CENTER CIRCLE, ALLENTOWN, PA 18106 610-395-0971
 East Office: Bethlehem, West Office: Allentown, North Office: Kresgeville
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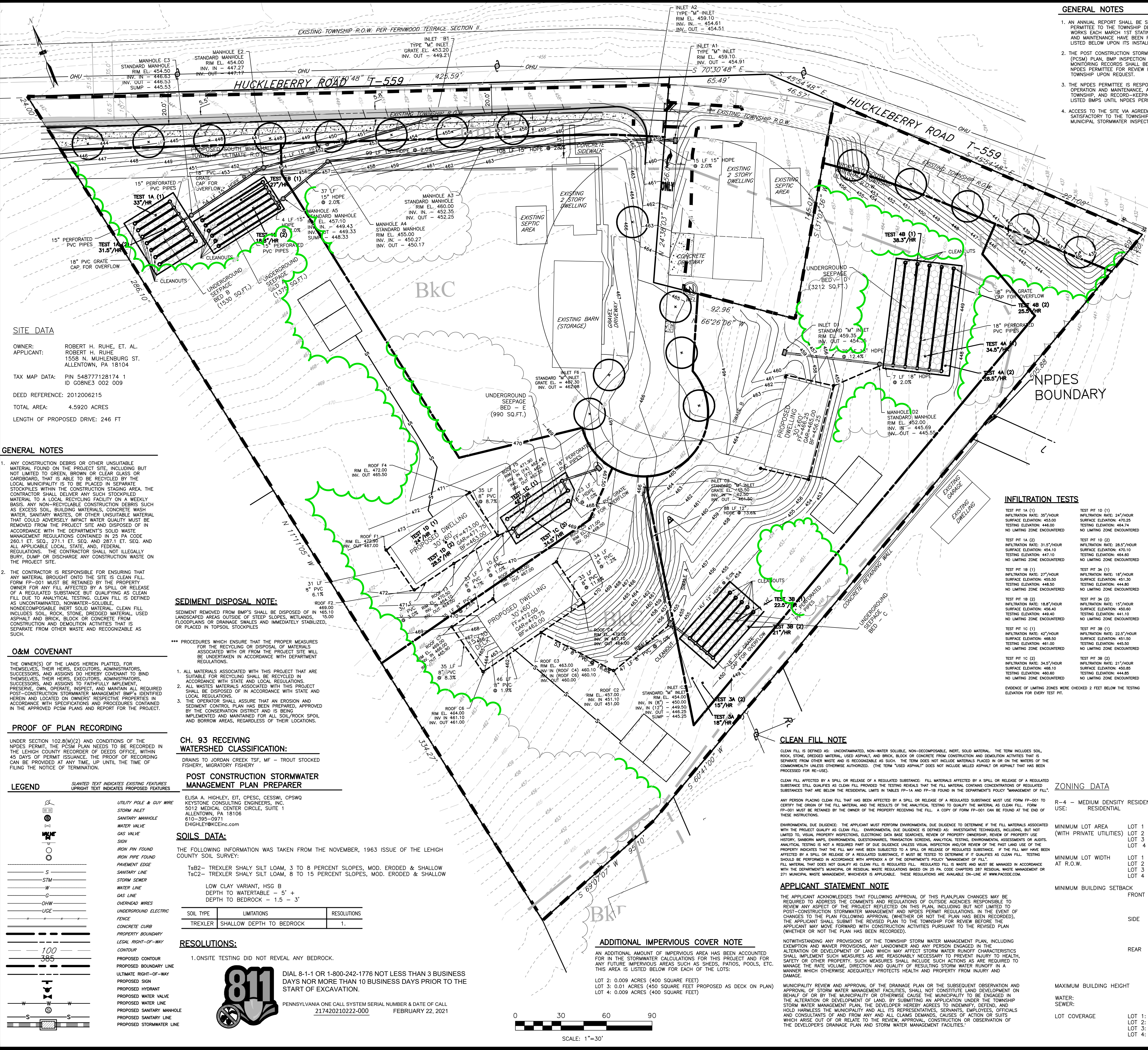
EROSION AND SEDIMENTATION PLAN
RUHE MINOR SUBDIVISION
PRELIMINARY/FINAL PLAN
 2442 HUCKLEBERRY ROAD
 SOUTH WHITEHALL TOWNSHIP
 LEHIGH COUNTY, PENNSYLVANIA

DESIGNED BY: KCE
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3	09/20/2023	IMK	IMK
4	11/17/2023	IMK	IMK

JOB NUMBER: CW-20-128
 SHEET: 18 OF 23



SITE DATA

APPLICANT: ROBERT H. RUHE, ET AL.
 ROBERT H. RUHE
 1558 N. MUEHLBURG ST.
 ALLENTOWN, PA 18104

TAX MAP DATA: PIN 54877128174 1
 ID G08N3 002 009

DEED REFERENCE: 2012006215

TOTAL AREA: 4.5920 ACRES

LENGTH OF PROPOSED DRIVE: 246 FT

GENERAL NOTES

- ANY CONSTRUCTION DEBRIS OR OTHER UNSUITABLE MATERIAL FOUND ON THE PROJECT SITE, INCLUDING BUT NOT LIMITED TO GREEN, BROWN OR CLEAR GLASS OR CARDBOARD, THAT IS ABLE TO BE RECYCLED BY THE LOCAL MUNICIPALITY IS TO BE PLACED IN SEPARATE STOCKPILES WITHIN THE CONSTRUCTION STAGING AREA. THE CONTRACTOR SHALL DELIVER ANY SUCH STOCKPILED MATERIAL TO A LOCAL RECYCLING FACILITY ON A WEEKLY BASIS. ANY NON-RECYCLABLE CONSTRUCTION DEBRIS SUCH AS EXCESS SOIL, BUILDING MATERIALS, CONCRETE WASH WATER, SANITARY WASTES, OR OTHER UNSUITABLE MATERIAL THAT COULD ADVERSELY IMPACT WATER QUALITY MUST BE REMOVED FROM THE PROJECT SITE AND DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS CONTAINED IN 25 PA CODE 290.1 ET. SEQ. AND 287.1 ET. SEQ. AND ALL APPLICABLE LOCAL, STATE, AND FEDERAL REGULATIONS. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP OR DISCHARGE ANY CONSTRUCTION WASTE ON THE PROJECT SITE.
- THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ONTO THE SITE IS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL. DUE TO ANALYTICAL TESTING, CLEAN FILL IS DEFINED AS UNCONTAMINATED, NONWATER-SOLUBLE, NONDECOMPOSABLE INERT SOLID MATERIAL. CLEAN FILL INCLUDES SOIL, ROCK, STONE, DREDGED MATERIAL, USED ASPHALT AND BRICK, BLOCK OR CONCRETE FROM CONSTRUCTION AND DEMOLITION ACTIVITIES THAT IS SEPARATE FROM OTHER WASTE AND RECOGNIZABLE AS SUCH.

SEDIMENT DISPOSAL NOTE:

SEDIMENT REMOVED FROM BMP'S SHALL BE DEPOSITED IN LANDSCAPED AREAS OUTSIDE OF STEEP SLOPES, WETLANDS, FLOODPLAINS OR DRAINAGE SWALES AND IMMEDIATELY STABILIZED, OR PLACED IN TOPSOIL STOCKPILES

O&M COVENANT

THE OWNER(S) OF THE LANDS HEREBY PLATTED, FOR THEMSELVES, THEIR HEIRS, EXECUTORS, ADMINISTRATORS, SUCCESSORS, AND ASSIGNS DO HEREBY COVENANT TO BIND THEMSELVES, THEIR HEIRS, EXECUTORS, ADMINISTRATORS, SUCCESSORS, AND ASSIGNS TO FAITHFULLY IMPLEMENT, PRESERVE, OWN, OPERATE, INSPECT, AND MAINTAIN ALL REQUIRED POST-CONSTRUCTION STORMWATER MANAGEMENT BMP'S IDENTIFIED HEREIN AND LOCATED ON OWNERS' RESPECTIVE PROPERTIES IN ACCORDANCE WITH SPECIFICATIONS AND PROCEDURES CONTAINED IN THE APPROVED PCSM PLANS AND REPORT FOR THE PROJECT.

PROOF OF PLAN RECORDING

UNDER SECTION 102.8(M)(2) AND CONDITIONS OF THE NPDES PERMIT, THE PCSM PLAN NEEDS TO BE RECORDED IN THE LEHIGH COUNTY RECORDER OF DEEDS OFFICE, WITHIN 45 DAYS OF PERMIT ISSUANCE. THE PROOF OF RECORDING CAN BE PROVIDED AT ANY TIME, UP UNTIL THE TIME OF FILING THE NOTICE OF TERMINATION.

LEGEND

SLANTED TEXT INDICATES EXISTING FEATURES
 UPRIGHT TEXT INDICATES PROPOSED FEATURES

UTILITY POLE & GUY WIRE
 STORM INLET
 SANITARY MANHOLE
 WATER VALVE
 FENCE
 IRON PIN FOUND
 IRON PIPE FOUND
 PAVEMENT EDGE
 SANITARY LINE
 STORM SEWER
 WATER LINE
 GAS LINE
 OVERHEAD WIRES
 UNDERGROUND ELECTRIC FENCE
 CONCRETE CURB
 PROPERTY BOUNDARY
 LEGAL RIGHT-OF-WAY
 CONTOUR
 PROPOSED CONTOUR
 PROPOSED BOUNDARY LINE
 ULTIMATE RIGHT-OF-WAY
 PROPOSED SIGN
 PROPOSED HYDRANT
 PROPOSED WATER VALVE
 PROPOSED WATER LINE
 PROPOSED SANITARY MANHOLE
 PROPOSED SANITARY LINE
 PROPOSED STORMWATER LINE

CH. 93 RECEIVING WATERSHED CLASSIFICATION:

DRAINS TO JORDAN CREEK TSP, MF - TROUT STOCKED FISHERY, MIGRATORY FISHERY

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN PREPARER

ELISA A. HIGHLEY, EIT, CPESC, CESSM, CPSWQ
 KEYSTONE CONSULTING ENGINEERS, INC.
 5012 MEDICAL CENTER CIRCLE, SUITE 1
 ALLENTOWN, PA 18106
 610-395-0971
 EHIGHLEY@KCEINC.COM

SOILS DATA:

THE FOLLOWING INFORMATION WAS TAKEN FROM THE NOVEMBER, 1963 ISSUE OF THE LEHIGH COUNTY SOIL SURVEY:

T9B2 - TREXLER SHALY SILT LOAM, 3 TO 8 PERCENT SLOPES, MOD. ERODED & SHALLOW
 T9C2 - TREXLER SHALY SILT LOAM, 8 TO 15 PERCENT SLOPES, MOD. ERODED & SHALLOW

LOW CLAY VARIANT, HSG B
 DEPTH TO WATER TABLE - 5' ±
 DEPTH TO BEDROCK - 1.5 - 3'

RESOLUTIONS:

1. ONSITE TESTING DID NOT REVEAL ANY BEDROCK.

DIAL 8-1-1 OR 1-800-242-1776 NOT LESS THAN 3 BUSINESS DAYS NOR MORE THAN 10 BUSINESS DAYS PRIOR TO THE START OF EXCAVATION.

PENNSYLVANIA ONE-CALL SYSTEM SERIAL NUMBER & DATE OF CALL
 217420210222-000 FEBRUARY 22, 2021

PROCEDURES WHICH ENSURE THAT THE PROPER MEASURES FOR THE RECYCLING OR DISPOSAL OF MATERIALS ASSOCIATED WITH OR FROM THE PROJECT SITE WILL BE UNDERTAKEN IN ACCORDANCE WITH DEPARTMENT REGULATIONS:

- ALL MATERIALS ASSOCIATED WITH THIS PROJECT THAT ARE SUITABLE FOR RECYCLING SHALL BE RECYCLED IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS.
- ALL WASTE MATERIALS ASSOCIATED WITH THIS PROJECT SHALL BE DEPOSITED OF IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS.
- THE OPERATOR SHALL ASSURE THAT AN EROSION AND SEDIMENT CONTROL PLAN HAS BEEN PREPARED, APPROVED BY THE CONSERVATION DISTRICT AND IS BEING IMPLEMENTED AND MAINTAINED FOR ALL SOIL/ROCK SPOIL AND BORROW AREAS, REGARDLESS OF THEIR LOCATIONS.

CLEAN FILL NOTE

CLEAN FILL IS DEFINED AS: UNCONTAMINATED, NON-WATER SOLUBLE, NON-DECOMPOSABLE, INERT, SOLID MATERIAL. THE TERM INCLUDES SOIL, ROCK, STONE, DREDGED MATERIAL, USED ASPHALT AND BRICK, BLOCK OR CONCRETE FROM CONSTRUCTION AND DEMOLITION ACTIVITIES THAT IS SEPARATE FROM OTHER WASTE AND IS RECOGNIZABLE AS SUCH. THE TERM DOES NOT INCLUDE MATERIALS PLACED IN OR ON THE WATERS OF THE COMMONWEALTH UNLESS OTHERWISE AUTHORIZED. (THE TERM "USED ASPHALT" DOES NOT INCLUDE MILLED ASPHALT OR ASPHALT THAT HAS BEEN PROCESSED FOR RE-USE).

CLEAN FILL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE: FILL MATERIALS AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE SHALL QUALIFY AS CLEAN FILL PROVIDED THE TESTING REVEALS THAT THE FILL MATERIAL CONTAINS CONCENTRATIONS OF REGULATED SUBSTANCES THAT ARE BELOW THE RESIDENTIAL LIMITS IN TABLES FP-1A AND FP-1B FOUND IN THE DEPARTMENT'S POLICY "MANAGEMENT OF FILL". ANY PERSON PLACING CLEAN FILL THAT HAS BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE MUST USE FORM FP-001 TO CERTIFY THE ORDER OF THE FILL MATERIAL, AND THE RESULTS OF THE ANALYTICAL TESTING TO QUALIFY THE MATERIAL AS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE OWNER OF THE PROPERTY RECEIVING THE FILL. A COPY OF FORM FP-001 CAN BE FOUND AT THE END OF THESE INSTRUCTIONS.

ADDITIONAL IMPERVIOUS COVER NOTE

AN ADDITIONAL AMOUNT OF IMPERVIOUS AREA HAS BEEN ACCOUNTED FOR IN THE STORMWATER CALCULATIONS FOR THIS PROJECT AND FOR ANY FUTURE IMPERVIOUS AREAS SUCH AS SHEDS, PATIOS, POOLS, ETC. THIS AREA IS LISTED BELOW FOR EACH OF THE LOTS:

LOT 2: 0.009 ACRES (400 SQUARE FEET)
 LOT 3: 0.01 ACRES (450 SQUARE FEET PROPOSED AS DECK ON PLAN)
 LOT 4: 0.009 ACRES (400 SQUARE FEET)

APPLICANT STATEMENT NOTE

THE APPLICANT ACKNOWLEDGES THAT FOLLOWING APPROVAL OF THIS PLAN, PLAN CHANGES MAY BE REQUIRED TO ADDRESS THE COMMENTS AND REGULATIONS OF OUTSIDE AGENCIES RESPONSIBLE TO REVIEW ANY ASPECT OF THE PROJECT REFLECTED ON THIS PLAN, INCLUDING BUT NOT LIMITED TO POST-CONSTRUCTION STORMWATER MANAGEMENT AND NPDES PERMIT REGULATIONS. IN THE EVENT OF CHANGES TO THE PLAN FOLLOWING APPROVAL, (WHETHER OR NOT THE PLAN HAS BEEN RECORDED), THE APPLICANT SHALL SUBMIT THE REVISED PLAN TO THE TOWNSHIP FOR REVIEW BEFORE THE APPLICANT MAY MOVE FORWARD WITH CONSTRUCTION ACTIVITIES PURSUANT TO THE REVISED PLAN (WHETHER OR NOT THE PLAN HAS BEEN RECORDED).

NOTWITHSTANDING ANY PROVISIONS OF THE TOWNSHIP STORM WATER MANAGEMENT PLAN, INCLUDING EXEMPTION AND WAIVER PROVISIONS, ANY LANDOWNER AND ANY PERSON ENGAGED IN THE ALTERATION OR DEVELOPMENT OF LAND WHICH MAY AFFECT STORM WATER RUNOFF CHARACTERISTICS SHALL IMPLEMENT SUCH MEASURES AS ARE REASONABLY NECESSARY TO PREVENT INJURY TO HEALTH, SAFETY OR OTHER PROPERTY. SUCH MEASURES SHALL INCLUDE: INDUSTRY, EMPLOYERS, EMPLOYEES, OFFICIALS AND CONSULTANTS OF AND FROM ANY AND ALL CLAIMS DEMANDS, CAUSES OF ACTION OR SUITS WHICH ARISE OUT OF OR RELATE TO THE REVIEW, CONSTRUCTION, OPERATION OR OBSERVATION OF THE DEVELOPER'S DRAINAGE PLAN AND STORM WATER MANAGEMENT FACILITIES.

MUNICIPALITY REVIEW AND APPROVAL OF THE DRAINAGE PLAN OR THE SUBSEQUENT OBSERVATION AND APPROVAL OF STORM WATER MANAGEMENT FACILITIES, SHALL NOT CONSTITUTE LAND DEVELOPMENT ON BEHALF OF OR BY THE MUNICIPALITY OR OTHERWISE CAUSE THE MUNICIPALITY TO BE ENGAGED IN THE ALTERATION OR DEVELOPMENT OF LAND. BY SUBMITTING AN APPLICATION UNDER THE TOWNSHIP STORM WATER MANAGEMENT PLAN, THE DEVELOPER HEREBY AGREES TO INDUSTRY, DEFEND, AND HOLD HARMLESS THE MUNICIPALITY AND ITS REPRESENTATIVES, EMPLOYEES, EMPLOYEES, OFFICIALS AND CONSULTANTS OF AND FROM ANY AND ALL CLAIMS DEMANDS, CAUSES OF ACTION OR SUITS WHICH ARISE OUT OF OR RELATE TO THE REVIEW, CONSTRUCTION, OPERATION OR OBSERVATION OF THE DEVELOPER'S DRAINAGE PLAN AND STORM WATER MANAGEMENT FACILITIES.

ZONING DATA

R-4 - MEDIUM DENSITY RESIDENTIAL RESIDENTIAL

	REQUIRED	PROVIDED
MINIMUM LOT AREA (WITH PRIVATE UTILITIES)	LOT 1 43560 S.F. LOT 2 43560 S.F. LOT 3 43560 S.F. LOT 4 43560 S.F.	43920 S.F. 46900 S.F. 43588 S.F. 43729 S.F.
MINIMUM LOT WIDTH AT R.O.W.	LOT 1 80 FT LOT 2 80 FT LOT 3 80 FT LOT 4 80 FT	247.96 FT 149.97 FT 82.72 FT 120.51 FT
MINIMUM BUILDING SETBACK	FRONT 25 FT SIDE 10 FT REAR 30 FT	LOT 1 19 FT (EX.) LOT 2 30 FT LOT 3 413 FT LOT 4 141 FT LOT 1 30 FT LOT 2 26 FT LOT 3 10 FT LOT 4 47 FT
MAXIMUM BUILDING HEIGHT	35 FT	LOT 1 134 FT LOT 2 30 FT LOT 3 70 FT LOT 4 79 FT

WATER: PUBLIC PROPOSED
 SEWER: PRIVATE PROPOSED

LOT COVERAGE
 LOT 1: 26.2%
 LOT 2: 8.47%
 LOT 3: 6.71%
 LOT 4: 5.98%

INfiltration TESTS

TEST PIT	INfiltration RATE	SURFACE ELEVATION	TESTING ELEVATION	NO LIMITING ZONE ENCOUNTERED
TEST PIT 1A (1)	35"/HR	463.00	463.00	NO LIMITING ZONE ENCOUNTERED
TEST PIT 1A (2)	31.5"/HR	464.10	464.10	NO LIMITING ZONE ENCOUNTERED
TEST PIT 1B (1)	27"/HR	465.50	465.50	NO LIMITING ZONE ENCOUNTERED
TEST PIT 1B (2)	18.8"/HR	466.40	466.40	NO LIMITING ZONE ENCOUNTERED
TEST PIT 1C (1)	42"/HR	468.50	468.50	NO LIMITING ZONE ENCOUNTERED
TEST PIT 1C (2)	34.5"/HR	468.10	468.10	NO LIMITING ZONE ENCOUNTERED
TEST PIT 1D (1)	24"/HR	470.25	470.25	NO LIMITING ZONE ENCOUNTERED
TEST PIT 1D (2)	28.5"/HR	470.10	470.10	NO LIMITING ZONE ENCOUNTERED
TEST PIT 1E (1)	16"/HR	451.30	451.30	NO LIMITING ZONE ENCOUNTERED
TEST PIT 1E (2)	15"/HR	450.60	450.60	NO LIMITING ZONE ENCOUNTERED
TEST PIT 1F (1)	21"/HR	448.85	448.85	NO LIMITING ZONE ENCOUNTERED
TEST PIT 1F (2)	21"/HR	444.85	444.85	NO LIMITING ZONE ENCOUNTERED
TEST PIT 2A (1)	28.5"/HR	449.50	449.50	NO LIMITING ZONE ENCOUNTERED
TEST PIT 2A (2)	38.3"/HR	449.50	449.50	NO LIMITING ZONE ENCOUNTERED
TEST PIT 2B (1)	25.5"/HR	444.80	444.80	NO LIMITING ZONE ENCOUNTERED
TEST PIT 2B (2)	25.5"/HR	443.30	443.30	NO LIMITING ZONE ENCOUNTERED

GENERAL NOTES

- AN ANNUAL REPORT SHALL BE SUBMITTED BY THE NPDES PERMITTEE TO THE TOWNSHIP DEPARTMENT OF PUBLIC WORKS EACH MARCH 1ST STATING THAT THE OPERATION AND MAINTENANCE HAVE BEEN PERFORMED FOR EACH BMP LISTED BELOW UPON ITS INSTALLATION.
- THE POST CONSTRUCTION STORMWATER MANAGEMENT (PCSM) PLAN, BMP INSPECTION REPORTS, AND BMP MONITORING RECORDS SHALL BE MADE AVAILABLE BY THE NPDES PERMITTEE FOR REVIEW BY PADEP, LCDD, AND THE TOWNSHIP UPON REQUEST.
- THE NPDES PERMITTEE IS RESPONSIBLE FOR THE OPERATION AND MAINTENANCE. ANNUAL REPORT TO THE TOWNSHIP, AND RECORD-KEEPING OF MONITORING THE LISTED BMPS UNTIL NPDES PERMIT TERMINATION.
- ACCESS TO THE SITE VIA AGREEMENT AND/OR EASEMENTS SATISFACTORY TO THE TOWNSHIP SHALL BE PROVIDED FOR MUNICIPAL STORMWATER INSPECTION AND MAINTENANCE.

OWNER'S STATEMENT:

THE UNDERSIGNED IS THE OWNER, EQUITABLE OWNER, OR HAS AN OPTION OR CONDITIONAL CONTRACT OF SALE ON THE LAND PROPOSED TO BE SUBDIVIDED OR DEVELOPED AND HAS NO LITIGATION OR LIENS EXIST OR ARE PENDING ON THE SITE.

OWNER: WILLIAM H. RUHE

OWNER'S CERTIFICATION:

I BEING DULY SWORN ACCORDING TO LAW DEPOSE AND SAY THAT I AM THE SOLE OWNER OF THIS PROPERTY, IN PEACEFUL POSSESSION OF THE SAME, AND THAT THERE ARE NO SUITS PENDING AFFECTING THE TITLE THEREOF. I DO FURTHER DEPOSE AND SAY THAT I HAVE COMPLIED WITH ALL REQUIREMENTS, PROVISIONS AND CONDITIONS OF RESOLUTION 20... BY WHICH THE TOWNSHIP BOARD OF COMMISSIONERS CONDITIONALLY WAIVED THE REQUIREMENTS OF THE TOWNSHIP SUBDIVISION AND LAND DEVELOPMENT ORDINANCE FOR THE PROJECT REFLECTED ON THIS PLAN. I AGREE THAT I SHALL EXONERATE, INDEMNIFY, PROTECT, DEFEND AND SAVE HARMLESS THE TOWNSHIP FROM ANY AND ALL CLAIMS, LAWSUITS, DAMAGES AND LIABILITIES OF EVERY KIND, CHARACTER AND MANNER WHATSOEVER PERTAINING TO, RELATING TO, RESULTING FROM, CAUSED BY OR ARISING OUT OF THE TOWNSHIP'S APPROVAL OF THE WAIVER REQUEST AS EVIDENCED BY RESOLUTION 20... ALL AS MORE FULLY OUTLINED IN RESOLUTION 20... OWNER:

ADJACENT OWNER'S STATEMENT:

THE UNDERSIGNED ACKNOWLEDGES ALL IMPROVEMENTS PROPOSED ON AND AROUND THE PROPERTY AT 2436 HUCKLEBERRY ROAD ARE LIMITED TO ADJUSTMENT OF DRIVEWAY AND GRADING THE IN, HAVE BEEN AGREED UPON.

ADJACENT PROPERTY OWNER: JOHN P. LUTZ

REVIEWED BY THE LEHIGH VALLEY PLANNING COMMISSION:

COUNTY PLANNING COMMISSION STAFF PERSON: _____ DATE: _____

APPROVED BY THE SOUTH WHITEHALL TOWNSHIP PLANNING COMMISSION:

APPROVED: _____ MONTH _____ DAY _____ YEAR

TOWNSHIP PLANNING COMMISSION:

TOWNSHIP WAIVER ACKNOWLEDGEMENT:

BASED UPON AND EXPRESSLY IN RELIANCE ON THE FOREGOING CERTIFICATIONS OF THE OWNER AND DESIGN PROFESSIONAL, THE WITHIN PLAN IS ACCEPTED BY SOUTH WHITEHALL TOWNSHIP AS THE PLAN SATISFYING ALL REQUIREMENTS, PROVISIONS AND CONDITIONS OF RESOLUTION 20... COMMISSIONERS OF THE TOWNSHIP OF SOUTH WHITEHALL.

APPROVED: _____ MONTH _____ DAY _____ YEAR

PROFESSIONAL ENGINEER'S CERTIFICATION

I, ALAN R. FORNWALT, P.E., A REGISTERED PROFESSIONAL ENGINEER IN THE COMMONWEALTH OF PENNSYLVANIA, DO HEREBY CERTIFY THAT THE ACCOMPANYING APPLICATION, PLANS AND SUPPORTING DOCUMENTATION ARE TRUE AND CORRECT, TO THE BEST OF MY KNOWLEDGE.

ALAN R. FORNWALT P.E. PE 070819
 5012 MEDICAL CENTER CIRCLE, ALLENTOWN, PA 18106

LEHIGH COUNTY RECORDER OF DEEDS:

LEHIGH COUNTY OFFICIAL: _____ DATE: _____

DESIGNED BY: KCE
DRAWN BY: MSN
CHECKED BY: MFC/ARF
DATE: March 05, 2021
SCALE: 1" = 30'
JOB NUMBER: CW-20-128
SHEET: 21 OF 23

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN PRELIMINARY/FINAL PLAN

RUHE MINOR SUBDIVISION
 2442 HUCKLEBERRY ROAD
 SOUTH WHITEHALL TOWNSHIP
 LEHIGH COUNTY, PENNSYLVANIA

REVISIONS

NO.	DATE	BY	REVISION
1	6/16/2021	EAH	12/16/2021
2	12/16/2021	EAH	09/20/2023
3	09/20/2023	IMK	11/17/2023

KEYSTONE CONSULTING ENGINEERS, INC.
 Engineering firm of choice since 1972
 5012 MEDICAL CENTER CIRCLE, ALLENTOWN, PA 18106 610-395-0971
 East Office: Bethlehem, West Office: Allentown, North Office: Kresgeville
 www.KCEINC.com

81

SCALE: 1"=30'

KEYSTONE CONSULTING ENGINEERS, INC.

DESIGNED BY: KCE
DRAWN BY: MSN
CHECKED BY: MFC/ARF
DATE: March 05, 2021
SCALE: 1" = 30'
JOB NUMBER: CW-20-128
SHEET: 21 OF 23

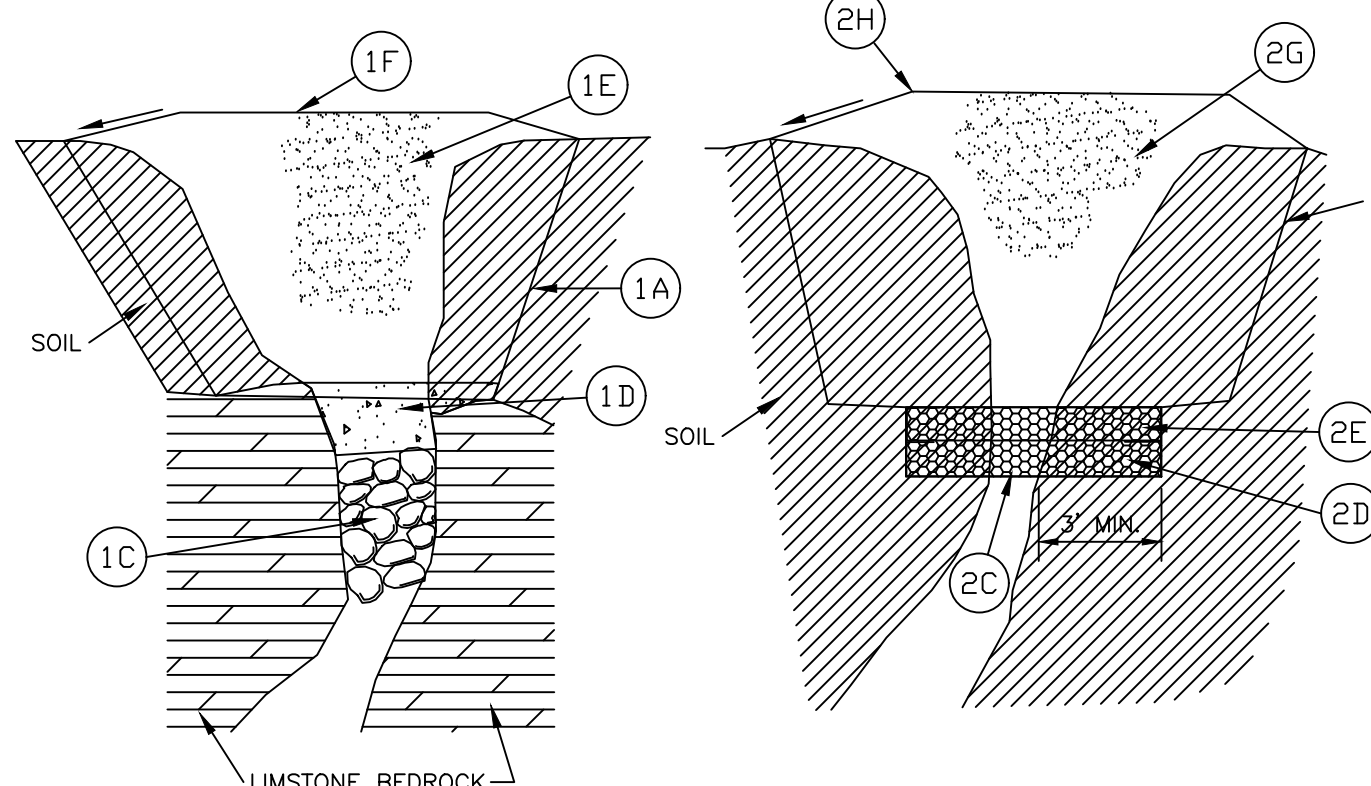
PCSM STANDARD NOTES

PERMIT TERMINATION
UPON PERMANENT STABILIZATION OF EARTH DISTURBANCE
ACTIVITIES UNDER § 102.27(A)(2) (RELATING TO PERMANENT
STABILIZATION), AND INSTALLATION OF BMPs IN ACCORDANCE
WITH AN APPROVED PLAN PREPARED AND IMPLEMENTED IN
ACCORDANCE WITH §§ 102.4 AND 102.8 (RELATING TO
EROSION AND SEDIMENT CONTROL REQUIREMENTS; AND PCSM
REQUIREMENTS), THE PERMITTEE OR CO-PERMITTEE SHALL
SUBMIT A NOTICE OF TERMINATION TO THE DEPARTMENT OR
CONSERVATION DISTRICT.

PCSM COMPLIANCE WITH §102.8(M)(2)
1. PCSM REPORTING AND RECORDKEEPING: THE PCSM
PLAN, INSPECTION REPORTS, AND MONITORING RECORDS
SHALL BE AVAILABLE FOR REVIEW AND INSPECTION BY THE
DEPARTMENT OR THE CONSERVATION DISTRICT.

FINAL CERTIFICATION: THE PERMITTEE SHALL INCLUDE
WITH THE NOTICE OF TERMINATION "RECORD DRAWINGS"
WITH A FINAL CERTIFICATION STATEMENT FROM A
LICENSED PROFESSIONAL, WHICH READS AS FOLLOWS:
"(I) (NAME) DO HEREBY CERTIFY PURSUANT TO THE
PENALTIES OF 18 Pa.C.S.A. §4024 TO THE BEST OF
MY KNOWLEDGE, INFORMATION AND BELIEF, THAT THE
ACCOMPANYING RECORD DRAWINGS ACCURATELY REFLECT
THE AS-BUILT CONDITIONS ARE TRUE AND CORRECT
AND ARE IN CONFORMANCE WITH CHAPTER 102 OF THE
RULES AND REGULATIONS OF THE DEPARTMENT OF
ENVIRONMENTAL PROTECTION AND THAT THE PROJECT
SITE WAS CONSTRUCTED IN ACCORDANCE WITH THE
APPROVED PCSM PLAN, ALL APPROVED PLAN CHANGES
AND ACCEPTED CONSTRUCTION PRACTICES."

SINKHOLE REPAIR (IF ENCOUNTERED)



GENERAL GUIDELINES FOR SINKHOLE REPAIR

- 1. ORIFICE LOCATED AND EXTENDING INTO ROCK:
A. EXCAVATE SOILS TO ROCK SURFACE. EXCAVATIONS MORE THAN 4' DEEP
SHOULD BE SHORED OR SLOPED FOLLOWING OSHA REQUIREMENTS.
B. WASH ROCK SURFACE AND CLEAN ORIFICE.
C. IF NECESSARY, PLUG ORIFICE WITH QUARRY ROCK.
D. BACKFILL ORIFICE AND A MINIMUM OF 2 FEET ABOVE ROCK SURFACE WITH HIGH
SLUMP LEAN CONCRETE (K-CRETE).
E. BACKFILL EXCAVATION WITH COMPACTED, IMPERMEABLE SOIL TO THE GROUND
SURFACE. COMPACT BACKFILL TO 95% OF DRY DENSITY.
F. PROVIDE POSITIVE SURFACE DRAINAGE.
G. CONSULT GEOLOGIST OR GEOTECHNICAL ENGINEER IF UNUSUAL
CIRCUMSTANCES ARE ENCOUNTERED.

VEGETATED SWALE SEQUENCE OF CONSTRUCTION:

- 1. BEGIN VEGETATED SWALE CONSTRUCTION ONLY WHEN TEMPORARY EROSION AND
SEDIMENT CONTROL MEASURES ARE IN PLACE. VEGETATED SWALES SHOULD BE
CONSTRUCTED AND STABILIZED EARLY IN THE CONSTRUCTION SCHEDULE, PREFERABLY
BEFORE MASS EARTHWORK AND PAVING INCREASE THE RATE AND VOLUME OF RUNOFF.
(EROSION AND SEDIMENT CONTROL METHODS SHALL ADHERE TO THE PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION'S EROSION AND SEDIMENT POLLUTION
CONTROL PROGRAM MANUAL, MARCH 2000 OR LATEST EDITION.)
2. ROUGH GRADE THE VEGETATED SWALE. EQUIPMENT SHALL AVOID EXCESSIVE
COMPACTION AND/OR LAND DISTURBANCE. EXCAVATING EQUIPMENT SHOULD OPERATE
FROM THE SIDE OF THE SWALE AND NEVER ON THE BOTTOM. IF EXCAVATION LEADS TO
SUBSTANTIAL COMPACTION OF THE SUBGRADE (WHERE AN INFILTRATION TRENCH IS NOT
PROPOSED), 18 INCHES SHALL BE REMOVED AND REPLACED WITH A BLEND OF TOPSOIL
AND SAND TO PROMOTE INFILTRATION AND BIOLOGICAL GROWTH. AT THE VERY LEAST,
TOPSOIL SHALL THOROUGHLY FLOVED INTO THE SUBGRADE IN ORDER TO PENETRATE THE
COMPACTED ZONE AND PROMOTE AERATION AND THE FORMATION OF MACROPORES.
FOLLOWING THIS, THE AREA SHOULD BE DISKED PRIOR TO FINAL GRADING OF TOPSOIL.
3. FINE GRADE THE VEGETATED SWALE. ACCURATE GRADING IS CRUCIAL FOR SWALES.
EVEN THE SMALLEST NON-CONFORMITIES MAY COMPROMISE FLOW CONDITIONS.
4. SEED, VEGETATE AND INSTALL PROTECTIVE LINING AS PER APPROVED PLANS AND
ACCORDING TO FINAL PLANTING LIST. PLANT THE SWALE AT A TIME OF YEAR WHEN
SUCCESSFUL ESTABLISHMENT WITHOUT IRRIGATION IS MOST LIKELY. HOWEVER, TEMPORARY
IRRIGATION MAY BE NEEDED IN PERIODS OF LITTLE RAIN OR DROUGHT. VEGETATION
SHOULD BE ESTABLISHED AS SOON AS POSSIBLE TO PREVENT EROSION AND SCOUR.
5. ONCE ALL TRIBUTARY AREAS ARE SUFFICIENTLY STABILIZED, REMOVE TEMPORARY
EROSION AND SEDIMENT CONTROL. IT IS VERY IMPORTANT THAT THE SWALE BE
STABILIZED BEFORE RECEIVING UPLAND STORMWATER FLOW.
6. FOLLOW MAINTENANCE GUIDELINES.

NOTE: IF A VEGETATED SWALE IS USED FOR RUNOFF CONVEYANCE DURING CONSTRUCTION,
IT SHOULD BE REGRADED AND RESEEDED IMMEDIATELY AFTER CONSTRUCTION AND
STABILIZATION HAS OCCURRED. ANY DAMAGED AREAS SHOULD BE FULLY RESTORED TO
ENSURE FUTURE FUNCTIONALITY OF THE SWALE.

BMP O&M PLAN

INLETS AND SUMPS

- 1. INSPECT INLETS AND SUMPS AT LEAST EVERY THREE MONTHS AND FOLLOWING
SIGNIFICANT RAINFALL EVENTS (PRECIPITATION ≥ 1 IN.).
2. REMOVE SEDIMENT AND DEBRIS FROM INLET SUMPS WHEN ACCUMULATIONS REACH
HALF THE DEPTH OF THE SUMP.
3. INLET SUMPS AT LEAST EVERY PER YEAR. FLUSH ANTI-SIPHON VENTS WITH WATER
TO ASSURE PROPER OPERATION.

DISPOSAL OF WASTE

- 1. RECYCLE OR DISPOSE OF ALL WASTE REMOVED FROM THE SITE IN ACCORDANCE
WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS CONTAINED IN 25
PA. CODE 260.1 ET. SEQ., 271.1 ET. SEQ. AND 287.1 ET. SEQ.
2. REDISTRIBUTE SEDIMENT FROM LAWN AND LANDSCAPED AREAS IN VEGETATED AREAS
ON THE SITE.
DO NOT ILLEGALLY BURY, DUMP OR DISCHARGE ANY WASTE ON THE PROJECT SITE.

RIP-RAP APRONS

- 1. INSPECT RIP-RAP APRONS.
2. CORRECT EROSION PROBLEMS.
3. REMOVE AND PROPERLY DISPOSE OF LITTER AND SEDIMENT.
4. PLACE ADDITIONAL ROCK AS NEEDED TO RESTORE RIP-RAP APRONS TO DESIGN
CONDITIONS.

GENERAL RECOMMENDATIONS

- FACILITY OWNERS OR OPERATORS SHALL MAINTAIN AN INSPECTION LOG DOCUMENTING
ALL INSPECTION DATES, OBSERVATIONS, AND MAINTENANCE ACTIVITIES RELATED TO
REQUIRED POST-CONSTRUCTION STORMWATER BMPs.

RECYCLING AND DISPOSAL OF MATERIALS

ANTICIPATED PROJECT WASTES INCLUDE VEGETATED WASTE, BITUMINOUS PAVEMENT, AND
CONCRETE BUILDING MATERIALS.
ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND
RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE
MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET. SEQ., 271.1, AND 287.1 ET.
SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE
BURNED, BURIED, DUMPED, OR DISCHARGED AT THIS SITE.

SEDIMENT DISPOSAL NOTE

SEDIMENT REMOVED FROM BMP'S SHALL BE DISPOSED OF IN LANDSCAPED AREAS
OUTSIDE OF DRAINAGE SWALES AND IMMEDIATELY STABILIZED, OR PLACED IN TOPSOIL
STOCKPILES
*** PROCEDURES WHICH ENSURE THAT THE PROPER MEASURES FOR THE
RECYCLING OR DISPOSAL OF MATERIALS ASSOCIATED WITH OR FROM THE
PROJECT SITE WILL BE UNDERTAKEN IN ACCORDANCE WITH DEPARTMENT
REGULATIONS.

CRITICAL STAGES OF PCSM BMP INSTALLATION

- A LICENSED PROFESSIONAL OR HIS DESIGNEE SHALL BE PRESENT ON THE PROJECT
SITE DURING THE FOLLOWING CRITICAL STAGES OF PCSM BMP INSTALLATION.
1. CONSTRUCTION AND STABILIZATION OF UNDERGROUND SEEPAGE BEDS,
CONSISTENT WITH DESIGN SPECIFICATIONS
• NOTE: REFER TO THE DETAILED SEQUENCE OF PCSM BMP INSTALLATION HEREIN
FOR ADDITIONAL INFORMATION.

SPECIFICATIONS FOR SEEDING
STABILIZATION AND SOIL SUPPLEMENTS

TEMP. NON-VEGETATIVE SURFACE STABILIZATION

TEMPORARY MULCH TYPE: HAY OR STRAW
APPLICATION RATE: 3 TONS/AC.

TEMPORARY SEED MIXTURE

PENNDOT FORMULA E PER PennDOT PUB. 408, SEC. 804
SPECIES % WEIGHT PURITY GERMINATION
ANNUAL RYEGRASS 100 98% 90%

PERMANENT SEED MIXTURE - TYPICAL

PENNDOT FORMULA B PER PennDOT PUB. 408, SEC. 804
SPECIES % WEIGHT PURITY GERMINATION
PERENNIAL RYEGRASS 20 98% 90%
CREEPING RED FESCUE 30 98% 85%
KENTUCKY BLUEGRASS 50 98% 80%

RIP-RAP APRONS - SLOPES > 3:1

PENNDOT FORMULA D PER PennDOT PUB. 408, SEC. 804
SPECIES % WEIGHT PURITY GERMINATION
TALL FESCUE 70 98% 90%
CREEPING RED FESCUE 30 98% 85%
(FESTUCA ARUNDINACEA VAR. KENTUCKY 21)

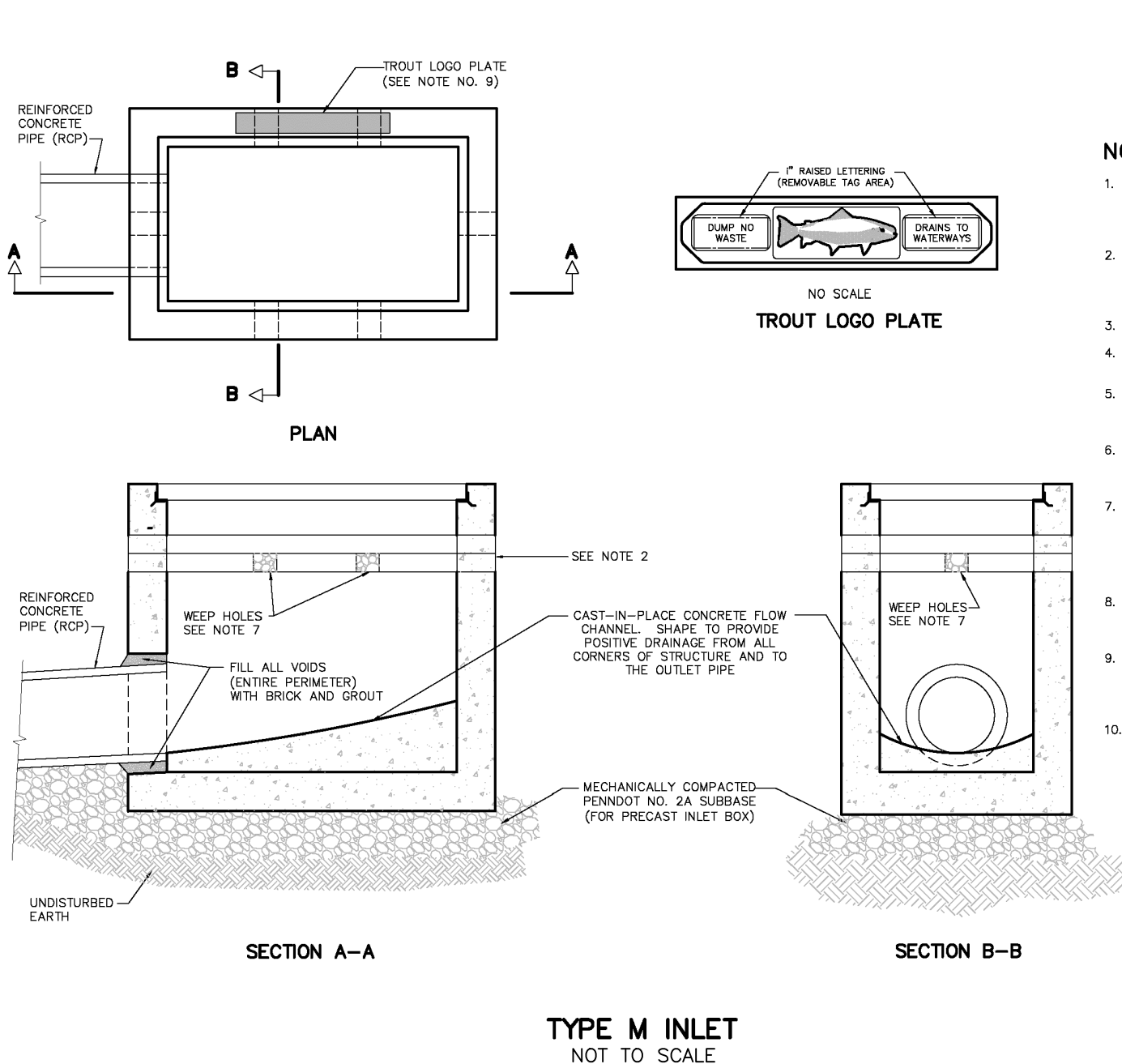
APPLICATION RATE: 22 LBS. PER 1,000 S.Y.

FERTILIZER TYPE: 10-20-20 COMMERCIAL FERTILIZER)
FERTILIZER APPLICATION RATE: 140 LBS. PER 1,000 S.Y. *
FERTILIZER TYPE: 38-0-0 (UREAFORM FERTILIZER)
FERTILIZER APPLICATION RATE: 52 LBS. PER 1,000 S.Y. *
LIME APPLICATION RATE: 830 LBS. PER 1,000 S.Y. *
MULCH: APPROVED EROSION MATTING REQUIRED
SEEDING PERIOD: MARCH 15 TO OCTOBER 15

* UNLESS TESTING HAS BEEN PERFORMED

NOTES

- 1. THE CUTOFF DATE FOR HYDROSEEDING IS NOVEMBER 15.
2. SLURRY APPLICATIONS OF SEED USING A CELLULOSE
TACKIFIER SHALL INCLUDE A STRAW MULCH BINDER AT A
RATE OF 3 TONS PER ACRE



NOTES:

- 1. CONCRETE INLET AND TOP UNITS SHALL BE AS DETAILED IN
PENNDOT STANDARDS FOR ROADWAY CONSTRUCTION, CURRENT
EDITION (DOT PUB #72M) RC-34M, "INLETS, CONCRETE TOP UNITS
CAST-IN-PLACE AND PRECAST".
2. PROVIDE A MINIMUM OF 4 INCHES AND MAXIMUM OF 8 INCHES
VERTICALLY OF PRECAST CONCRETE SOLARS WITH
THROUGH-WALL OPENINGS ADJACENT TO SUBGRADE TO SERVE AS
WEEP HOLES.
3. ALL EXPOSED EDGES SHALL BE CHAMFERED 1/4".
4. STEPS SHALL BE PROVIDED WHENEVER STRUCTURE EXCEEDS 4
FEET IN DEPTH.
5. STEP DIMENSIONS AND CONFIGURATION SHALL BE IN ACCORDANCE
WITH PENNDOT STANDARDS FOR ROADWAY CONSTRUCTION,
CURRENT EDITION (DOT PUB #72M) RC-30M, "TALENT GRATES".
6. PROVIDE STRUCTURAL STEEL GRATE - BICYCLE SAFE, AS
DETAILED IN PENNDOT STANDARDS FOR ROADWAY CONSTRUCTION,
CURRENT EDITION (DOT PUB #72M) RC-43M, "TALENT GRATES".
7. THE BACKFILL AROUND THE WEPTHOLES SHALL NOT CONTAIN
SCREENINGS: 1/4" PLACE PENNDOT NO. 3 OR LARGER STONES AS
REQUIRED BY ENGINEER WITHOUT SOLIDIFIED TO ALLOW WATER
TO ENTER WEPTHOLES. PLACE GEOTEXTILE FABRIC AROUND
BACKFILL TO PREVENT MIGRATION OF SURROUNDING MATERIAL
INTO VOIDS OF BACKFILL.
8. THE MANUFACTURER OF THE INLETS SHALL BE INCLUDED ON THE
PENNDOT LIST OF APPROVED MANUFACTURERS OF PRECAST
CONCRETE PRODUCTS (BULLETIN 15).
9. TOP UNITS MUST CONTAIN THE 24-INCH BY 3-INCH TROUT LOGO
PLATE AND TAGS DISPLAYING A DRAINING BARRING AS
MANUFACTURED BY EAST JORDAN IRON WORKS INC. (CATALOG NO.
7009-1) TO BE READ FROM ROADWAY SIDE OF INLET.
10. REFER TO DOT PUB #72M, RC-48M FOR ADDITIONAL
REQUIREMENTS.

OWNER'S STATEMENT:

THE UNDERSIGNED IS THE OWNER, EQUITABLE OWNER, OR HAS AN
OPTION OR CONDITIONAL CONTRACT OF SALE ON THE LAND
PROPOSED TO BE SUBDIVIDED OR DEVELOPED AND HAS NO
LITIGATION OR LIENS EXIST OR ARE PENDING ON THE SITE.

OWNER'S CERTIFICATION:

I BEING DULY SWORN ACCORDING TO LAW DEPOSE AND SAY THAT I AM THE
SOLE OWNER OF THIS PROPERTY, IN PEACEFUL POSSESSION OF THE SAME,
AND THAT THERE ARE NO SUITS PENDING AFFECTING THE TITLE THEREOF; I DO
FURTHER DEPOSE AND SAY THAT I HAVE COMPLIED WITH ALL REQUIREMENTS,
PROVISIONS AND CONDITIONS OF RESOLUTION 20-____ BY WHICH THE
TOWNSHIP BOARD OF COMMISSIONERS CONDITIONALLY WAIVED THE
REQUIREMENTS OF THE TOWNSHIP SUBDIVISION AND LAND DEVELOPMENT
ORDINANCE FOR THE PROJECT REFLECTED ON THIS PLAN. I AGREE THAT I
SHALL EXONERATE, INDEMNIFY, PROTECT, DEFEND AND SAVE HARMLESS THE
TOWNSHIP FROM ANY AND ALL CLAIMS, LAWSUITS, DAMAGES AND LIABILITIES OF
EVERY KIND, CHARACTER AND MANNER WHATSOEVER PERTAINING TO, RELATING TO,
RESULTING FROM, CAUSED BY OR ARISING OUT OF THE TOWNSHIP'S
APPROVAL OF THE WAGER REQUEST AS EVIDENCED BY RESOLUTION 20-____,
ALL AS MORE FULLY OUTLINED IN RESOLUTION 20-____.
OWNER:

WILLIAM H. RUHE
OWNER

ADJACENT OWNER'S STATEMENT:

THE UNDERSIGNED ACKNOWLEDGES ALL IMPROVEMENTS PROPOSED ON AND
AROUND THE PROPERTY AT 2436 HUCKLEBERRY ROAD ARE LIMITED TO
ADJUSTMENT OF DRIVEWAY AND GRADING THE IN. HAVE BEEN AGREED UPON.

JOHN P. LUTZ
ADJACENT PROPERTY OWNER

REVIEWED BY THE LEHIGH VALLEY PLANNING
COMMISSION:

COUNTY PLANNING COMMISSION STAFF PERSON DATE

APPROVED BY THE SOUTH WHITEHALL TOWNSHIP
PLANNING COMMISSION:

APPROVED _____ BY THE SOUTH WHITEHALL
MONTH DAY YEAR
TOWNSHIP PLANNING COMMISSION.

CHAIRMAN

SECRETARY

APPROVED BY THE BOARD OF COMMISSIONERS OF
THE TOWNSHIP OF SOUTH WHITEHALL:

APPROVED _____ BY THE BOARD OF
MONTH DAY YEAR
COMMISSIONERS OF THE TOWNSHIP OF SOUTH WHITEHALL.

PRESIDENT SECRETARY

TOWNSHIP ENGINEER

TOWNSHIP WAIVER ACKNOWLEDGEMENT:

BASED UPON AND EXPRESSLY IN RELIANCE ON THE FOREGOING
CERTIFICATIONS OF THE OWNER AND DESIGN PROFESSIONAL, THE WITHIN PLAN
IS ACCEPTED BY SOUTH WHITEHALL TOWNSHIP AS THE PLAN SATISFYING ALL
REQUIREMENTS, PROVISIONS AND CONDITIONS OF RESOLUTION 20-____.

PRESIDENT

PROFESSIONAL ENGINEER'S CERTIFICATION

I, ALAN R. FORNWALT, P.E., A REGISTERED PROFESSIONAL ENGINEER
IN THE COMMONWEALTH OF PENNSYLVANIA, DO HEREBY CERTIFY THAT
THE ACCOMPANYING APPLICATION, PLANS AND SUPPORTING
DOCUMENTATION ARE TRUE AND CORRECT, TO THE BEST OF MY
KNOWLEDGE.

ALAN R. FORNWALT P.E. PE 070819
KEYSTONE CONSULTING ENGINEERS, INC.
5012 MEDICAL CENTER CIRCLE, ALLENTOWN, PA 18106

LEHIGH COUNTY RECORDER OF DEEDS:

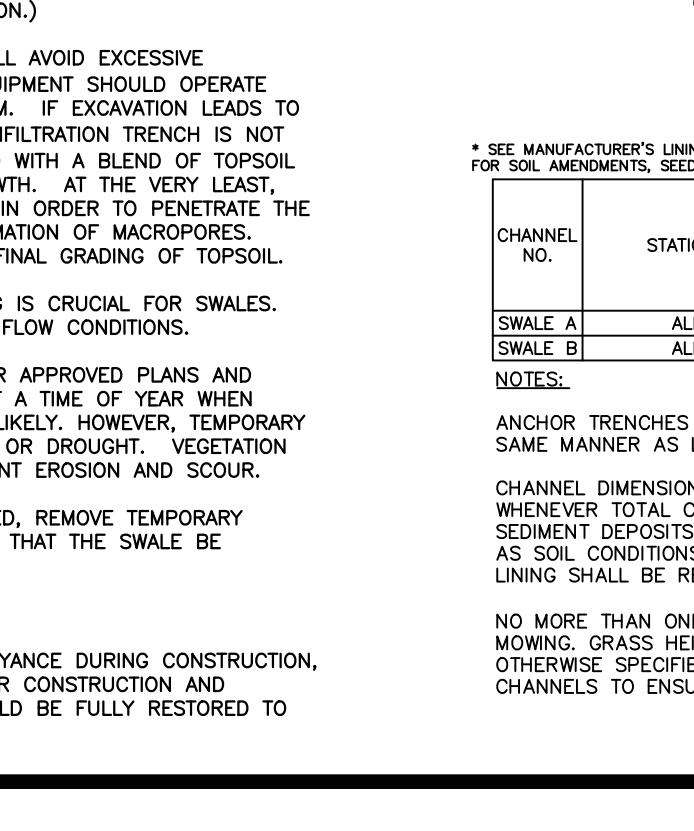
LEHIGH COUNTY OFFICIAL DATE

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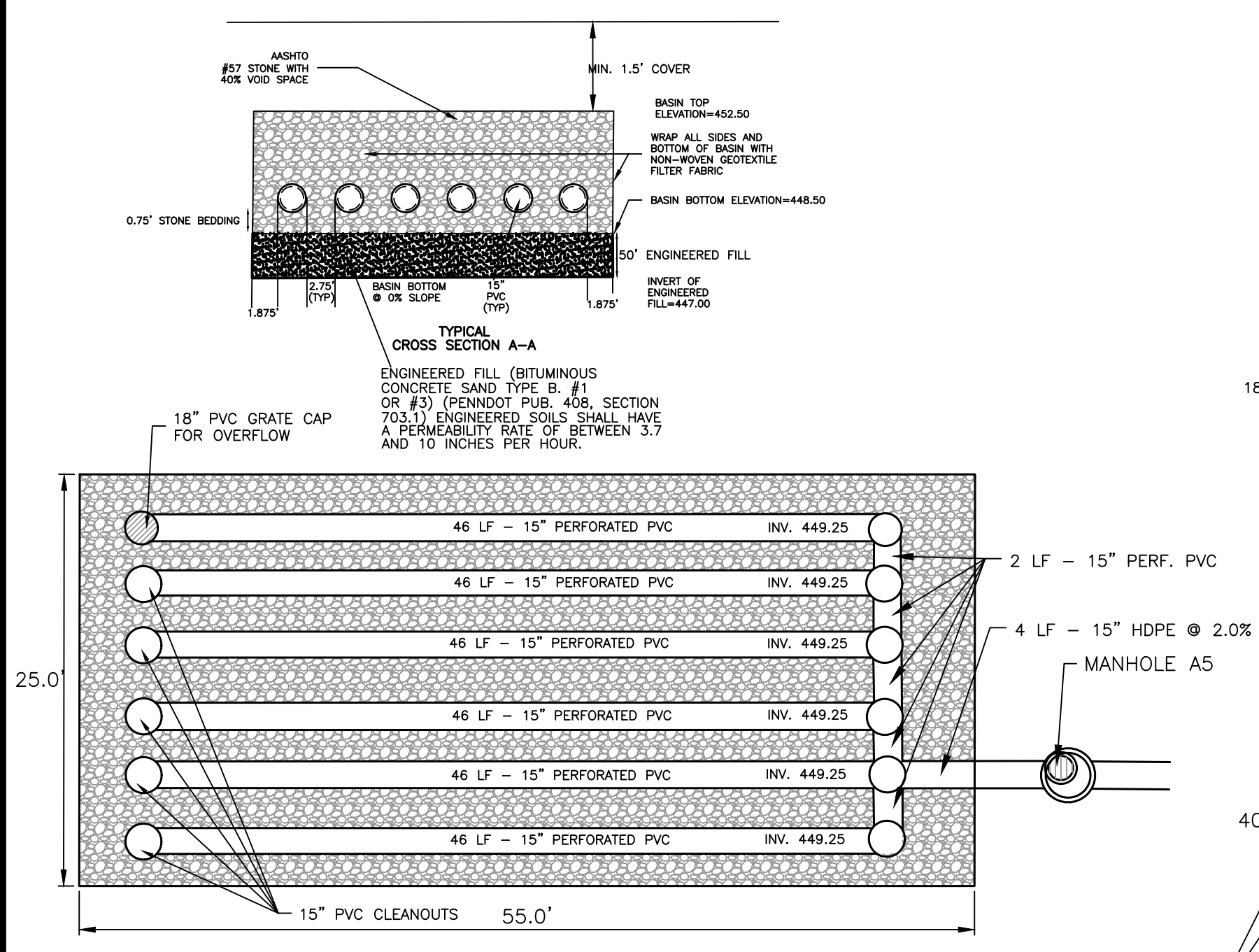
KEYSTONE CONSULTING ENGINEERS logo

POST CONSTRUCTION STORMWATER
MANAGEMENT DETAILS
RUHE MINOR SUBDIVISION
PRELIMINARY/FINAL PLAN
2442 HUCKLEBERRY ROAD
LEHIGH COUNTY, PENNSYLVANIA

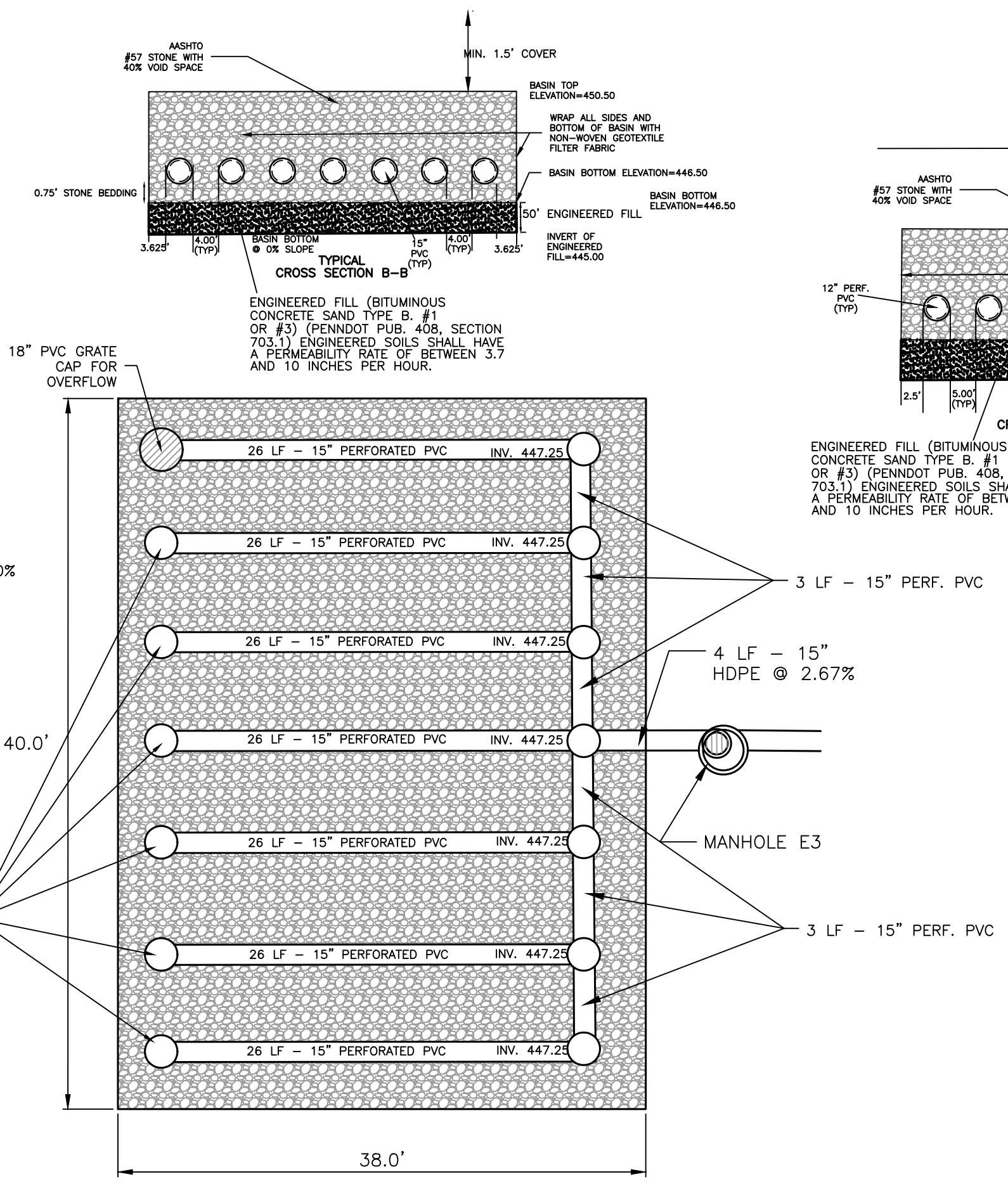
Table with columns: CHANNEL NO., STATIONS, BOTTOM WIDTH B (FT), DEPTH D (FT), TOP WIDTH W (FT), Z1 (FT), Z2 (FT), LINING. Includes rows for SWALE A and SWALE B.



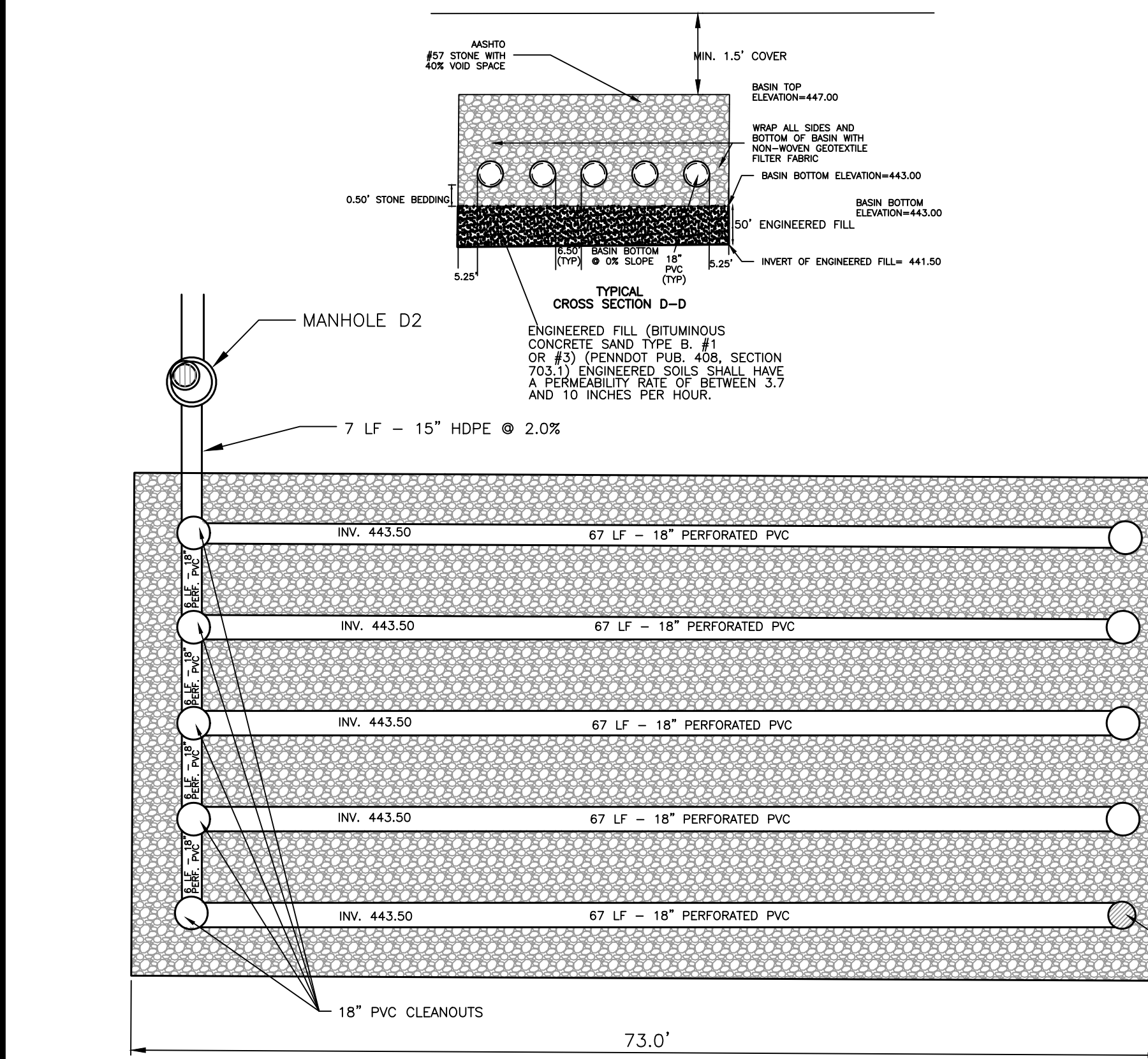
NOTES:
ANCHOR TRENCHES SHALL BE INSTALLED AT BEGINNING AND END OF CHANNEL IN THE
SAME MANNER AS LONGITUDINAL ANCHOR TRENCHES.
CHANNEL DIMENSIONS SHALL BE CONSTANTLY MAINTAINED. CHANNEL SHALL BE CLEANED
WHENEVER TOTAL CHANNEL DEPTH IS REDUCED BY 25% AT ANY LOCATION.
SEDIMENT DEPOSITS SHALL BE REMOVED WITHIN 24 HOURS OF DISCOVERY OR AS SOON
AS SOIL CONDITIONS PERMIT ACCESS TO CHANNEL WITHOUT FURTHER DAMAGE. DAMAGED
LINING SHALL BE REPAIRED OR REPLACED WITHIN 48 HOURS OF DISCOVERY.
NO MORE THAN ONE THIRD OF THE SHOOT (GRASS LEAF) SHALL BE REMOVED IN ANY
MOWING. GRASS HEIGHT SHALL BE MAINTAINED BETWEEN 2 AND 3 INCHES UNLESS
OTHERWISE SPECIFIED. EXCESS VEGETATION SHALL BE REMOVED FROM PERMANENT
CHANNELS TO ENSURE SUFFICIENT CHANNEL CAPACITY.



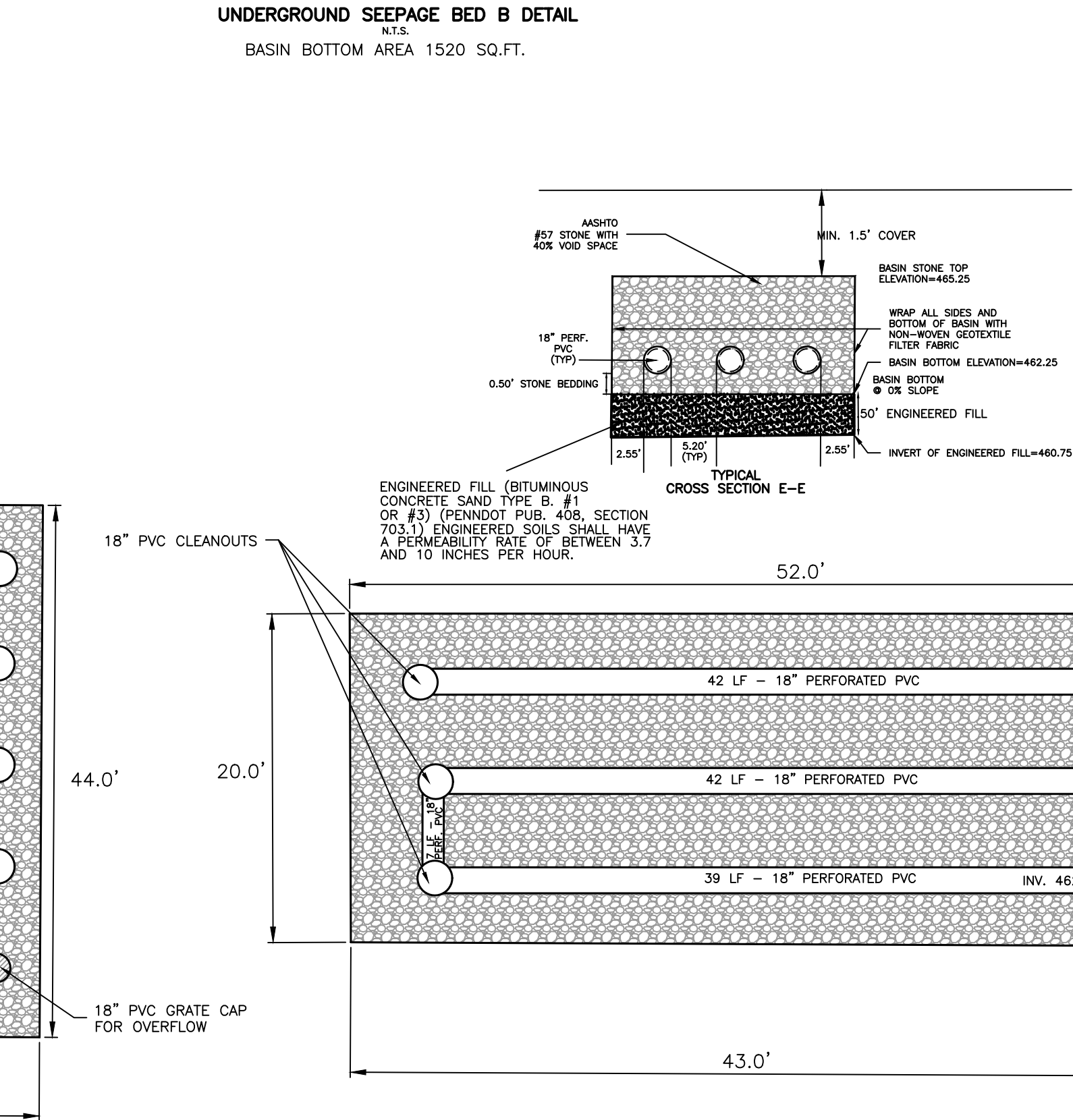
UNDERGROUND SEEPAGE BED A DETAIL
 BASIN BOTTOM AREA 1375 SQ.FT.



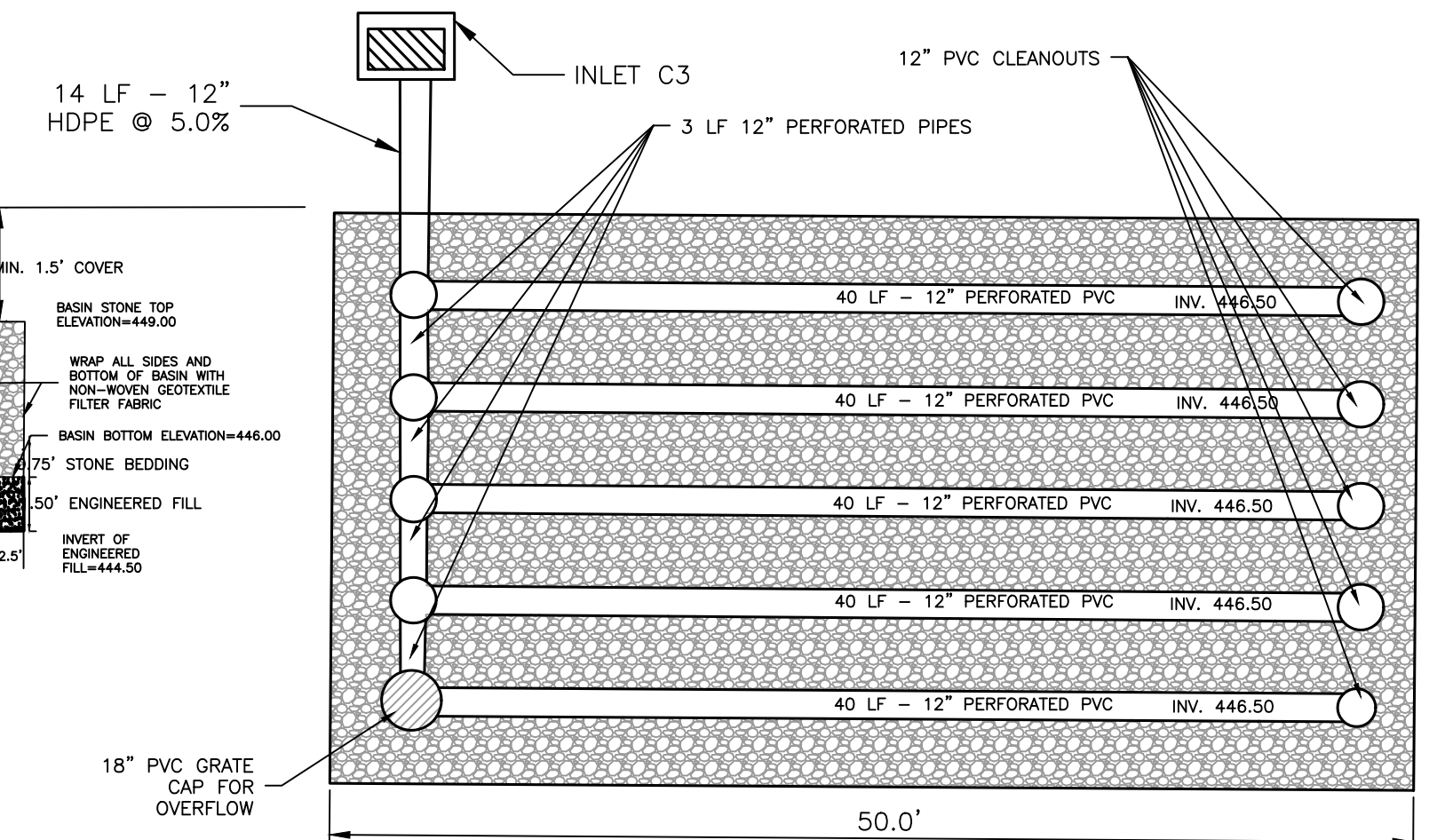
UNDERGROUND SEEPAGE BED B DETAIL
 BASIN BOTTOM AREA 1520 SQ.FT.



UNDERGROUND SEEPAGE BED D DETAIL
 BASIN BOTTOM AREA 3212 SQ.FT.



UNDERGROUND SEEPAGE BED E DETAIL
 BASIN BOTTOM AREA 990 SQ.FT.



UNDERGROUND SEEPAGE BED C DETAIL
 BASIN BOTTOM AREA 1500 SQ.FT.

SEEPAGE BED DETAIL		INFILTRATION BED		ENGINEERED FILL		DISTRIBUTION PIPE		TEST ID		TEST ELEV.	
BED ID	BED DIMENSIONS (FT)	INFILTRATION BED (SQ.FT)	STONE DEPTH (FT)	ENGINEERED FILL (SQ.FT)	INFILTRATION BED BOTTOM ELEV.	ENGINEERED FILL INV. ELEV.	DISTRIBUTION PIPE INV. ELEV.	TEST ID	TEST ELEV.	TEST ID	TEST ELEV.
A	25 X 55	1375	4.0	1.5	448.50	447.00	449.25	1B(1&2)	448.50		
B	38 X 40	1520	4.0	1.5	446.50	445.00	447.25	1A(1&2)	446.00		
C	30 X 50	1500	3.0	1.5	446.00	444.50	446.50	3A/3B	445.50		
D	44 X 73	3212	4.0	1.5	443.00	441.50	443.50	4B	445.10		
E	IRREGULAR	990	3.0	1.5	462.25	460.75	462.75	1C/1D	461.50		

- INFILTRATION RATE NOTES**
- ALL UNDERGROUND SEEPAGE BEDS ARE TO BE UNDERLAIN BY 18" OF ENGINEERED FILL. ONCE COMPLETED, INFILTRATION TESTS SHALL BE CONDUCTED TO VERIFY INFILTRATION RATE OF THE SEEPAGE BED MEETS OR EXCEEDS THE DESIGNED INFILTRATION RATE OF 2.5"/HOUR. THIS IS A CRITICAL STAGE AND SHOULD BE OVERSEEN BY A LICENSED PROFESSIONAL.
 - POST CONSTRUCTION INFILTRATION TESTING RESULTS WILL BE SENT TO THE LEHIGH COUNTY CONSERVATION DISTRICT TO VERIFY THE BEDS MEET OR EXCEED THE DESIGN INFILTRATION RATE OF 2.5"/HOUR.
- ROOF LEADER AND YARD DRAINAGE NOTES**
- IT IS THE RESPONSIBILITY OF THE DESIGN ENGINEER TO DESIGN A ROOF LEADER CONSISTENT WITH THE ACTUAL DWELLING PROPOSED FOR CONSTRUCTION ON THE INDIVIDUAL LOT GRADING PLAN. THE ROOF LEADER SYSTEM SHALL BE DESIGNED TO CAPTURE THE EQUIVALENT AMOUNT OF ROOF TOP AS SHOWN ON THE BMP DRAINAGE MAP ATTACHED TO THE APPROVED PCSM PLAN AND DIRECT THE STORM FLOWS TO THE SEEPAGE BED. THE YARD DRAINAGE SYSTEM SHALL INCLUDE APPROPRIATE GRADING AND THE 2X2 YARD INLET.
 - MODIFICATIONS TO THE APPROVED PCSM PLAN MAY BE REQUIRED BY LCDD WHEN AN EQUIVALENT TRIBUTARY AREA TO THAT WHICH IS SHOWN ON THE BMP DRAINAGE MAP IS NOT CAPTURED AND DIRECTED TO THE SEEPAGE BED.
- CONSTRUCTION NOTES**
- LEAF/DEBRIS TRAP MAY BE CONSTRUCTED OF 18" HDPE, PEP OR EQUIVALENT.
 - STONE FOR THE SEEPAGE BED SHALL BE 2 INCH TO 1 INCH UNIFORMLY GRADED COARSE AGGREGATE, WITH A WASH LOSS OF NO MORE THAN 0.5 ASHTO SIZE NUMBER 3 PER ASHTO SPECIFICATIONS AND SHALL HAVE Voids EQUAL TO OR GREATER THAN 40%.
 - NON-WOVEN GEOTEXTILE SHALL CONSIST OF NEEDED NON WOVEN POLYPROPYLENE FIBERS AND MEET THE FOLLOWING PROPERTIES:
 - A. GRAB TENSILE STRENGTH (ASTM-D4632) 120 LBS.
 - B. MULLEN BURST STRENGTH (ASTM-D3786) 225 PSI.
 - C. FLOW RATE (ASTM-D491) 95 GAL/MIN/SF
 - D. UV RESISTANCE AFTER 500 HRS (ASTM D4355) 70
 - E. HEAT SET OR HEAT CALENDARED FABRICS ARE NO PERMITTED. ACCEPTABLE TYPES INCLUDE MIRAFI 140n, AMOCO 4547, AND GEOTEX 451
- SEEPAGE BED NOTES**
- THE INDIVIDUAL LOT OWNER IS RESPONSIBLE FOR THE PROPER OPERATION AND MAINTENANCE OF THE SEEPAGE BED ON HIS OR HER LOT IN PERPETUITY. THE INDIVIDUAL LOT OWNER SHALL INSPECT, CLEAN, REMOVE SILT OR OTHER DEBRIS AND OTHERWISE MAINTAIN THE CLEANOUT STRUCTURE(S) AND RECHARGE PIT(S) IN PROPER WORKING ORDER.
 - THE SEEPAGE BED SHALL BE LEVEL.
 - PIPING SHALL BE PERFORATED ONLY WITHIN THE SUBSURFACE INFILTRATION BED FOOTPRINT.

- CONSTRUCTION SEQUENCE UNDERGROUND SEEPAGE BEDS**
- DUE TO THE NATURE OF CONSTRUCTION SITES, SEEPAGE BEDS SHOULD BE INSTALLED TOWARD THE END OF THE CONSTRUCTION PERIOD.
 - INSTALL AND MAINTAIN ADEQUATE EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION.
 - THE EXISTING SUBGRADE UNDER THE BED AREAS SHOULD NOT BE COMPACTED OR SUBJECT TO EXCESSIVE EQUIPMENT TRAFFIC PRIOR TO GEOTEXTILE AND STONE BED PLACEMENT.
 - WHERE EROSION OF SUBGRADE HAS CAUSED ACCUMULATION OF FINE MATERIALS AND/OR SURFACE PONDING, THIS MATERIAL SHOULD BE REMOVED WITH LIGHT EQUIPMENT AND THE UNDERLYING SOILS SCARIFIED TO A MINIMUM DEPTH OF 6" WITH A WORK RATE OR EQUIVALENT AND LIGHT TRACTOR. ALL FINE GRADING SHOULD BE DONE BY HAND. ALL BED BOTTOMS SHOULD BE AT LEVEL GRADE.
 - INSTALL UPSTREAM AND DOWNSTREAM CONTROL STRUCTURES, CLEANOUTS, PERFORATED PIPING, AND ALL OTHER NECESSARY STORMWATER STRUCTURES.
 - GEOTEXTILE AND BED AGGREGATE SHOULD BE PLACED IMMEDIATELY AFTER APPROVAL OF SUBGRADE PREPARATION AND INSTALLATION OF STRUCTURES. GEOTEXTILE SHOULD BE PLACED IN ACCORDANCE WITH MANUFACTURERS STANDARDS AND RECOMMENDATIONS. WRAP ALL SIDES AND BOTTOM OF BASIN WITH GEOTEXTILE. ADVANCED STRIPS OF GEOTEXTILE SHOULD OVERLAP A MINIMUM OF 16 INCHES. IT SHOULD ALSO BE SECURED AT LEAST 4 FEET OUTSIDE OF BED IN ORDER TO PREVENT ANY RUNOFF OR SEDIMENT FROM ENTERING THE STORAGE BED. THIS EDGE STRIP SHOULD REMAIN IN PLACE UNTIL ALL BARE SOILS CONTIGUOUS TO THE BED IS STABILIZED AND VEGETATED. AS THE SITE IS FULLY STABILIZED, EXCESS GEOTEXTILE ALONG BED EDGES CAN BE CUT BACK TO THE EDGE OF THE BED.
 - CLEAN WASHED, UNIFORMLY GRADED AGGREGATE SHOULD BE PLACED IN THE BED IN MAXIMUM 8 INCH LIFTS. EACH LAYER SHOULD BE LIGHTLY COMPACTED WITH CONSTRUCTION EQUIPMENT BEING KEPT OFF THE BED AS MUCH AS POSSIBLE.
 - TOPSOIL SHOULD BE PLACED OVER THE SEEPAGE BED IN MAXIMUM 6 INCH LIFTS.
 - SEED AND STABILIZE TOPSOIL.
 - DO NOT REMOVE EROSION CONTROLS UNTIL SITE IS FULLY STABILIZED.
- MAINTENANCE**
- UNDERGROUND SEEPAGE BEDS REQUIRE REGULAR AND EFFECTIVE MAINTENANCE TO ENSURE PROLONGED FUNCTIONING.
- INSPECT UNDERGROUND SEEPAGE BED AT LEAST FOUR TIMES A YEAR, AS WELL AS AFTER EVERY STORM EXCEEDING 1 INCH.
 - DISPOSE OF SEDIMENT, DEBRIS/TRASH, AND ANY OTHER WASTE MATERIAL REMOVED FROM SEEPAGE BED AT A SUITABLE DISPOSAL/RECYCLING FACILITY AND IN COMPLIANCE WITH LOCAL, STATE AND FEDERAL WASTE REGULATIONS.
 - EVALUATE THE DRAIN DOWN TIME TO ENSURE THE MAXIMUM TIME OF 72 HOURS IS NOT BEING EXCEEDED. IF DRAIN DOWN TIMES AREA EXCEEDING THE MAXIMUM, DRAIN THE SEEPAGE BED VIA PUMPING AND CLEAN OUT PERFORATED PIPING. IF SLOW DRAINAGE PERSISTS, THE SYSTEM MAY NEED REPLACING.
 - REGULARLY CLEAN OUT GUTTERS AND ENSURE PROPER CONNECTIONS TO FACILITATE THE EFFECTIVENESS OF THE SEEPAGE BED.
 - REPLACE FILTER SCREENS THAT INTERCEPT ROOF RUNOFF AS NECESSARY.

OWNER'S STATEMENT:
 THE UNDERSIGNED IS THE OWNER, EQUITABLE OWNER, OR HAS AN OPTION OR CONDITIONAL CONTRACT OF SALE ON THE LAND PROPOSED TO BE SUBDIVIDED OR DEVELOPED AND HAS NO LITIGATION OR LIENS EXIST OR ARE PENDING ON THE SITE.

OWNER _____

OWNER'S CERTIFICATION:
 I BEING DULY SWORN ACCORDING TO LAW DEPOSE AND SAY THAT I AM THE SOLE OWNER OF THIS PROPERTY, IN PEACEFUL POSSESSION OF THE SAME, AND THAT THERE ARE NO SUITS PENDING AFFECTING THE TITLE THEREOF, I DO NOT HAVE ANY OTHER INTEREST IN THE PROPERTY, AND THAT I DO NOT KNOW OF ANY OTHER PERSONS WHOSE INTERESTS ARE AFFECTED BY THIS DEED. I DO HEREBY DEPOSE AND SAY THAT I HAVE COMPLIED WITH ALL REQUIREMENTS, PROVISIONS AND CONDITIONS OF RESOLUTION 20____ BY WHICH THE TOWNSHIP BOARD OF COMMISSIONERS CONDITIONALLY WAIVED THE REQUIREMENTS OF THE TOWNSHIP SUBDIVISION AND LAND DEVELOPMENT ORDINANCE FOR THE PROJECT REFLECTED ON THIS PLAN. I AGREE THAT I SHALL EXONERATE, INDEMNIFY, PROTECT, DEFEND AND SAVE HARMLESS THE TOWNSHIP FROM ANY AND ALL CLAIMS, LAWSUITS, DAMAGES AND LIABILITIES OF EVERY KIND, CHARACTER AND MANNER WHATSOEVER PERTAINING TO, RELATING TO, RESULTING FROM, CAUSED BY OR ARISING OUT OF THE TOWNSHIP'S APPROVAL OF THE WAIVER REQUEST AS EVIDENCED BY RESOLUTION 20____, ALL AS MORE FULLY OUTLINED IN RESOLUTION 20____.

OWNER: _____

WILLIAM H. RUHE
 OWNER

ADJACENT OWNER'S STATEMENT:
 THE UNDERSIGNED ACKNOWLEDGES ALL IMPROVEMENTS PROPOSED ON AND AROUND THE PROPERTY AT 2436 HUCKLEBERRY ROAD ARE LIMITED TO ADJUSTMENT OF DRIVEWAY AND GRADING TIE IN, HAVE BEEN AGREED UPON.

ADJACENT OWNER: _____

JOHN P. LUTZ
 ADJACENT PROPERTY OWNER

REVIEWED BY THE LEHIGH VALLEY PLANNING COMMISSION:

COUNTY PLANNING COMMISSION STAFF PERSON _____ DATE _____

APPROVED BY THE SOUTH WHITEHALL TOWNSHIP PLANNING COMMISSION:
 APPROVED _____ BY THE SOUTH WHITEHALL TOWNSHIP PLANNING COMMISSION.
 MONTH DAY YEAR

CHAIRMAN _____

SECRETARY _____

APPROVED BY THE BOARD OF COMMISSIONERS OF THE TOWNSHIP OF SOUTH WHITEHALL:
 APPROVED _____ BY THE BOARD OF COMMISSIONERS OF THE TOWNSHIP OF SOUTH WHITEHALL.
 MONTH DAY YEAR

PRESIDENT _____ SECRETARY _____

TOWNSHIP ENGINEER _____

TOWNSHIP WAIVER ACKNOWLEDGEMENT:
 BASED UPON AND EXPRESSLY IN RELIANCE ON THE FOREGOING CERTIFICATIONS OF THE OWNER AND DESIGN PROFESSIONAL, THE WITHIN PLAN IS ACCEPTED BY SOUTH WHITEHALL TOWNSHIP AS THE PLAN SATISFYING ALL REQUIREMENTS, PROVISIONS AND CONDITIONS OF RESOLUTION 20____.

PRESIDENT _____

PROFESSIONAL ENGINEER'S CERTIFICATION

I, ALAN R. FORNWALT, P.E., A REGISTERED PROFESSIONAL ENGINEER IN THE COMMONWEALTH OF PENNSYLVANIA, DO HEREBY CERTIFY THAT THE ACCOMPANYING APPLICATION, PLANS AND SUPPORTING DOCUMENTATION ARE TRUE AND CORRECT, TO THE BEST OF MY KNOWLEDGE.

ALAN R. FORNWALT P.E. PE 070819
 KEYSTONE CONSULTING ENGINEERS, INC.
 5012 MEDICAL CENTER CIRCLE, ALLENTOWN, PA 18106

LEHIGH COUNTY RECORDER OF DEEDS:

LEHIGH COUNTY OFFICIAL _____ DATE _____

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 5012 MEDICAL CENTER CIRCLE, ALLENTOWN, PA 18106 610-395-0971
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 www.KCEINC.com



POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS 2											
RUHE MINOR SUBDIVISION PRELIMINARY/FINAL PLAN											
2442 HUCKLEBERRY ROAD											
SOUTH WHITEHALL TOWNSHIP LEHIGH COUNTY, PENNSYLVANIA											
DESIGNED BY:	KCE										
DRAWN BY:	MSN										
CHECKED BY:	MFC/ARF										
DATE:	March 05, 2021										
SCALE:	AS SHOWN										
JOB NUMBER:	CW-20-128										
SHEET:	23 OF 23										
REVISIONS:	<table border="1"> <thead> <tr> <th>BY</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td>EAF</td> <td>06/16/2021</td> </tr> <tr> <td>MSN</td> <td>12/16/2021</td> </tr> <tr> <td>IMK</td> <td>09/20/2023</td> </tr> <tr> <td>IMK</td> <td>11/17/2023</td> </tr> </tbody> </table>	BY	DATE	EAF	06/16/2021	MSN	12/16/2021	IMK	09/20/2023	IMK	11/17/2023
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