

PERMIT TABULATING CHART

1. DEP - Planning Module Exemption

4. PA DEP CHAPTER 105 Joint Permit

**UTILITY LIST** 

COMPANY: VERIZON PENNSYLVANIA LLC

PITTSBURGH, PA 15212

COMPANY: SUEZ WATER PENNSYLVANIA INC.

ONE COLLEGE AVE SUITE 3001

MECHANICSBURG, PA 17055

AKRON, OH 44308-1890

SCRANTON, PA 18509

PARKING CALCULATIONS

\$245-256.A(1)(f). MULTI-FAMILY DWELLINGS: 2 SPACES PER DWELLING UNIT.

 $| \S245-256.A(2)(b)$ . OFFICE:1 SPACE PER 200 SF OF OF GROSS FLOOR AREA.

236

§245-256.A(6)(a). COMMUNITY BUILDINGS:1 SPACE PER 100 SF OF OF GROSS FLOOR AREA.

|\*\*1 APARTMENT BLDG — 19 DWELLING UNITS @ 2 SPACES/DU (38 SPACES) + COMMUNITY BUILDING - 5,055 SF @ 1 SPACE/100 SF (51 SPACES) + OFFICE - 1,300 SF @ 1

SANITARY SEWER EDU CALCULATIONS

A CONTRIBUTION OF \$2,300 PER DWELLING UNIT SHALL BE MADE TO THE

TOWNSHIP RECREATION LAND AQUISITION AND IMPROVEMENT FUND IN LIEU OF

ACCESSIBLE\*

CONTACT: MICHELLE GERRITY-DRUTHER

EMAIL: mgerrity-druther@pplweb.com

HARRISBURG, PA 17111

EMAIL: nathaniel.sheffer@suez-na.com

ADDRESS: 15 E MONTGOMERY AVE

CONTACT: OFFICE PERSONNE

PHONE: (717) 777-4887

ADDRESS: 4211 E PARK CIR

COMPANY: MESSIAH COLLEGE

ADDRESS: FACILITY SERVICES

EMAIL: dsmith@messiah.edu

COMPANY: FIRST ENERGY CORP

CONTACT: DANIEL SMITH

ADDRESS: 76 S MAIN ST

CONTACT: OFFICE PERSONNEL

COMPANY PPL FLECTRIC UTILITIES

PHONE: (800) 545-7741

ADDRESS: 1 LARCH STREET

<u>MULTI-FAMILY (APARTMENT):</u>

BURDETTE PLACE: \*\* =

KATIE PLACE: 118 TOTAL DU =

ALEXA COURT: 59 TOTAL DU =

LEVI COURT: 118 TOTAL DU =

ALYSSA COURT: 59 TOTAL DU =

BROOKSTER COURT: 19 TOTAL DU = 38

\* ACCESSIBLE SPACES ARE INCLUDED IN TOTALS

SPACE/200 SF (7) = 96 TOTAL REQUIRED SPACES

ESTIMATED WATER USAGE FOR LOTS 1 THROUGH 3:

COMMUNITY BUILDING W/ POOL - 207 OCCUPANTS @ 10 GPD =

DEDICATION OF RECREATION LAND TO THE TOWNSHIP.

\* UPPER ALLEN TOWNSHIP EDU RATE: 1 EDU = 221 GPD

392 APARTMENT UNITS @ 221 GALLONS/DAY =

TOTAL 88,702 GPD = 402 EDU\*

**RECREATION FEE** 

CONTECT: NAT SHEFFER

PROJECT DESCRIPTION

2. DEP - NPDES permit

3. PENNDOT - HOP

DATE SUBMITTED | PERMIT NO.

COMPANY: COMCAST

ADDRESS: 4601 SMITH ST

CONTACT: ALLISON FUNK

EMAIL: afunk@uatwp.org

CONTACT: MICHAEL SWEIGARD

COMPANY: UPPER ALLEN TOWNSHIP

ADDRESS: 100 GETTYSBURG PIKE

COMPANY: UPPER ALLEN TOWNSHIP

ADDRESS: 100 GETTYSBURG PIKE

CONTACT: KODI HOCKENBERRY

COMPANY: UGI UTILITIES, INC.

CONTACT: JOANNE ARCHFIELD

EMAIL: jarchfield@ugi.com

ADDRESS: 1301 API DRIVE

EMAIM: khockenberry@uatwp.org

HARRISBURG, PA 17109

MECHANICSBURG, PA 17055

MECHANICSBURG, PA 17055

MIDDLETOWN, PA 17057-5987

258

108

266

133

86,632 GPD

EMAIL: mike\_sweigard@cable.comcast.com

COMMUNITY DEVEL.

06-13-17

05-26-17

THE PURPOSE OF THIS PLAN IS TO GUIDE THE DEVELOPMENT OF LAND FULLY WITHIN

8 MULTI-FAMILY (APARTMENT) BUILDINGS WITH 392 DWELLING UNITS AND A COMMUNITY

UPPER ALLEN TOWNSHIP FOR A RESIDENTIAL COMMUNITY CONSISTING OF

APPROVAL DATE

## PRELIMINARY SUBDIVISION AND LAND DEVELOPMENT PLAN

OAKWOOD HILLS



2403 NORTH FRONT STREET HARRISBURG, PA 17110 PHONE: (717) 233-1026 FAX: (717) 233-2192 CONTACT: CHRISTINE HUNTER, RLA. EMAIL: CHRISTINE.HUNTER@HEBLACK.COM

DATED: MAY 1, 2017 REVISED JUNE 1, 2017 REVISED JULY 3, 2017 REVISED AUGUST 01, 2017 REVISED AUGUST 22, 2017 REVISED OCTOBER 27, 2017 REVISED NOVEMBER 06, 2017 REVISED NOVEMBER 13, 2017 REVISED DECEMBER 27, 2017 REVISED MARCH 28, 2018 REVISED MAY 04, 2018 REVISED JUNE 08, 2018 REVISED JUNE 27, 2018 REVISED JULY 31, 2018

**SPECIAL EXCEPTION** 

**REFERENCED PLANS** 

DEED REFERENCES

ZONING/SITE DATA

BPO - BUSINESS AND PROFESSIONAL DISTRICT

R-2 - MEDIUM DENSITY RESIDENTIAL DISTRICT

52.485 AC

14.943 AC

13.49 AC

9.79 AC

21.59 AC

12.79 AC

4 77 AC

48.65 AC

\* SIDE YARD SETBACK FOR BUILDINGS  $\leq$  35' HEIGHT.

30%

30%

35'\*

\*MAY BE EXCEEDED IN ACCORDANCE WITH § 245-157

118 DU / 9.79 AC = 12.05 DU/AC

196 DU / 21.58 AC = 9.05 DU/AC

78 DU / 12.79 AC = 6.10 DU/AC

RESERVÉD FOR FUTURE DEVELÓPMENT RESERVED FOR FUTURE DEVELOPMENT

<u>REQUIRED</u>

ALLOWED

100'\*

100'\*

100'\*

150'

50'

SIDE YARD SETBACK FOR 46.5' HEIGHT BUILDING IN ACCORDANCE WITH §

1,305

1,742

1,100'

4,300'

\*\*\* REQUIRED LOT AREA IS BASED ON COMPLIANCE WITH ZONING REQUIREMENTS

100' FOR MULTI-FAMILY DWELLINGS - \$ 245 ATTACHMENT 5 #5.

981'

\*\* 1 ACRE PER DEVELOPMENT AREA AND 2,000 SF PER UNIT \\$ 245 ATTACHMENT 5 #5.

13.45%

11.43%

7.43%

≤ 46.5'

BUILDING  $1 - \leq 35$ 

BUILDING  $7 \le 46.5$ 

BUILDING  $8 \le 35$ 

BUILDINGS 4, 5, 6  $- \le 46.5$ 

0%

0%

R-3 - HIGH DENSITY RESIDENTIAL DISTRICT

SSP - STEEP SLOPE PROTECTION DISTRICT

42-11-0276-009

42-30-2112-004

42-11-0276-108

42-30-2110-018

EXISTING ZONES:

INS - INSTITUTIONAL

42-11-0276-009

42-11-0276-008A

42-30-2112-004

42-30-2110-018

42-11-0276-108

LOT 2

LOT 3

LOT 4

LOT 5

LOT 2

LOT 5

245-157

LOT 2

LOT 3

LOT 4

LOT 4

LOT 5

LOT 3

# OF RESIDENTIAL UNITS

<u>OT INFORMATION:</u>

BUILDING SETBACKS:

42-11-0276-008A

A SPECIAL EXCEPTION FOR USES PERMITTED WITHIN A STEEP SLOPE PROTECTION

ZONE WAS APPROVED BY THE UPPER ALLEN TOWNSHIP ZONING HEARING BOARD

PRELIMINARY/FINAL MINOR SUBDIVISION PLAN OF ORCHARD HILL(MESSIAH COLLEGE

PRELIMINARY/FINAL RE-SUBDIVISION PLAN OF MESSIAH COLLEGE TRACTS (LOTS #1

#2, #3, #4 & #5), RECORDED IN PLAN BOOK 81, PAGE 58 ON JUNE 29, 2000.

DEED BOOK REFERENCE D.B. 276 – PG. 3637

D.B. 261 - PG. 4291

D.B. R, Vol. 20 - PG. 1085

AGRICULTURAL

AGRICUI TURAL

AGRICUI TURAL

RESIDENTIAL

RESIDENTIAL

INSTITUTIONAL

AGRICULTURAL

**AGRICULTURAL** 

LOT SIZE

REQUIRED PROVIDED

PROVIDED

63'\*

63'\*

50'\*\*

63'\*

25'

N A \*\*\*

55%

60%

60%

RESIDENTIAL (MULTI-FAMILY)

RESIDENTIAL (MULTI-FAMILY)

RESIDENTIAL (MULTI-FAMILY)

50'

50'

279,560 SF\*\* 426,445 SF (9.79 AC)

435,560 SF\*\* 941,379 SF (21.61 AC)

199,560 SF\*\* 557,167 SF (12.79 AC

N A \*\*\*

39.24%

36.22%

0.6%

0%

50' 50'

50'

D.B. 215 - PG. 642

D.B 256 - PG. 4675

D.B. 169 - PG. 344

R-3

R-3

R-3

REQ

63'\*

63'\*

50'\*\*

25'

25'

PRESIDENT'S HOME), RECORDING INSTRUMENT 201515427, ON JUNE 24, 2015.

# WEST LISBURN ROAD UPPER ALLEN TOWNSHIP CUMBERLAND COUNTY, PENNSYLVANIA

### **SHEET INDEX**

EXISTING CONDITIONS WETLAND EASEMENTS EXISTING CONDITIONS WETLAND EASEMENTS

OF 68 OVERALL EXISTING CONDITIONS PLAN

OF 68 COVER SHEET

\* 9 OF 68 SUBDIVISION PLAN

\* 12 OF 68 LAYOUT PLAN B

\* 20 OF 68 UTILITY PLAN A

\* 21 OF 68 UTILITY PLAN B

\* 25 OF 68 EASEMENT PLAN B

\* 26 OF 68 EASEMENT PLAN C

33 OF 68 ROUNDABOÚT PLAN

34 OF 68 PROFILES

35 OF 68 PROFILES 36 OF 68 PROFILES

37 OF 68 PROFILES

38 OF 68 PROFILES

39 OF 68 PROFILES

40 OF 68 PROFILES

41 OF 68 PROFILES

42 OF 68 PROFILES

43 OF 68 PROFILES

44 OF 68 PROFILES

45 OF 68 PROFILES

46 OF 68 PROFILES

47 OF 68 PROFILES

48 OF 68 PROFILES

50 OF 68 SITE DETAILS

51 OF 68 SITE DETAILS

52 OF 68 SITE DETAILS

53 OF 68 SITE DETAILS

54 OF 68 UTILITY DETAILS

55 OF 68 UTILITY DETAILS

56 OF 68 UTILITY DETAILS

60 OF 68 E&S PLAN A

61 OF 68 E&S PLAN B

62 OF 68 E&S PLAN (

63 OF 68 F&S PLAN D

64 OF 68 E&S DETAILS

65 OF 68 E&S DETAILS

66 OF 68 E&S DETAILS

67 OF 68 E&S DETAILS

68 OF 68 E&S DETAILS

\* TO BE RECORDED

SALDO MODIFICATION REQUESTS

- Request 3'-4" grass planting strip

Request type 1 screen along roadways

220-15.B(11)(a) Widen adjacent street

2. 220-15.B(11)(a) Widen adjacent street

3. 220—16.A(2) Curbs along adjoining road

4. 220-16.A(2) Curbs along adjoining road

- Request deferral of curbs along Mill Rd.

5. 220-16.B(3) Sidewalks along adjoining road

- Request deferral of sidewalks along Mill Rd.

5. 220—16.B(3) Sidewalks along adjoining road

. 220—16.B(3) Sidewalks along proposed streets

- Request deferral of widening W. Lisburn Rd.

- Request deferral of curbs along W. Lisburn Rd.

- Request deferral of sidewalks along W. Lisburn Rd.

49 OF 68 STREET CROSS SECTIONS

57 OF 68 SANITARY SEWER DETAILS

SALDO WAVERS, MODIFICATIONS, DEFERRALS

THE OWNER REQUESTS THE FOLLOWING MODIFICATIONS & DEFERRALS FROM THE

2. 220—16.B(2) A four—foot wide grass planting strip between curb and sidewalk.

- Request deferral of widening Mill Rd except 130 linear feet at new intersection

-Request deferral of sidewalks along Oakwood Hills Drive from STA 26+50 to Mill

UPPER ALLEN TOWNSHIP LAND DEVELOPMENT ORDINANCE SECTIONS.

220—9.C(2)(s) Existing 30 inch caliper or larger) shown on plan

. 220—26.B(1)(g)[5] Type 3 screen for SWM along roadways

. 220-9.C(2) Plan scale at maximum 50 feet to one inch

- Request 30 inch caliper trees shown within limit of disturbance only.

- Request 150 scale Overall Plans - Sheets 3, 9, 10, 14, 23 and 29

58 OF 68 LANDSCAPE DETAILS

59 OF 68 OVERALL E&S PLAN

\* 16 OF 68

\* 17 OF 68

22 OF 68

\* 27 OF 68

\* 10 OF 68 OVERALL LAYOUT PLAN \* 11 OF 68 LAYOUT PLAN A

OF 68 COVER SHEET 2

\* 4 OF 68 EXISTING CONDITIONS PLAN A

\* 5 OF 68 EXISTING CONDITIONS PLAN B

\* 6 OF 68 EXISTING CONDITIONS PLAN (

LAYOUT PLAN (

GRADING PLAN A GRADING PLAN B

GRADING PLAN (

UTILITY PLAN

EASEMENT PLAN A

EASEMENT PLAN D

\* 29 OF 68 OVERALL LANDSCAPE/LIGHTING PLAN

\* 28 OF 68 EASEMENT TABULATION PLAN

30 OF 68 LANDSCAPE/LIGHTING PLAN A

31 OF 68 LANDSCAPE/LIGHTING PLAN B

32 OF 68 LANDSCAPE/LIGHTING PLAN C

GRADING PLAN D OVERALL UTILITY PLAN

OVERALL GRADING PLAN

OVERALL EASEMENT PLAN

RIDER MUSSER DEVELOPMENT, LLC 5 KACEY COURT, SUITE 203, MECHANICSBURG, PA 17055 CONTACT: DAVID M. "KELLY" PHIPPS, PRESIDENT/CEO PHONF: 717-458-5450 EMAIL: dkphipps@ridermusserdevelopment.com

OWNER/EQUITABLE OWNER/APPLICAN

### OWNER/APPLICANT

MESSIAH COLLEGE ONE COLLEGE AVENUE MECHANICSBURG, PA 17055 CONTACT: KATHRYNNE G. SHAFER, VP. OF OPERATIONS PHONE: (717) 691-6003 EMAIL: k.shafer@messiah.edu



08/16/17

08/16/17

08/16/17

08/16/17

08/16/17

08/16/17

08/16/17

08/16/17

08/16/17

LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE BASED UPON SURFACE EVIDENCE AND EXISTING DRAWINGS AND ARE NOT GUARANTEED TO BE COMPLETE OR ACCURATE BY H. EDWARD BLACK AND ASSOCIATES, Ltd. CONTRACTORS TO CONTACT PA. ONE CALL SYSTEMS, INC. (1-800-242-1776) TO ESTABLISH EXISTING UTILITY LOCATIONS AT LEAST THREE (3) WORKING DAYS PRIOR TO THE START

OF ANY EARTH MOVING ACTIVITIES. PROJECT SERIAL NO.: 20170300613-000 JANUARY 30, 2017

OVER AND ABOVE THE PA ONE CALL SYSTEM, THE CONTRACTOR SHALL UTILIZE A PROFESSIONAL UTILITY LOCATOR TO LOCATE UTILITIES, PRIVATE AND/OR PUBLIC. IN THE FIELD THREE (3) BUSINESS DAYS PRIOR TO THE START OF CONSTRUCTION. ALL EXCAVATION IN THE AREA OF UTILITIES SHALL BE PROBED BY HAND WHERE CONSTRUCTION IS OVER OR IN CLOSE PROXIMITY TO ANY UTILITIES TO VERIFY UTILITY

> We, Rider Musser Development, the undersigned, owners/equitable owners of the real estate shown and described herein, do hereby certify that we have laid off, platted and subdivided, and hereby lay off, plan and subdivide, said real estate in accordance with

This subdivision shall be known and designated as Oakwood Hills. All streets and alleys shown and not heretofore dedicated are hereby dedicated to the public.

Building setback lines are hereby established as shown on this plan, between which lines and the property lines of the street there shall be erected or maintained no building or structure.

There are strips of ground  $\underline{\text{thirty (30')}}$  feet in width as shown on this plan and marked: "Easement, reserved for the use of public utilities for the installation of water and sewer mains, poles, ducts, lines and wires, subject at all times to the proper authorities and to the easement herein reserved." No buildings or other structures are to be erected or maintained upon said strips of land, but owners of lots in this subdivision shall take their titles subject to the rights of the utilities.

The foregoing covenants (or restrictions) are to run with the land and shall be binding on all parties and all persons claiming under them until January 1, 2042, at which time said covenants (or restrictions) shall be automatically extended for successive periods of 10 years and shall remain in full force and effect unless changed at the end of such period of 10 years by vote of a majority of the then owners of the building sites covered by these covenants (or restrictions).

The right to enforce these provisions by injunction, together with the right to cause the removal, by due process of law, of any structure or part thereof erected or maintained in violation hereof, is hereby dedicated to the public and reserved to the several owners of the several lots in this subdivision and to their

Witness our Hands and Seals this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_ County of Cumberland: , 20 , before me, the

undersigned officer, personally came \_\_\_\_\_ known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument, and acknowledged

\_\_\_\_ executed the same for the

purposes therein contained.

My commission expires:

IN WITNESS WHEREOF, I have hereunto set my hand and official

NOTARY PUBLIC

My commission expires:

\_\_\_\_DAY OF\_\_\_\_ UNDERSIGNED INDIVIDUAL PERSONALLY APPEARED BEFORE ME. KATHRYNNE G. SHAFER, VICE PRESIDENT OF OPERATIONS OF MESSIAH COLLEGE

COMMONWEALTH OF PENNSYLVANIA COUNTY OF CUMBERLAND

WHO BEING DULY SWORN ACCORDING TO LAW, DEPOSE AND SAY THAT THEY ARE THE OWNERS OF THE PROPERTY SHOWN ON THIS PLAN AND THAT THEY ACKNOWLEDGE THE SAME TO BE RECORDED AS SUCH ACCORDING TO LAW.

### OWNER SIGNATURE (MESSIAH COLLEGE)

WITNESS MY HAND AND NOTORIAL SEAL THE DAY AND DATE ABOVE WRITTEN.

NOTARY PUBLIC

### (NOTARIAL SEAL)

OAKWOOD HILLS OWNER IS RESPONSIBLE FOR MAINTENANCE OF STORMWATER MANAGEMENT FACILITIES WHICH RECEIVE STORMWATER FROM TAX PARCEL: 42-11-0276-108.

I ACKNOWLEDGE THE STORMWATER MANAGEMENT FACILITIES AND BMPS TO BE PERMANENT FIXTURES THAT CAN BE ALTERED OR REMOVED ONLY AFTER APPROVAL OF A REVISED PLAN BY UPPER ALLEN

TOWNSHIP.

MESSIAH COLLEGE

I ACKNOWLEDGE THE STORMWATER MANAGEMENT FACILITIES AND BMPS TO BE PERMANENT FIXTURES THAT CAN BE ALTERED OR REMOVED ONLY AFTER APPROVAL OF A REVISED PLAN BY UPPER ALLEN

ATTEST:

RIDER MUSSER DEVELOPMENT LLC.

We, Messiah College, the undersigned, owners/equitable owners of the real estate shown and described herein, do hereby certify that we have laid off, platted and subdivided, and hereby lay off plan and subdivide, said real estate in accordance with the within

This subdivision shall be known and designated as <u>Oakwood Hills</u>. All streets and alleys shown and not heretofore dedicated are hereby dedicated to the public.

Building setback lines are hereby established as shown on this plan, between which lines and the property lines of the street there shall be erected or maintained no building or structure.

their titles subject to the rights of the utilities.

There are strips of ground thirty (30') feet in width as shown on this plan and marked: "Easement, reserved for the use of public utilities for the installation of water and sewer mains, poles, ducts, lines and wires, subject at all times to the proper authorities and to the easement herein reserved." No buildings or other structures are to be erected or maintained upon said strips of land, but owners of lots in this subdivision shall take

The foregoing covenants (or restrictions) are to run with the land and shall be binding on all parties and all persons claiming under them until January 1, 2042, at which time said covenants (or restrictions) shall be automatically extended for successive periods of 10 years and shall remain in full force and effect unless changed at the end of such period of 10 years by vote of a majority of the then owners of the building sites covered by these covenants (or restrictions).

The right to enforce these provisions by injunction, together with the right to cause the removal, by due process of law, of any structure or part thereof erected or maintained in violation hereof, is hereby dedicated to the public and reserved to the several owners of the several lots in this subdivision and to their

Witness our Hands and Seals this \_\_\_\_\_ day of \_\_\_\_\_, 20 . County of Cumberland:

On this, the day of , 20 , before me, the

undersigned officer, personally came \_\_\_ known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument, and acknowledged

that \_\_\_\_\_ executed the same for the

purposes therein contained. IN WITNESS WHEREOF, I have hereunto set my hand and official

NOTARY PUBLIC

COMMONWEALTH OF PENNSYLVANIA COUNTY OF CUMBERLAND

> ON THE\_\_\_\_\_\_, 20\_\_\_\_. THE UNDERSIGNED INDIVIDUAL PERSONALLY APPEARED BEFORE ME,

THIS PLAN RECORDED IN THE OFFICE OF THE RECORDER OF DEEDS IN AND FOR CUMBERLAND CO.

THIS \_\_\_\_\_DAY OF \_\_\_\_\_20\_\_\_.

INSTRUMENT No. \_\_

PARCEL REFERENCE UPI: 42-11-0276-035 UPI: 42-11-0276-009 UPI: 42-11-0276-008A UPI: 42-30-2112-004

UPI: 42-30-2110-018

DAVID M. "KELLY" PHIPPS, PRESIDENT/CEO OF RIDER MUSSER DEVELOPMENT, LLC

WHO BEING DULY SWORN ACCORDING TO LAW, DEPOSE AND SAY THAT THEY ARE THE OWNERS OF THE PROPERTY SHOWN ON THIS PLAN AND THAT THEY ACKNOWLEDGE THE SAME TO BE RECORDED AS SUCH ACCORDING TO LAW.

OWNER SIGNATURE (RIDER NUSSER DEVELOPMENT, LLC)

WITNESS MY HAND AND NOTORIAL SEAL THE DAY AND DATE ABOVE WRITTEN.

(NOTARIAL SEAL) REVIEWED THIS 22 DAY OF MAY, 2017. BY THE CUMBERLAND COUNTY PLANNING

DIRECTOR OF PLANNING

REVIEWED BY THE PLANNING COMMISSION OF UPPER ALLEN TOWNSHIP, THIS 26 DAY OF JUNE 2017.

ATTEST:

SECRETARY:\_

CONDITIONALLT APPROVED BY THE BOARD OF COMMISSIONERS OF UPPER ALLEN TOWNSHIP. THIS 16 DAY OF AUGUST 2017. ALL CONDITIONS OF APPROVAL MET THIS \_\_\_ DAY OF

\_\_\_\_\_, 20\_\_\_\_.

CHAIRMAN:

**DEPARTMENT** 

SECRETARY:

SURVEYORS CERTIFICATE

I, ERIC DIFFENBAUGH, PLS, HEREBY CERTIFY THAT I AM A REGISTERED LAND SURVEYOR IN COMPLIANCE WITH THE LAWS OF THE COMMONWEALTH OF PENNSYLVANIA; THAT THIS PLAN CORRECTLY REPRESENTS A SURVEY COMPLETED BY ME ON

1/24/14 AND REVIEWED AND UPDATED ON \_; THAT ALL MONUMENTS SHOWN THEREON ACTUALLY EXIST: AND THAT THEIR LOCATION. SIZE. TYPE AND MATERIAL ARE ACCURATELY SHOWN.

ERIC DIFFENBAUGH, PLS C.W. JUNKINS ASSOCIATES 50 COVENTRY ASSOCIATES DR.

ENGINEER'S CERTIFICATE

I HEREBY CERTIFY THIS PLAN TO BE CORRECT AS

ELIZABETH C. DAVISON, P.E. I. EDWARD BLACK & ASSOC.

403 NORTH FRONT STREET

NAME ON THIS DATE

HAVE REVIEWED AND HEREBY CERTIFY THAT THE SWM SITE PLAN MEETS ALL DESIGN STANDARDS AND CRITERIA OF THE UPPER ALLEN TOWNSHIP STORMWATER

MANAGEMENT ORDINANCE. H. EDWARD BLACK & ASSOC. COMPANY NAME

HARRISBURG, PA 17110 CITY & STATE

Sheet 1 OF 68

- ALL PROPOSED LOTS SHALL BE SERVED BY PUBLIC SEWER & WATER FACILITIES. WETLAND DETERMINATION & DELINEATION WERE BY VORTEX ENVIRONMENTAL IN DECEMBER, 2013.
- FEMA MAPPING DOES NOT SHOW 100 YEAR FLOOD PLAIN WITHIN THE SITE. PNDI RECEIPT DATED 01-31-2017 LISTED NO POTENTIAL IMPACTS. BOUNDARY AND TOPOGRAPHIC INFORMATION IS REFLECTIVE OF AERIAL MAPPING AND A FIELD SURVEY PERFORMED BY C.W. JUNKINS ASSOCIATES, ON OR ABOUT JANUARY 24, 2014. CONTOUR ELEVATIONS ARE NGVD29 DATUM, HORIZONTAL COORDINATES ARE SPC PA SOUTH NAD83. THE PRIMARY CONTROL POINT AND BENCHMARK IS A CONCRETE MONUMENT ALONG WEST LISBURN
- ROAD AT AN ELEVATION OF 544.90. THIS ELEVATION IS NGVD29 DATUM AND EXISTING CONTOURS ARE RELATIVE TO THE REFERENCED BENCH MARK. LIMITS OF THE STEEP SLOPE CONSERVATION DISTRICT ARE BASED ON ANALYSIS OF THE SURVEYED TOPOGRAPHIC DATA. SLOPE CRITERIA WAS BASED ON UPPER ALLEN TOWNSHIP SUBDIVISION AND LAND DEVELOPMENT ORDINANCE
- THERE ARE NO HISTORICAL FEATURES ON THE SITE ALL KNOWN EXISTING EASEMENTS AND RIGHT-OF-WAYS HAVE BEEN SHOWN ON THIS PLAN AS
- DISCOVERED AS PART OF THE SURVEY OF THE SUBJECT PROPERTY. ALL PROPOSED EASEMENTS AND/OR RIGHT-OF-WAYS ARE ALSO SHOWN ON THIS PLAN. A CROSS ACCESS EASEMENT SHALL BE RECORDED FOR THE PROPOSED PEDESTRIAN TRAIL ON TAX
- PARCEL 42-11-0276-108 AND PROPOSED LOT 1. ). PURSUANT TO ARTICLE XVI OF THE UPPER ALLEN TOWNSHIP CODIFIED ORDINANCES, RESTRICTIONS ON THE USE OF LAND WITHIN THE STEEP SLOPE CONSERVATION DISTRICT EXIST. THE DEVELOPER SHALL COMPLY WITH ALL APPLICABLE UPPER ALLEN TOWNSHIP ORDINANCES IN
- EFFECT AT THE TIME OF SUBMISSION OF THE PLAN. 2. AS PER UPPER ALLEN TOWNSHIP ORDINANCE, THERE SHALL BE A MINIMUM OF TWO CONCRETE
- S. NOTHING SHALL BE PLACED, PLANTED, SET OR PUT WITHIN THE AREA OF AN EASEMENT THAT WOULD ADVERSELY AFFECT THE FUNCTION OF THE EASEMENT OR CONFLICT WITH THE EASEMENT
- 4. ALL AREAS SHOWN AS WITHIN PROPOSED STREET RIGHT-OF-WAYS ARE OFFERED FOR DEDICATION TO UPPER ALLEN TOWNSHIP. 5. THE DEVELOPER SHALL BE RESPONSIBLE FOR THE PLACEMENT OF ALL STREET NAME AND TRAFFIC CONTROL SIGNS. STREET NAME SIGNS AND TRAFFIC CONTROL SIGNS SHALL BE INSTALLED PER THE UPPER ALLEN TOWNSHIP'S ZONING ORDINANCE. STREET NAMES AND ADDRESSES SHALL BE
- APPROVED BY THE TOWNSHIP AND THE UNITED STATES POST OFFICE. 3. ALL INTERSECTION CONTROLS (STOP AND YIELD SIGNS) SHALL BE DETERMINED PRIOR TO STREET DEDICATION BASED ON A TRAFFIC AND ENGINEERING STUDY BY A TRAFFIC ENGINEER. SIGNS SHALL
- BE INSTALLED PER PENNDOT STANDARDS AND SPECIFICATIONS. . TRAFFIC CONTROLS SIGNS MUST BE POSTED ON PENNDOT APPROVED BREAKAWAY POSTS IN ACCORDANCE WITH THE MOST RECENT VERSION OF THE TC-8700 SERIES IN PENNDOT PUBLICATION
- 18. ALL TRAFFIC CONTROL SIGNS SHALL BE POSTED IN ACCORDANCE WITH THE 2009 MUTCD AND THE MOST RECENT VERSION OF PENNDOT PUBLICATION 236M, "HANDBOOK OF APPROVED SIGNS". 19. ALL PROPOSED PEDESTRIAN FACILITIES REFLECTED ON THESE PLANS SHALL BE CONSTRUCTED TO COMPLY WITH THE FOLLOWING STANDARDS: A. PENNDOT DESIGN MANUAL 2, CHAPTER 6.
- PENNDOT STANDARDS FOR ROADWAY CONSTRUCTION, PUBLICATION 72M, RC-67M. C. U.S. ACCESS BOARD, PUBLIC RIGHT OF WY ACCESSIBILITY GUIDELINES (PROWAG) AND ADA
- ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES (ADAAG). 20. AS-BUILT MYLAR PLANS, TWO SETS OF PAPER PRINTS, AND ELÈCTRONÍC DATA FILES TO BE PROVIDED TO THE TOWNSHIP. ALL DRAWINGS MUST BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER OR LAND SURVEYOR ATTESTING TO THE CORRECTNESS OF THE FACILITY INFORMATION
- 21. A HIGHWAY OCCUPANCY PERMIT IS REQUIRED PURSUANT TO SEC. 420 OF THE ACT OF JUNE 1, 1945 (P.L. 1242, NO. 425) AS AMENDED, BEFORE ANY CONSTRUCTION IS INITIATED WITHIN A STATE HIGHWAY OR BEFORE ACCESS TO A STATE HIGHWAY IS PERMITTED.
- . CONTRACTOR SHALL REFER TO APPROVED HOP AND ROW PLANS FOR ALL WORK INSIDE THE PENNDOT ROW. 23. REQUIRED OPEN SPACE AREA SHALL BE MAINTAINED BY THE OWNER AND SHALL BE PERMANENTLY PRESERVED
- 24. THE OWNER SHALL MAINTAIN THE STREET LIGHTS ON OAKWOOD HILLS DRIVE.

### **CONSTRUCTION NOTES**

- THE CONTRACTOR SHALL COMPLY WITH ALL TOWNSHIP, STATE AND FEDERAL REGULATIONS IN EFFECT AT THE TIME OF CONSTRUCTION.
- ALL WORK TO BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS, SPECIFICATIONS, AND CODES (WHERE APPLICABLE) OF UPPER ALLEN TOWNSHIP, AND PENNDOT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMPLEMENTATION OF NECESSARY FROSION CONTROL MEASURES AS APPROVED BY THE CUMBERLAND COUNTY CONSERVATION DISTRICT. NO EARTH DISTURBANCE SHALL TAKE PLACE ON THE SITE PRIOR TO THIS APPROVAL. THE CONTRACTOR MUST OBTAIN A COPY OF THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN PRIOR TO THE START OF CONSTRUCTION.
- THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE AND THE CUMBERLAND COUNTY CONSERVATION DISTRICT AT LEAST 7 DAYS PRIOR TO THE START OF CONSTRUCTION AND 72 HOURS BEFORE THE COMPLETION OF CONSTRUCTION.
- THE CONTRACTOR SHALL IMPLEMENT PERIMETER EROSION CONTROL MEASURES PRIOR TO THE START OF CONSTRUCTION.
- THE CONTRACTOR SHALL ADHERE TO THE EARTH MOVING STAGING SEQUENCE AS DESCRIBED IN THE EROSION CONTROL PLAN AND MAINTAIN ALL EROSION CONTROL MEASURES, TEMPORARY AS WELL
- AS PERMANENT, THROUGHOUT THE LIFE OF THE PROJECT. DURING CONSTRUCTION, CONTRACTOR SHALL PROTECT ALL DRAINAGE STRUCTURES, WALKWAYS. ROADWAYS AND PARKING AREAS. STREAMS AND DRAINAGE WAYS FROM SEDIMENTATION. H. EDWARD BLACK AND ASSOCIATES, LTD. MAKES NO REPRESENTATION AS TO THE ACCURACY OF
- ACTUAL ON-SITE INFORMATION. LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE BASED ON SURFACE EVIDENCE, EXISTING DRAWINGS, AND INFORMATION FURNISHED BY THE RESPECTIVE UTILITY
- CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL UTILITY LOCATIONS PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL CONTACT PA ONE CALL 1-800-242-1776 AT LEAST THREE (3) WORKING DAYS PRIOR TO THE START OF ANY EARTH MOVING ACTIVITIES.
- THE CONTRACTOR SHALL CHECK AND VERIFY ALL EXISTING CONDITIONS AND CONTACT THE SITE ENGINEER IF THERE ARE QUESTIONS OR CONFLICTS REGARDING THE CONSTRUCTION DOCUMENTS AND/OR FIELD CONDITIONS PRIOR TO THE START OF CONSTRUCTION.
- THE CONTRACTOR SHALL SAFEGUARD ALL UTILITIES DURING CONSTRUCTION AND VERIFY THE LOCATION OF THE PROPOSED CONNECTIONS. 2. DO NOT INTERRUPT EXISTING UTILITY SERVICES TO FACILITIES OCCUPIED AND USED BY THE OWNER
- OR OTHERS, EXCEPT WHEN SUCH INTERRUPTIONS HAVE BEEN AUTHORIZED IN WRITING BY THE OWNER OR ENGINEER. INTERRUPTIONS SHALL OCCUR ONLY AFTER ACCEPTABLE TEMPORARY UTILITY SERVICE HAS BEEN PROVIDED. PROPOSED DRIVEWAYS ON INDIVIDUAL LOTS SHALL BE REQUIRED TO SATISFY MINIMUM SIGHT DISTANCE REQUIREMENTS AT UPPER ALLEN TOWNSHIP.
- I. ALL LOTS OR UNITS SHALL BE SERVED WITH GRAVITY SEWER LATERALS OR MAINS EXTENDING T SANITARY SEWER MANHOLES LOCATED WITHIN EXISTING OR PROPOSED PUBLIC SANITARY SEWER
- 5. THE PERMITTEE FOR THIS SEWER EXTENSION IS UPPER ALLEN TOWNSHIP 16. SEWER TAPPING FEE WILL BE PAID AT THE THEN CURRENT RATE PER EDU AS DETERMINED BY THE
- LATEST RESOLUTION OF THE TOWNSHIP OF UPPER ALLEN. . BEFORE CONSTRUCTION BEGINS, THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH UPPER ALLEN TOWNSHIP CONSTRUCTION DETAILS AS PROVIDED. FOR CERTAIN DESIGN STANDARDS. 18. ALL SANITARY SEWER CONSTRUCTION MATERIALS, METHODS, AND APPURTENANCES SHALL BE IN
- ACCORDANCE WITH UPPER ALLEN TOWNSHIP'S STANDARD SPECIFICATIONS AND DETAILS IN EFFECT AT THE TIME OF THE CONSTRUCTION. THE CONTRACTOR SHOULD REFER TO THE DETAIL IN THE STANDARD CONSTRUCTION AND MATERIAL SPECIFICATIONS OF UPPER ALLEN TOWNSHIP. 9. PROVIDE A MINIMUM HORIZONTAL CLEARANCE OF TEN (10) FEET BETWEEN THE SANITARY SEWER
- AND OTHER UNDERGROUND UTILITIES. PROVIDE A MINIMUM HORIZONTAL CLEARANCE OF FIVE (5) FEET BETWEEN THE SANITARY SEWER AND EXISTING AND PROPOSED STRUCTURES SUCH AS MANHOLES, INLETS, CURBS, ETC. D. ALL SANITARY SEWER MAINS AND LATERALS/WATER MAINS AND SERVICE LINES/STORM SEWER
- PIPING CROSSINGS SHALL MAINTAIN A MINIMUM 18 INCH VERTICAL CLEARANCE. ALL CROSSINGS HAVING LESS THAN 18 INCH CLEARANCE SHALL BE APPROVED BY AND INSTALLED AS DIRECTED BY . PROVIDE A MINIMUM COVER OF FIVE (5) FEET OVER THE SANITARY SEWER MEASURED FROM FINISH
- GRADE FLEVATION. 2. WATER MAIN AND APPURTENANCES TO BE DESIGNED AND INSTALLED BY SUEZ WATER PENNSYLVANIA. REVISIONS TO THE POTABLE WATER SYSTEM LAYOUT MAY BE REQUIRED UPON
- COMPLETION AND APPROVAL OF SUEZ WATER PA'S WATER SYSTEM DESIGN FOR THE DEVELOPMENT. 23. ALL WATER LINE CONSTRUCTION SHALL COMPLY WITH THE REGULATIONS OF THE LOCAL WATER
- 24. ALL WATER LINES SHALL HAVE A MINIMUM COVER OF 4' FROM FINISH GRADE. 25. FIRE HYDRANTS SHALL BE FITTED WITH A 5 INCH STORZ HYDRANT ADAPTER. 26. THE CONTRACTOR SHALL MAINTAIN AND PROTECT PROPERTY LINE STAKES AND MONUMENTS
- THROUGHOUT THE COMPLETION OF THE PROJECT. 27. CONTOURS AND SPOT ELEVATIONS ARE CONTROLS ONLY. ALL GRADES SHALL BE SMOOTH AND CONTINUOUS. TOPS AND BOTTOMS OF SLOPES SHALL BE ROUNDED.
- 28. PROPOSED ELEVATIONS ON PAVED SURFACES INDICATE FINISHED GRADES. 29. SPOT ELEVATIONS SHOWN IN PARKING AREAS REPRESENT BOTTOM OF CURB ELEVATIONS UNLESS
- 30. ALL LAWN AREAS ADJACENT TO CURBING AND PAVING SHALL BE FLUSH WITH THE TOP OF CURB, WALKS, AND ROADWAYS. I. ALL VEGETATED AREAS TO BE GRADED TO PROVIDE POSITIVE DRAINAGE AT A MINIMUM SLOPE OF TWO PERCENT (2%). MINIMUM SLOPE AWAY FROM BUILDINGS TO BE TWO PERCENT (2%) UNLESS
- OTHERWISE NOTED IN PAVED AREAS. . ALL DISTURBED AREAS AND AREAS WITH EXISTING EROSION PROBLEMS ARE TO BE DRESSED WITH TOPSOIL, SEEDED AND MULCHED. THE CONTRACTOR SHALL SAFEGUARD & PROTECT ALL VEGETATION NOTED TO BE PROTECTED
- THROUGHOUT THE DURATION OF THE PROJECT. 34. AT NO TIME SHALL THE CONTRACTOR SCALE UNDIMENSIONED AREAS. ANY AND ALL QUESTIONS RELATING TO LAYOUT OR DIMENSIONS SHALL BE DIRECTED TO THE LANDSCAPE ARCHITECT OR
- ARCHITECT PRIOR TO START OF CONSTRUCTION. 55. ALL SANITARY SEWERS CONSTRUCTED IN PUBLIC STREETS SHALL BE SUBJECT TO BACKFILL COMPACTION TESTING AT THE DEVELOPER'S EXPENSE.
- 36. ALL SANITARY SEWER CLEANOUTS IN PAVED AREAS SHALL CONFORM TO UPPER ALLEN TOWNSHIP SEWER AUTHORITY STANDARDS.

### **CONSTRUCTION EARTHWORK NOTES**

- A. COMPREHENSIVE FOUNDATION INVESTIGATIONS SHALL BE COMPLETED FOR ALL MULTI-STORY
- A. PLACE AND COMPACT APPROVED SOIL FILL IN EIGHT (8") INCH LOOSE LAID LAYERS WHERE LARGE
  - COMPACTION EQUIPMENT CAN BE OPERATED AND IN FOUR (4") INCH LOOSE LAID LAYERS WHERE SMALL COMPACTION EQUIPMENT, SUCH AS HAND OPERATED TAMPERS, IS REQUIRED TO REQUIRED
  - A.1. ALL FILL MATERIALS SHALL MEET GEOTECHNICAL STANDARDS AND BE REVIEWED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT. A.2. FOR FILL SLOPES GREATER THAN FIFTEEN (15') FEET IN HEIGHT, USE STRUCTURAL FILL. FOR
  - FILL SLOPES LESS THAN FIFTEEN (15') FEET IN HEIGHT USE SATISFACTORY FILL. A.3. UNDER GRASS AND PLANTED AREAS. USE SATISFACTORY SOIL. A.4. UNDER WALKS AND PAVEMENTS, USE SATISFACTORY SOIL.
  - A.5. UNDER STEPS AND RAMPS, USE STRUCTURAL FILL WITHIN THREE (3') FEET OF SUBGRADE AND SATISFACTORY SOIL FILL OR ROCK FILL AT DEEPER DEPTHS. A.6. UNDER BUILDING SLABS, USE STRUCTURAL FILL WITHIN FIVE (5') FEET OF SUBGRADE AND SATISFACTORY FILL AT DEEPER DEPTHS.
- A.7. UNDER FOOTINGS AND FOUNDATIONS, USE STRUCTURAL FILL WITHIN FIVE (5') FEET OF SUBGRADE AND SATISFACTORY FILL OR ROCK FILL AT DEEPER DEPTHS.
- A. COMPACT SOIL MATERIALS TO NOT LESS THAN THE FOLLOWING MODIFIED PROCTOR METHOD PERCENTAGES OF MAXIMUM DRY UNIT WEIGHT PER ASTM D 1557: A.1. UNDER STRUCTURES, BUILDING SLABS, STEPS, AND PAVEMENTS, AND WITHIN FILL SLOPES
  - GREATER THAN FIFTEEN (15) FEET IN TOTAL HEIGHT SCARIFY AND RECOMPACT TOP 12 INCHES OF EXISTING SUBGRADE AND EACH LAYER OF BACKFILL OR FILL SOIL MATERIAL AT A.2. PLACE BACKFILL AND FILL SOIL MATERIALS EVENLY ON ALL SIDES OF STRUCTURES TO
  - REQUIRED ELEVATIONS, AND UNIFORMLY ALONG THE FULL LENGTH OF EACH STRUCTURE. A.3. UNDER WALKWAYS, SCARIFY AND RECOMPACT TOP 6 INCHES BELOW SUBGRADE AND COMPACT EACH LAYER OF BACKFILL OR FILL SOIL MATERIAL AT 95 PERCENT.
  - A.4. UNDER TURF OR UNPAVED AREAS. SCARIFY AND RECOMPACT TOP 6 INCHES BELOW SUBGRADE AND COMPACT EACH LAYER OF BACKFILL OR FILL SOIL MATERIAL AT 85 PERCENT. A.5. FOR UTILITY TRENCHES, COMPACT EACH LAYER OF INITIAL AND FINAL BACKFILL SOIL MATERIAL AT 95 PERCENT IN PAVEMENT AND UNDER STRUCTURES, AND 85 PERCENT UNDER
  - A.6. ALL CHOKE STONE LAYERS, REGARDLESS OF LOCATION, AT 95 PERCENT.

### WATER QUALITY BMP OPERATION & MAINTENANCE

STORMWATER MANAGEMENT OWNERSHIP, ADMINISTRATION &

The proposed storm sewers located off public street rights—of—way, swales, outlet protection and stormwater management basins will be privately owned and maintained. The owners will be:

Rider Musser Development, LLC Messiah College 5 Kacey Court, Suite 203 One College Ävenue Mechanicsburg, PA 17055 Mechanicsburg, PA 17055 (717) 691-6003 (717) 458-5450

The new off road stormwater system will not be dedicated to the Upper Allen Township and will remain under the ownership of Rider Musser Development, LLC and Messiah College or successors and

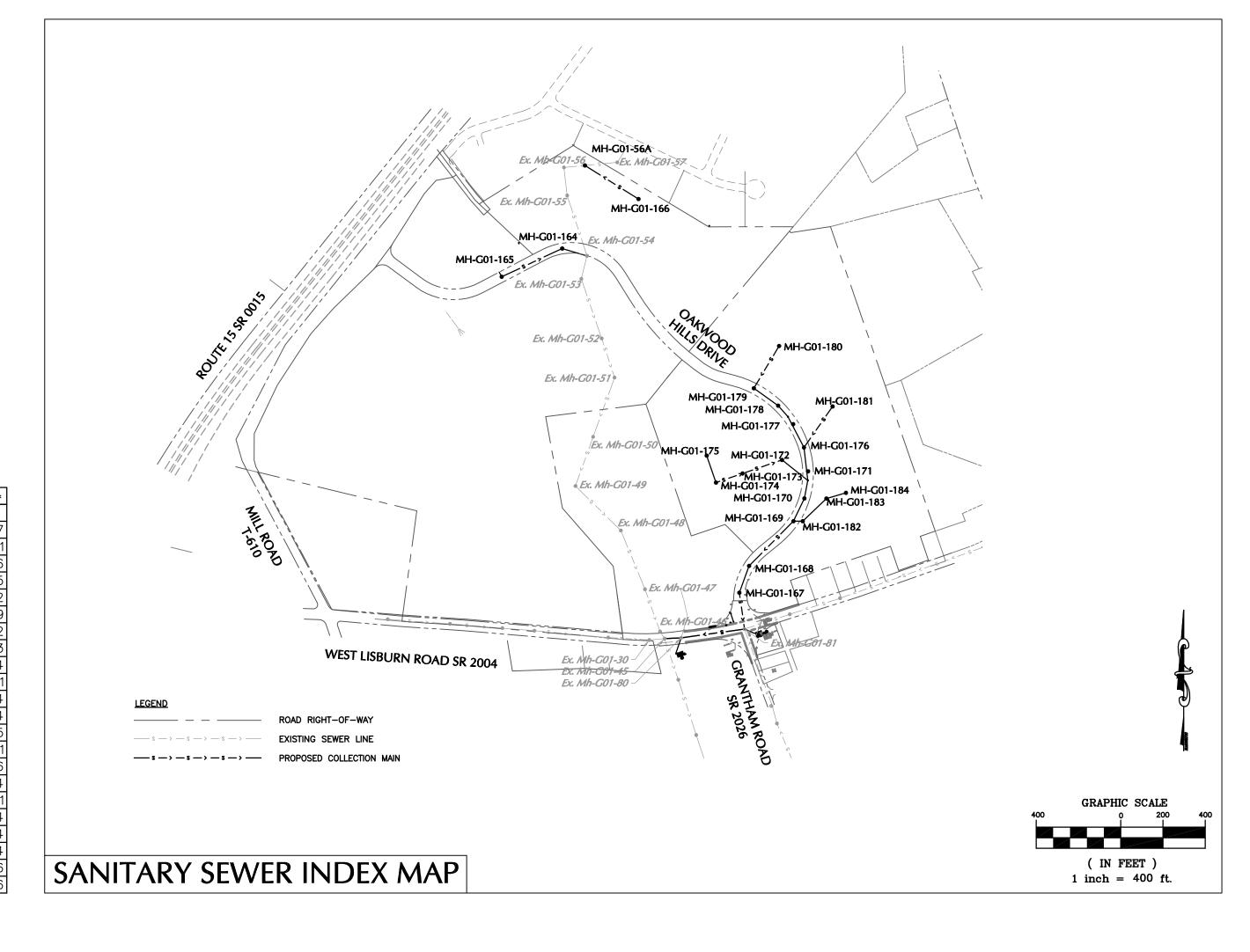
Upper Allen Township shall have right to inspect the facilities at any time; require the owner to take corrective measures and assign the owner reasonable time period for any necessary action; and authorize maintenance to be done and lien all costs of the work against the property of the private entity responsible for maintenance, if corrective measures are not taken within the specified time

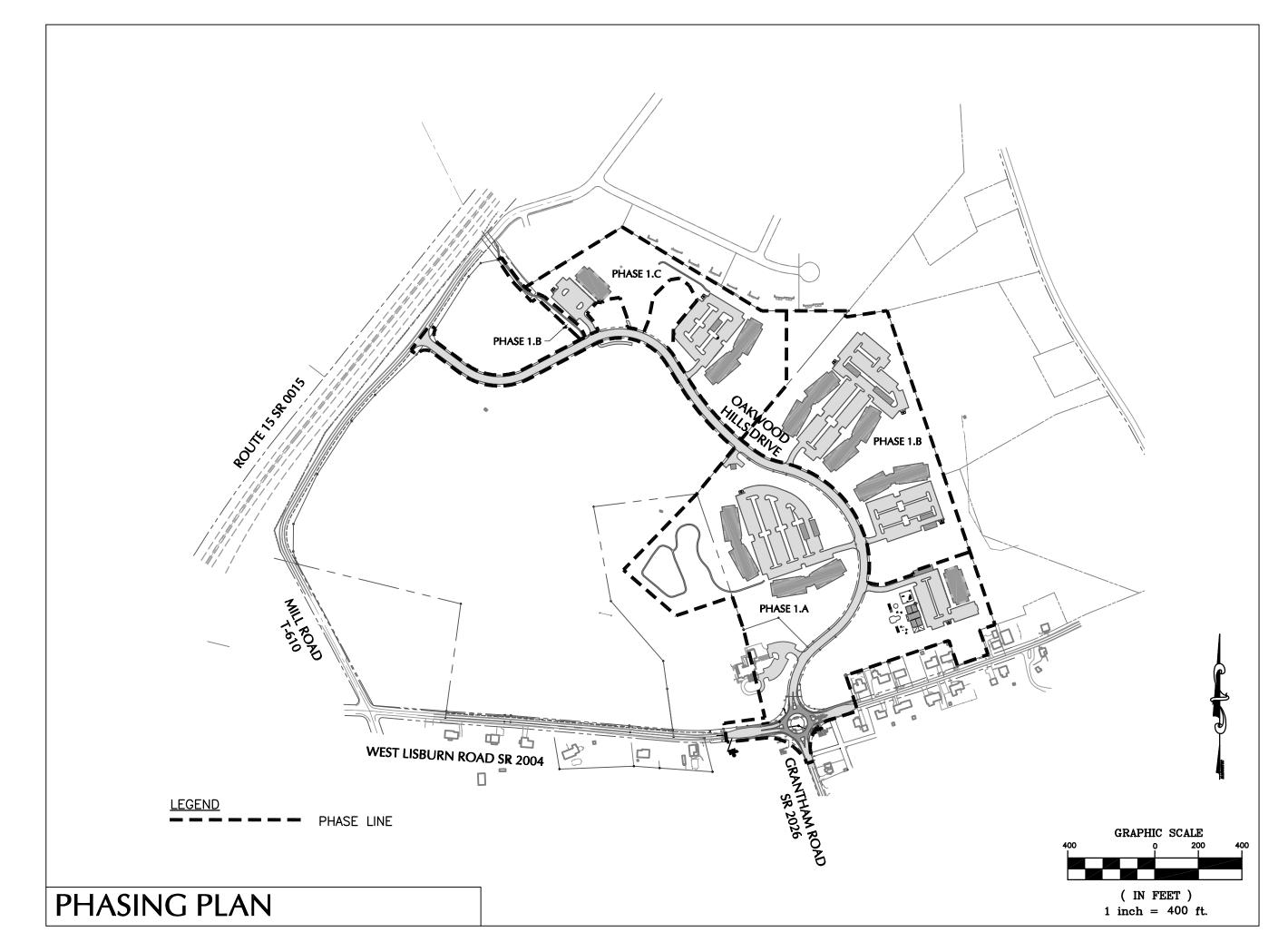
- WATER QUALITY INLET OPERATION & MAINTENANCE SCHEDULE • Monitor Monthly for the first year of a new installation after the site has been stabilized, and
- Check sediment depth and note any surface pollutants in the structure. The pollutants collected in SNOUT equipped structures will consist of floatable debris and oils on the surface of the captured water, and grit and sediment in the sumped bottom of the structure. • It is best to schedule maintenance based on the solids collected in the sump. Optimally, the structure should be cleaned when the sump is no more than half full (e.g. when 1 foot of
- material collects in a 2 foot sump, clean it out). • Structures should also be cleaned if a spill or other incident causes a larger than normal accumulation of pollutants in a structure.
- Maintenance is best done with a vacuum truck. • If oil absorbent hydrophobic booms are being used in the structure to enhance hydrocarbon capture and removals, they should be checked on a monthly basis, and serviced or replaced when more than 2/3 of the boom is submerged, indicating a nearly saturated state. • All collected wastes must be handled and disposed of according to local and state environmental
- To maintain the SNOUT hoods themselves, an annual inspection of the antisiphon vent and access hatch are recommended. Flushing of the vent with water or compressed air, or gently rod with a flexible wire. Opening and closing the access hatch once a year.
- VEGETATED SWALE OPERATIONS & MAINTENANCE SCHEDULE
- The swale shall be inspected twice per year, between March 15th & April 30th and again between October 1st & November 30th to evaluate its health and to remove and replace any dead, diseased or unsalvageable vegetation. Pests and diseases of the vegetation shall be treated as necessary with low-toxic, preventative measures. Program of prevention and treatment shall be approved by the owner or his representative prior to implementation of the program.
- Areas of bare soil shall be raked, seeded and mulched immediately. • During times of extended drought, look for physical features of stress. Water in the early morning as needed to maintain one (1") inch of water weekly.
- · Remove accumulated sediment and debris from the channel on a monthly basis. • The soils and organic material shall be tested annually and the pH adjusted per the tests to
- maintain a pH required for the planting. • After each rainstorm, inspect surface to insure that drainage paths are clear and that ponding water dissipates over 4—6 hours. (water may pond for longer times during the winter and early spring.) The swale is not a pond. It should not provide a breeding ground for mosquitoes. Inspect vegetation on side slopes and channel bottom for erosion and formation of rills or gullies, correct as needed to design grade.
- Mow and trim vegetation to ensure safety, aesthetics, proper swale operation, or to suppress weeds and invasive vegetation; dispose of cutting in a local composting facility; mow only when
- Mow meadow seed mix area only once per year during dormant season (early spring).
- DETENTION/INFILTRATION BASIN OPERATION & MAINTENANCE SCHEDULE • All basin structures expected to receive and/or trap debris and sediment should be inspected for clogging and excessive debris and sediment accumulation at least four (4) times per year, as wel as after every storm greater than 1 inch. o Structures include basin bottoms, trash racks, outlet structures, riprap or gabion structures, and
- Sediment removal should be conducted when the basin is completely dry. Sediment should be disposed of properly and once sediment is removed, disturbed areas need to be immediately • Mowing and/or trimming of vegetation should be preformed as necessary to sustain the system,
- but all detritus should be removed from the basin. o Vegetated areas should be inspected annually for erosion. o Vegetated areas should be inspected annually for unwanted growth of exotic/invasive species.
- o Vegetative cover should be maintained of 95 percent. If vegetative cover has been reduced by • Grass on the stormwater basin emergency spillway shall be mowed on a regular basis to prevent
- brush and tree growth and to provide adequate channel flow. • Upon finding any component of the drainage structures not functioning as intended, that portion of the structure shall be immediately cleaned, repaired or replaced.

### STREET SUMMARY TABLE

STREET NAME	LENGTH	ROW WIDTH	CARTWAY WIDTH
OAKWOOD HILLS DRIVE	3,512 FT	50 FT	34 FT

SANITARY SEWER	R MANHOLE NORTH	ING & EASTING *
MH NUMBER	NORTHING	EASTING
MH-G01-56A	305333.65	2180109.37
MH-G01-164	304940.41	2180001.71
MH-G01-165	304848.16	2179794.76
MH-G01-166	305174.81	2180362.95
MH-G01-167	303310.76	2180840.22
MH-G01-168	303437.66	2180886.29
MH-G01-169	303649.42	2181096.32
MH-G01-170	303757.18	2181148.03
MH-G01-171	303885.43	2181165.44
MH-G01-172	303939.43	2181041.7
MH-G01-173	303875.32	2180855.24
MH-G01-174	303832.14	2180729.64
MH-G01-175	303959.80	2180685.75
MH-G01-176	303998.39	2181146.01
MH-G01-177	304108.78	2181094.86
MH-G01-178	304196.37	2181023.84
MH-G01-179	304278.67	2180908.8
MH-G01-180	304478.82	2181028.34
MH-G01-181	304192.60	2181281.44
MH-G01-182	303649.37	2181140.04
MH-G01-183	303756.61	2181252.16
MH-G01-184	303783.52	2181344.6
* COORDINATI	ES BASED ON	PA83-SF



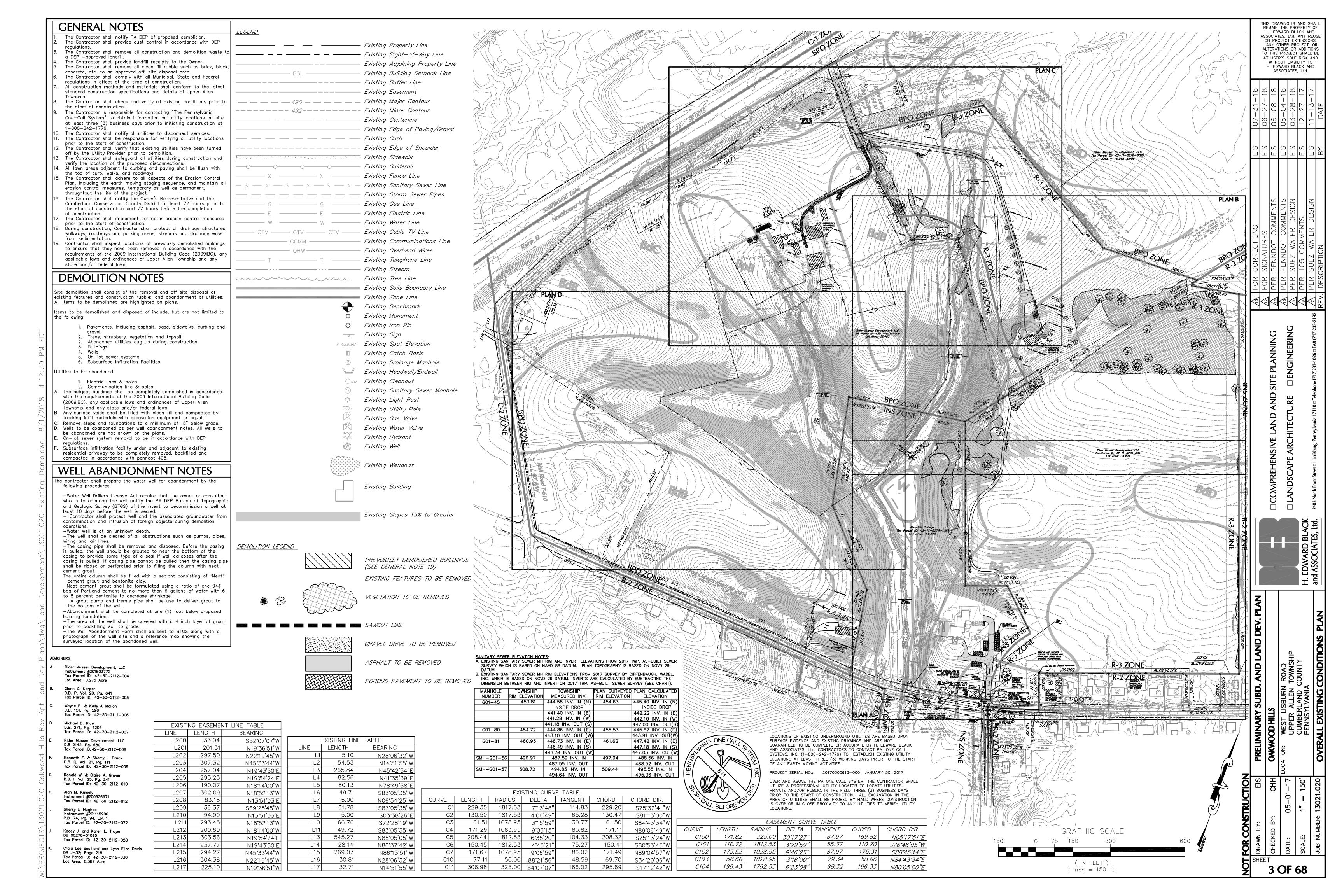


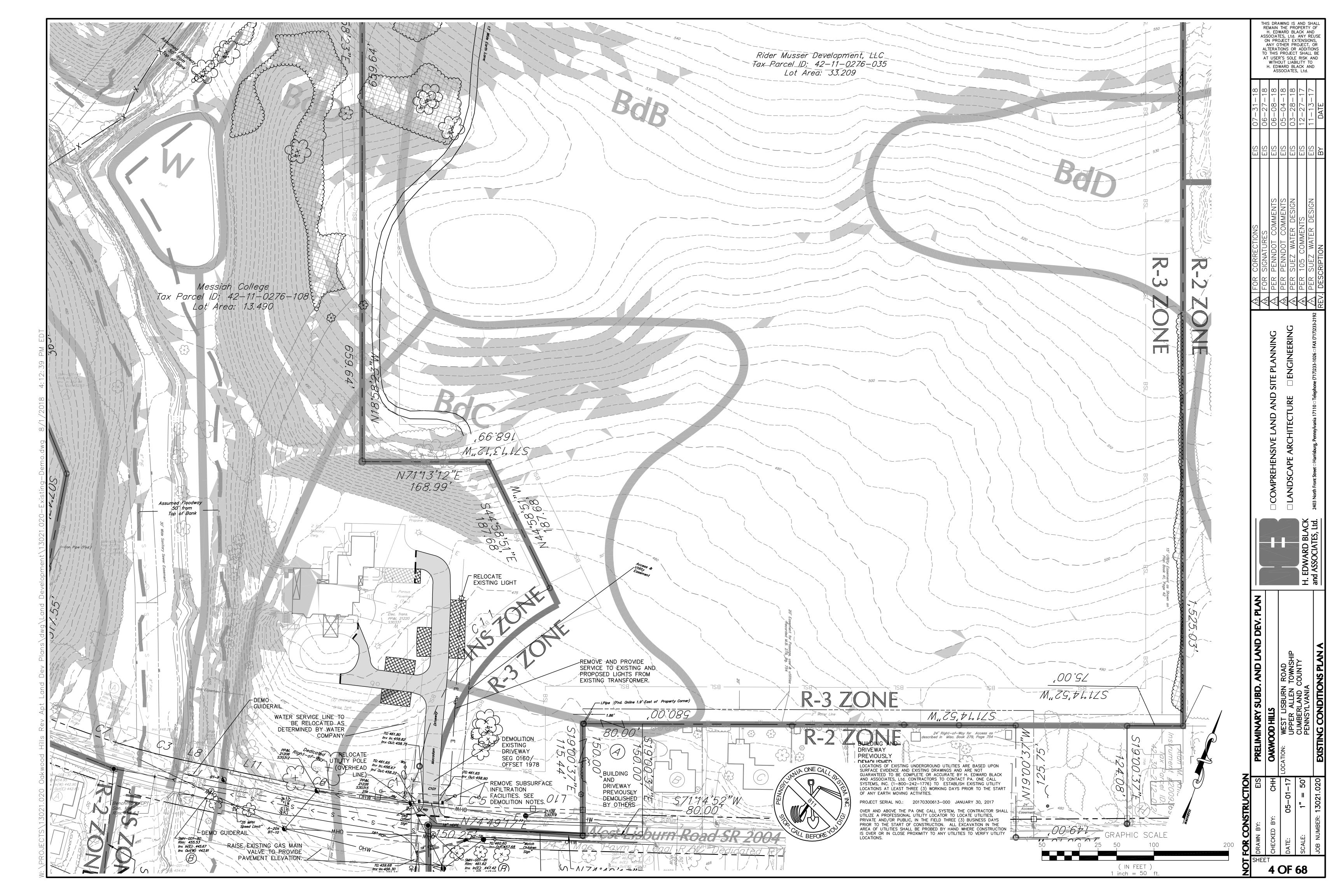
PH	<u>ASII</u>	NG SCH	EDULE
PH/	\SE	UNITS	FILING DATE
1.	Α	137	2017
1.	В	177	2022
1.	С	78	2027
<u> </u>			

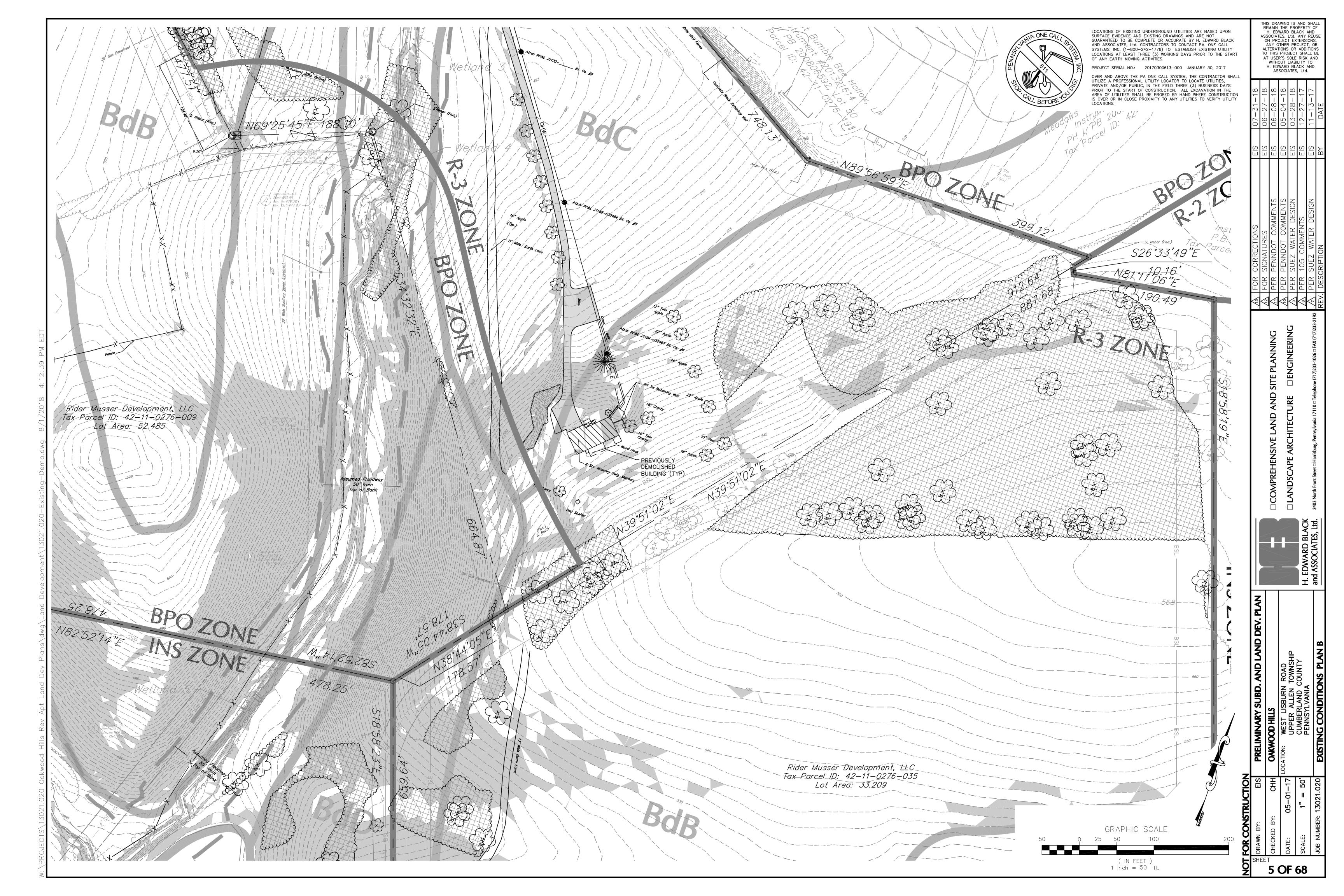
REMAIN THE PROPERTY OF H. EDWARD BLACK AND ASSOCIATES, Ltd. ANY REUS ON PROJECT EXTENSIONS, ANY OTHER PROJECT, OR ALTERATIONS OR ADDITIONS TO THIS PROJECT SHALL BE AT USER'S SOLE RISK AND H. EDWARD BLACK AND

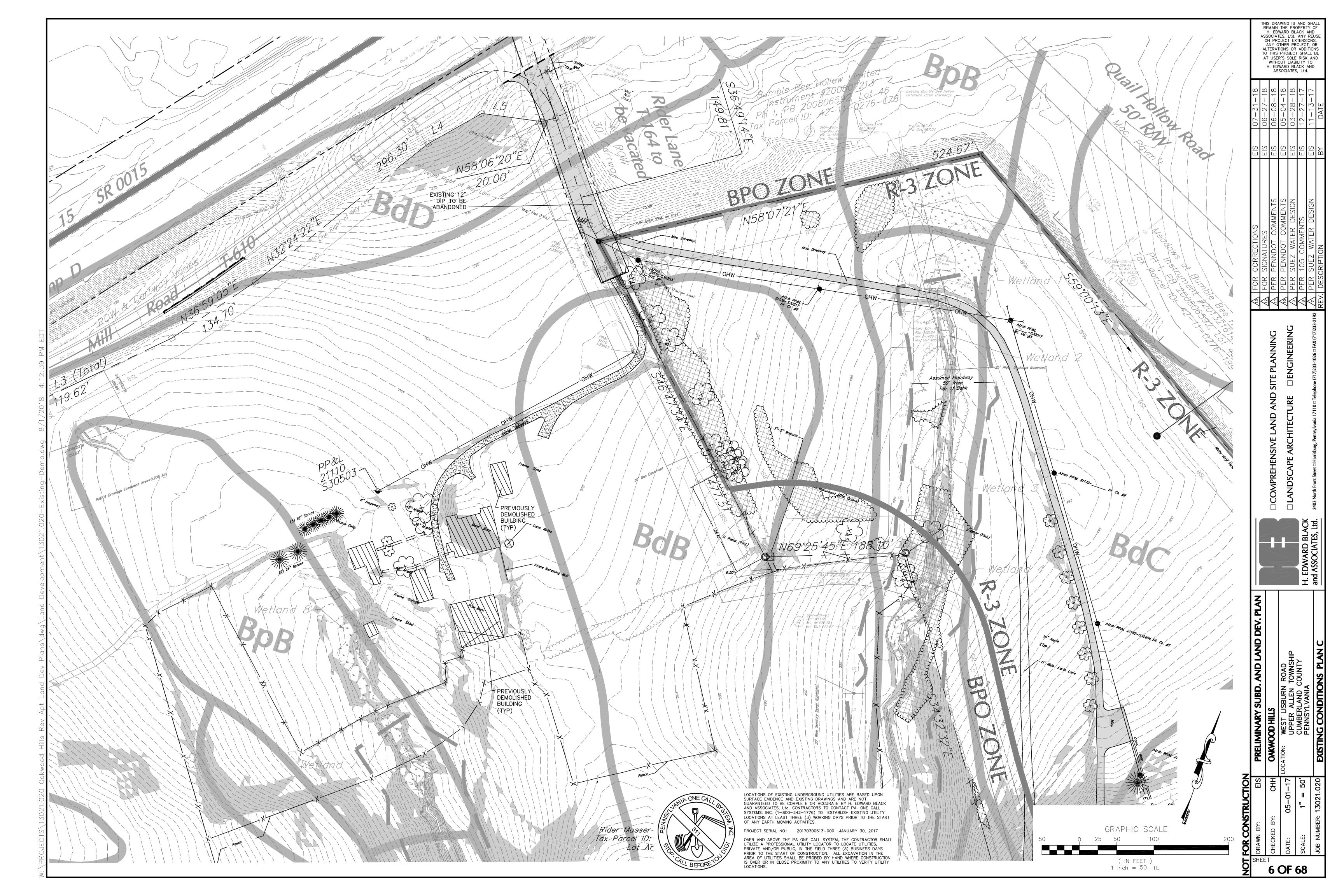
	73		LIJ	01-01-0	
	$\nabla V$	FOR SIGNATURES	EIS	06-27-18	
UNIZ UNIZ	$\mathbb{V}$	PER PENNDOT COMMENTS	EIS	06-08-18	AS
() 	$\mathbb{W}$	PER PENNDOT COMMENTS	EIS	05-04-18	SOCI
FERING	$\mathbb{V}$	PER SUEZ WATER DESIGN	EIS	03-28-18	ATES
	$\mathbb{V}$	PER 105 COMMENTS	EIS	12-27-17	, Ltd
□ FAX (717)233-2192	$\nabla$	PER SUEZ WATER DESIGN	EIS	11-13-17	l.
	REV.	REV. DESCRIPTION	ВҮ	DATE	

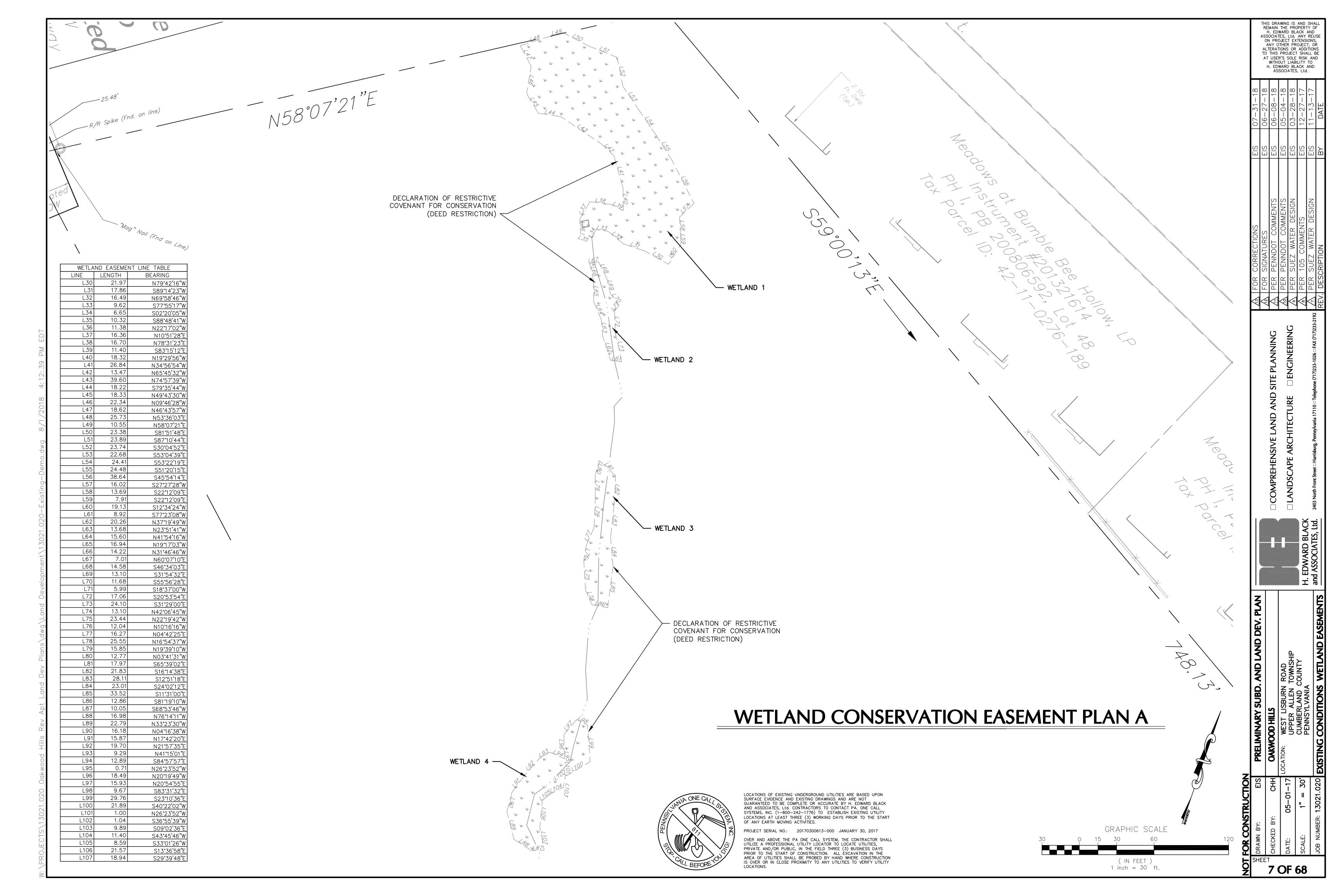
2 OF 68

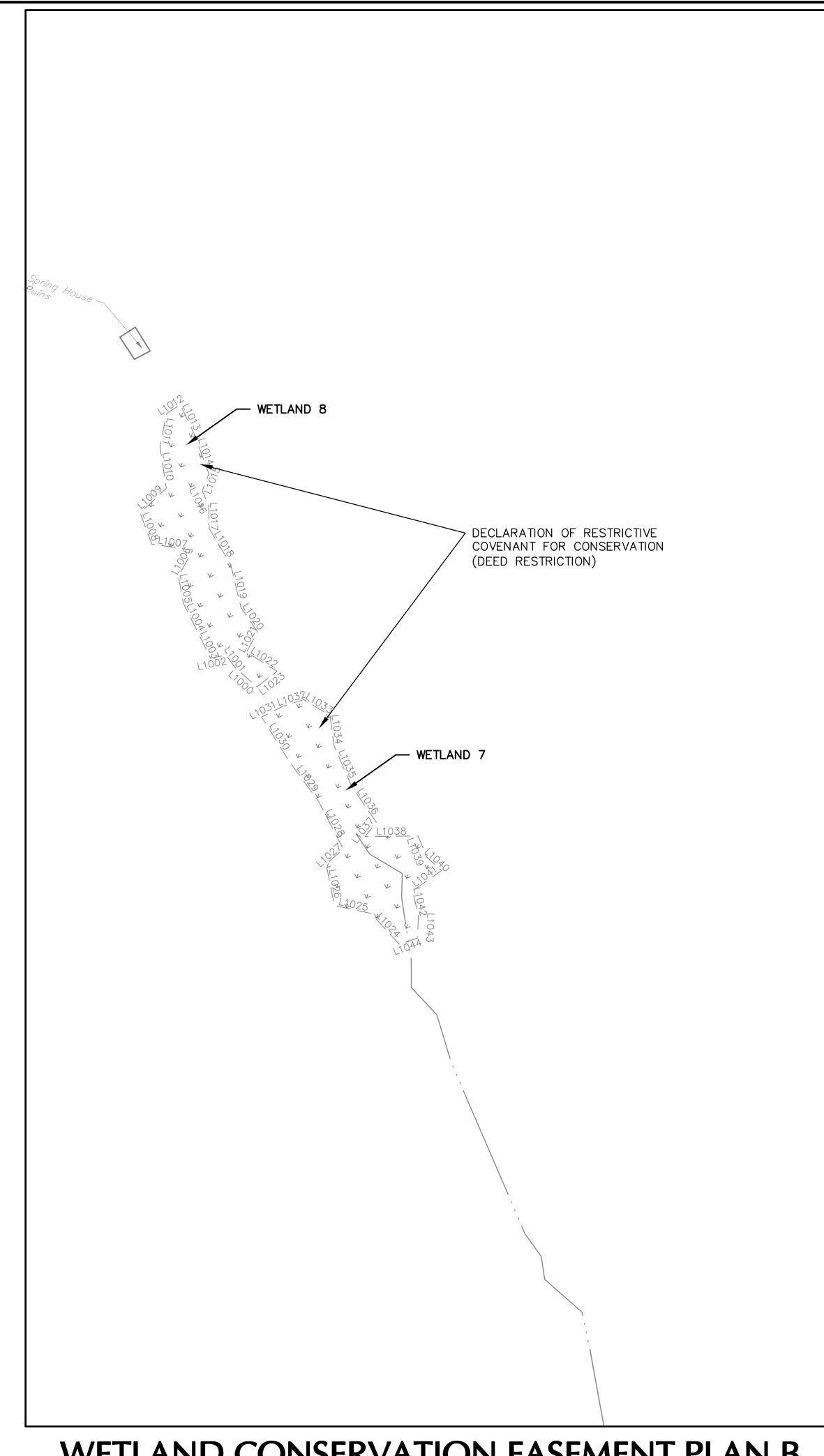


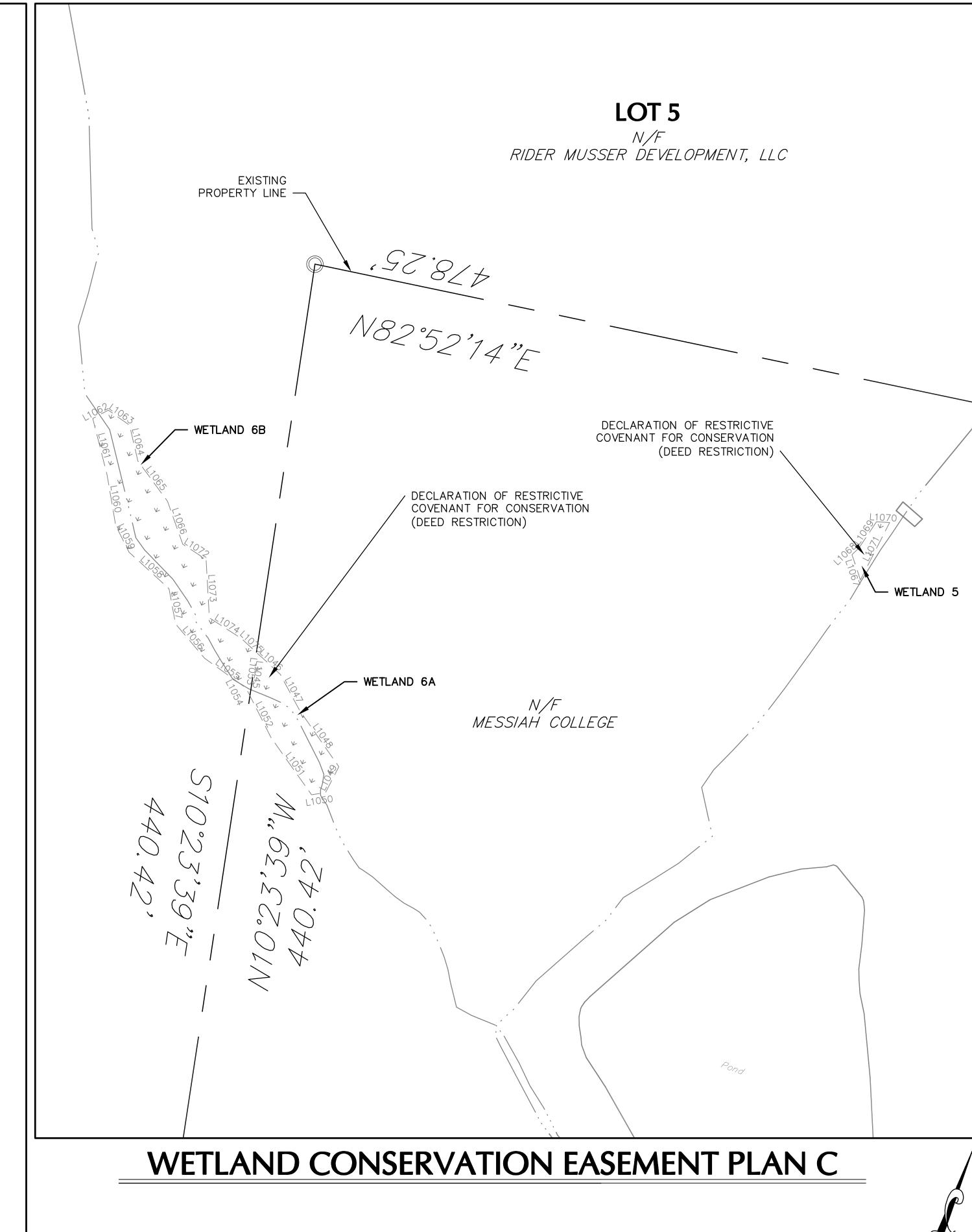












GRAPHIC SCALE

( IN FEET )

1 inch = 30 ft.

8 OF 68

LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE BASED UPON SURFACE EVIDENCE AND EXISTING DRAWINGS AND ARE NOT GUARANTEED TO BE COMPLETE OR ACCURATE BY H. EDWARD BLACK AND ASSOCIATES, Ltd. CONTRACTORS TO CONTACT PA. ONE CALL

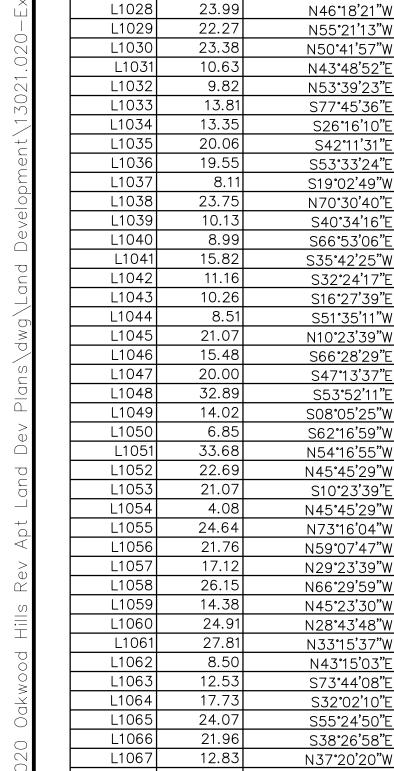
SYSTEMS, INC. (1-800-242-1776) TO ESTABLISH EXISTING UTILITY LOCATIONS AT LEAST THREE (3) WORKING DAYS PRIOR TO THE START

UTILIZE A PROFESSIONAL UTILITY LOCATOR TO LOCATE UTILITIES, PRIVATE AND/OR PUBLIC, IN THE FIELD THREE (3) BUSINESS DAYS

PRIOR TO THE START OF CONSTRUCTION. ALL EXCAVATION IN THE AREA OF UTILITIES SHALL BE PROBED BY HAND WHERE CONSTRUCTION IS OVER OR IN CLOSE PROXIMITY TO ANY UTILITIES TO VERIFY UTILITY

THIS DRAWING IS AND SHALL REMAIN THE PROPERTY OF H. EDWARD BLACK AND ASSOCIATES, Ltd. ANY REUSE ON PROJECT EXTENSIONS, ANY OTHER PROJECT, OR ALTERATIONS OR ADDITIONS TO THIS PROJECT SHALL BE

TO THIS PROJECT SHALL BE
AT USER'S SOLE RISK AND
WITHOUT LIABILITY TO
H. EDWARD BLACK AND
ASSOCIATES, Ltd.



4.59

N27°10'46"E N14°49'02"

N74°21'03"E

S08°01'22"W

S75°56'46"E

S76°07'41"E

S66°28'29"E

WETLAND EASEMENT LINE TABLE

14.38

19.72

16.07

11.43

BEARING

N67°16'21"W

N56°19'23"W S59°15'40"W

N44°53'20"W

N45°17'47"W

N29°27'08"W

N09°44'19"E S79°26'38"W N39°01'08"W N27°39'54"E N27°35'50"W

N07°39'18"W N38°55'30"E

S44°35'29"E

S39°07'12"E S02°34'10"W

S43°35'43"E S20°24'45"E S49°49'54"E

S32°19'59"E

S08°40'29"W

S76°58'15"E

N30°19'38"W N29°30'23"E

LINE LENGTH

L1001

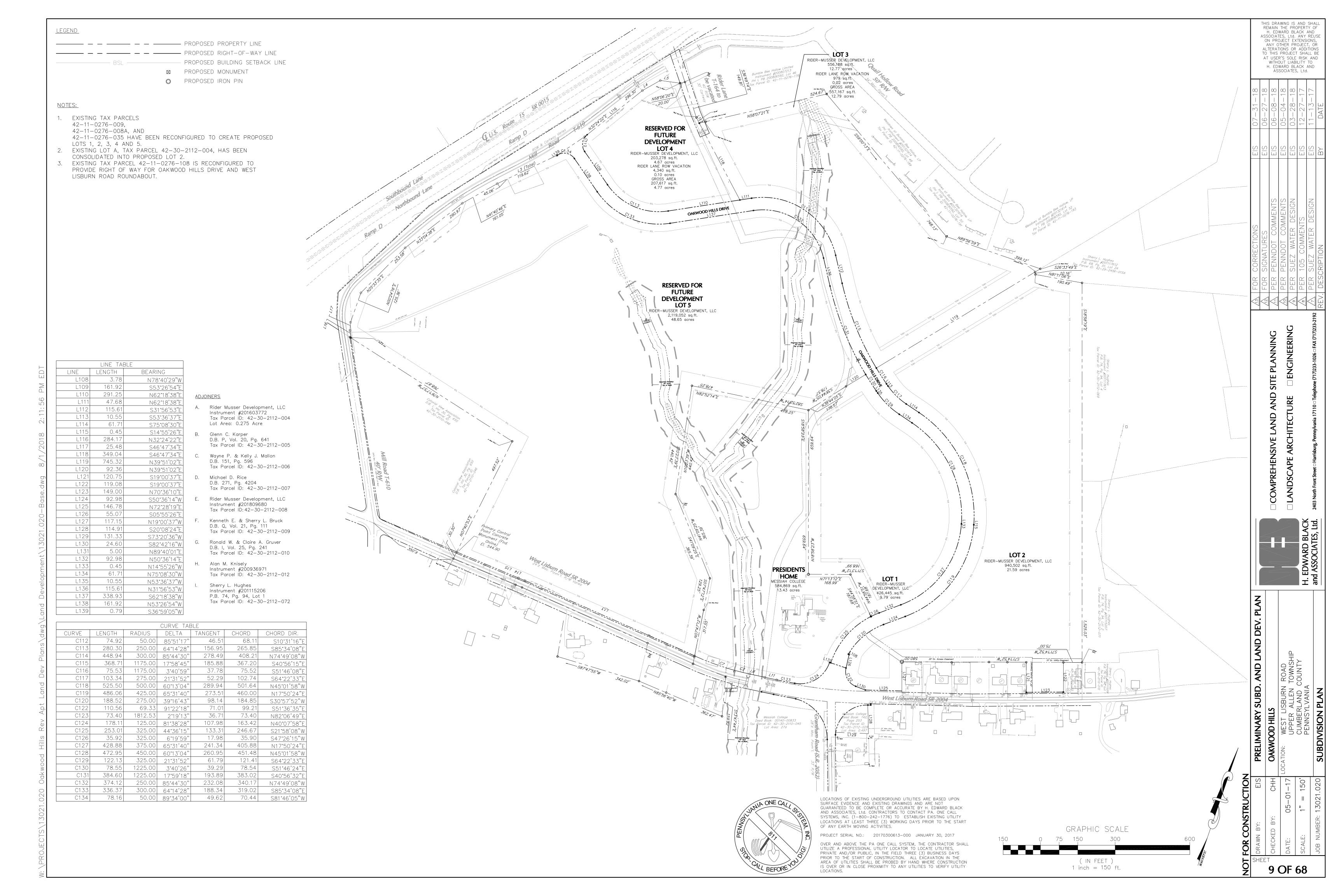
L1003

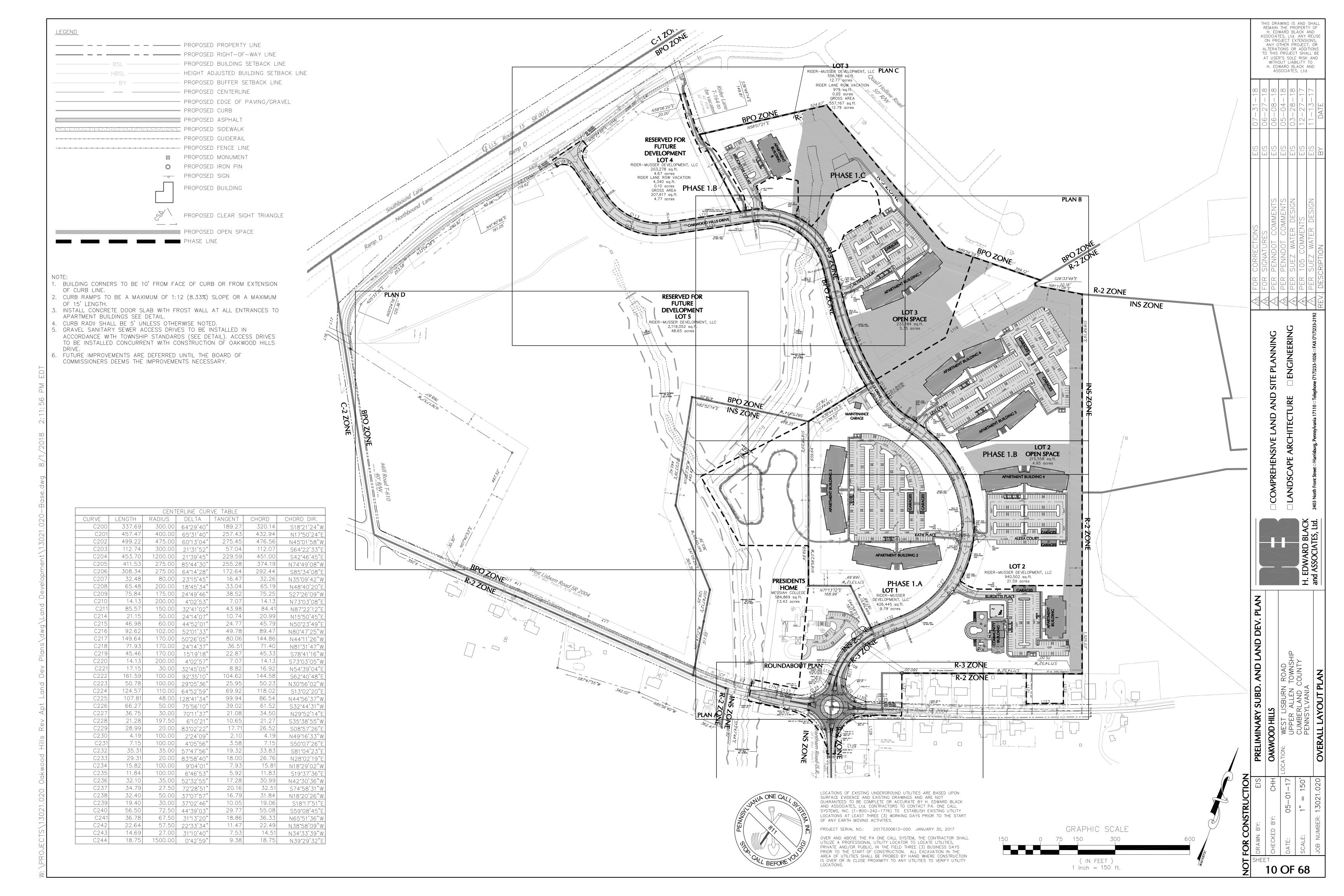
L1006

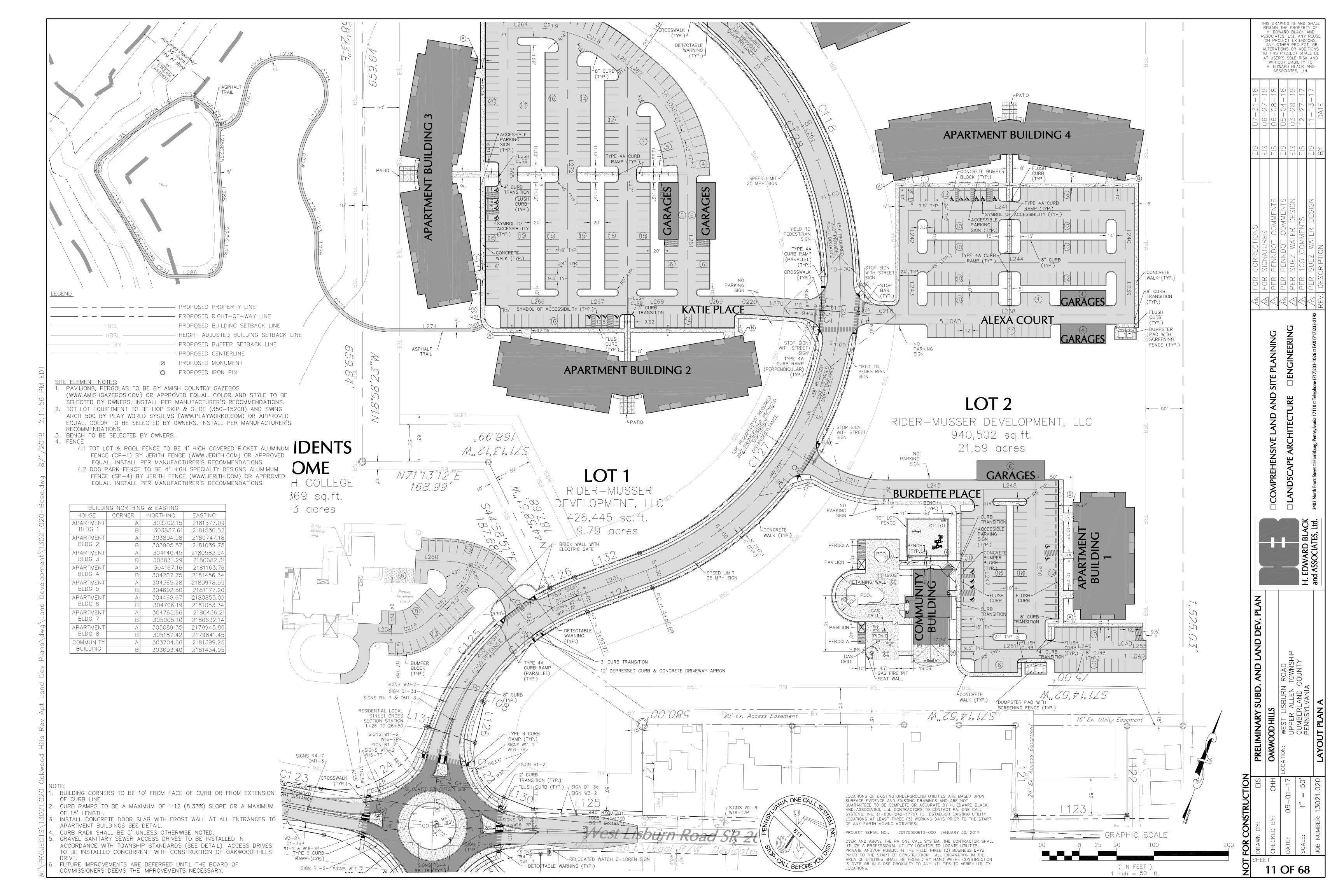
L1013 L1014

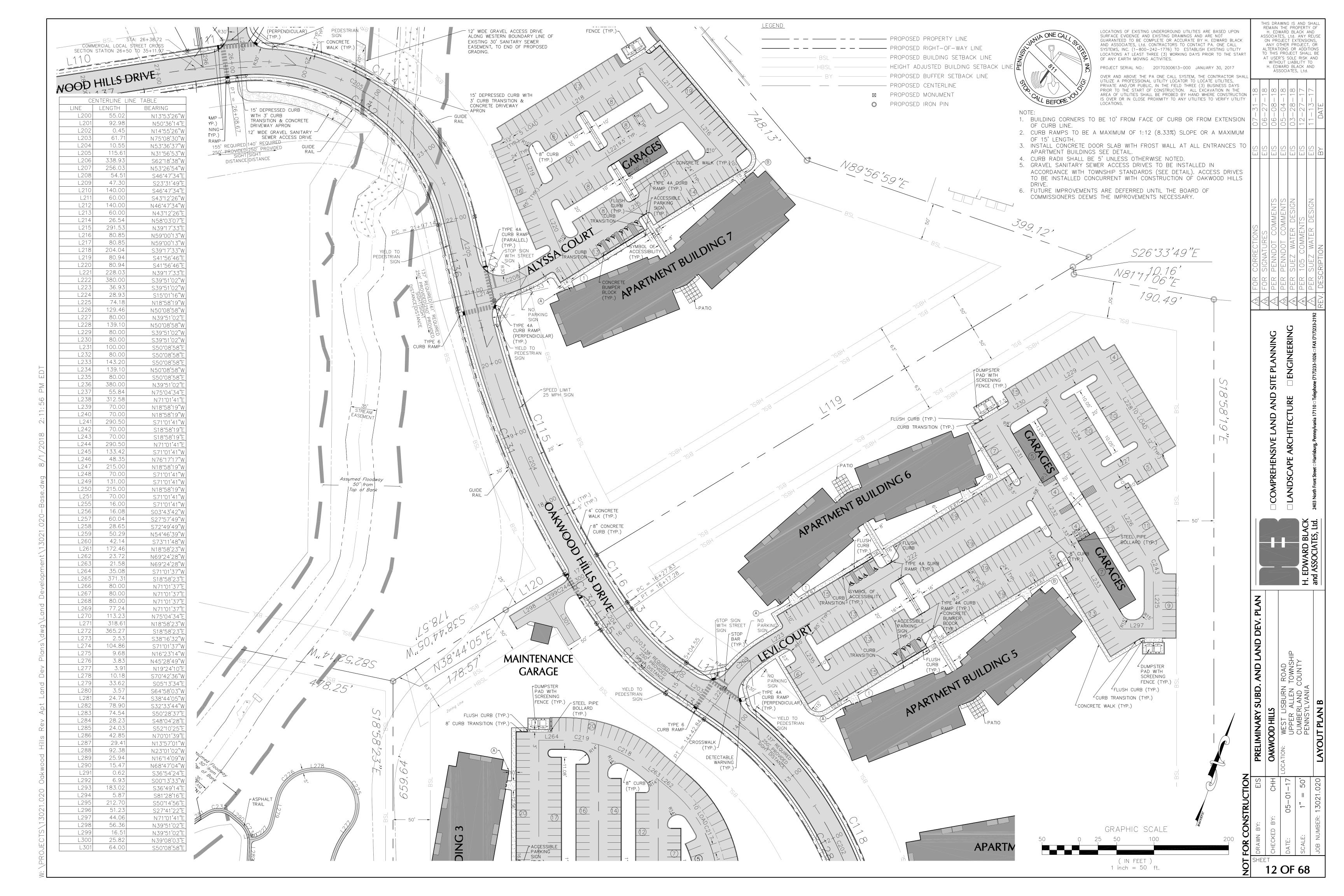
L1016

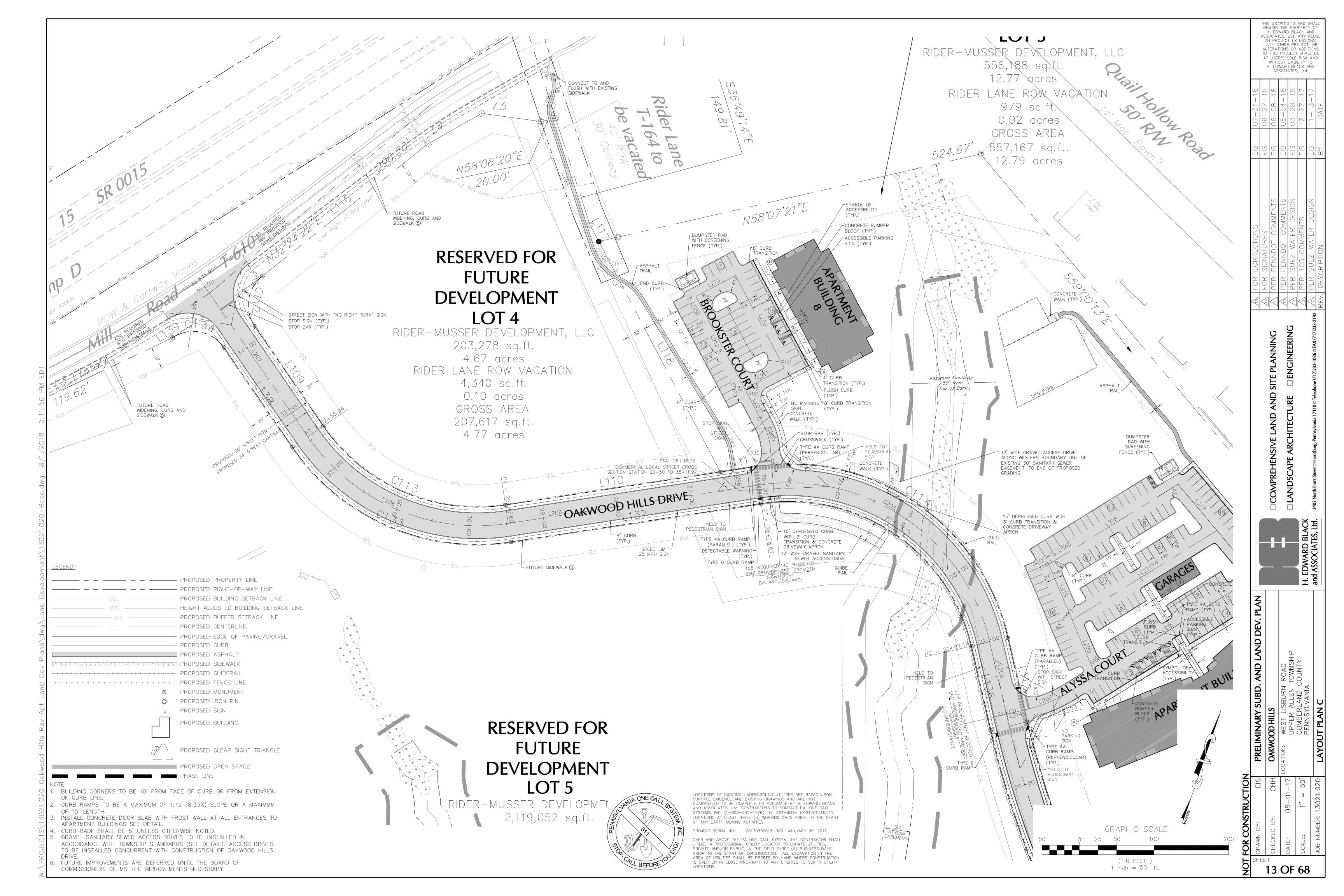


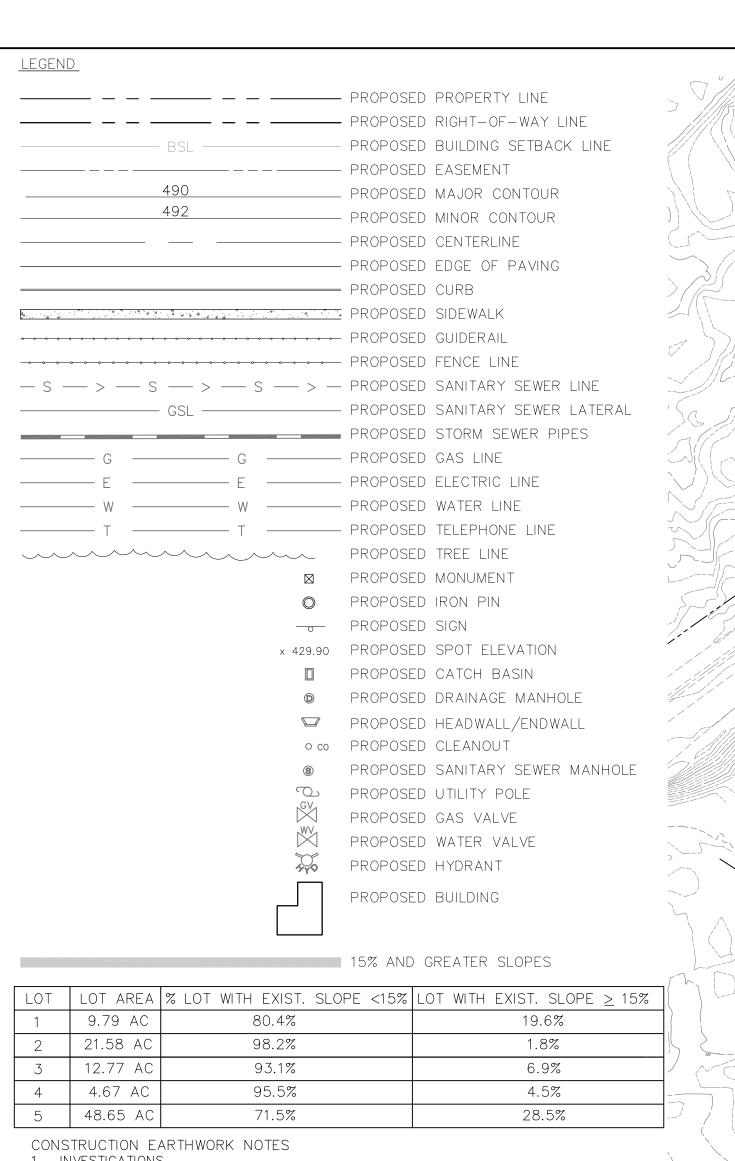












A. COMPREHENSIVE FOUNDATION INVESTIGATIONS SHALL BE COMPLETED FOR ALL

2. SOIL FILLS

A. PLACE AND COMPACT APPROVED SOIL FILL IN EIGHT (8") INCH LOOSE LAID LAYERS WHERE LARGE COMPACTION EQUIPMENT CAN BE OPERATED AND IN FOUR (4") INCH LOOSE LAID LAYERS WHERE SMALL COMPACTION EQUIPMENT, SUCH AS HAND OPERATED TAMPERS, IS REQUIRED TO REQUIRED ELEVATIONS AS FOLLOWS:

A.1. ALL FILL MATERIALS SHALL MEET GEOTECHNICAL STANDARDS AND BE REVIEWED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT. A.2. FOR FILL SLOPES GREATER THAN FIFTEEN (15') FEET IN HEIGHT, USE STRUCTURAL FILL. FOR FILL SLOPES LESS THAN FIFTEEN (15') FEET IN HEIGHT USE SATISFACTORY FILL.

A.3. UNDER GRASS AND PLANTED AREAS, USE SATISFACTORY SOIL.

A.4. UNDER WALKS AND PAVEMENTS, USE SATISFACTORY SOIL. A.5. UNDER STEPS AND RAMPS, USE STRUCTURAL FILL WITHIN THREE (3') FEET OF SUBGRADE AND SATISFACTORY SOIL FILL OR ROCK FILL AT

A.6. UNDER BUILDING SLABS, USE STRUCTURAL FILL WITHIN FIVE (5') FEET OF SUBGRADE AND SATISFACTORY FILL AT DEEPER DEPTHS.

A.7. UNDER FOOTINGS AND FOUNDATIONS, USE STRUCTURAL FILL WITHIN FIVE (5') FEET OF SUBGRADE AND SATISFACTORY FILL OR ROCK FILL AT DEEPER DEPTHS.

3. COMPACTION OF SOIL BACKFILLS AND FILLS

A. COMPACT SOIL MATERIALS TO NOT LESS THAN THE FOLLOWING MODIFIED PROCTOR METHOD PERCENTAGES OF MAXIMUM DRY UNIT WEIGHT PER ASTM D

A.1. UNDER STRUCTURES, BUILDING SLABS, STEPS, AND PAVEMENTS, AND WITHIN FILL SLOPES GREATER THAN FIFTEEN (15) FEET IN TOTAL HEIGHT SCARIFY AND RECOMPACT TOP 12 INCHES OF EXISTING SUBGRADE AND EACH LAYER OF BACKFILL OR FILL SOIL MATERIAL AT 95 PERCENT.

A.2. PLACE BACKFILL AND FILL SOIL MATERIALS EVENLY ON ALL SIDES OF STRUCTURES TO REQUIRED ELEVATIONS, AND UNIFORMLY ALONG THE FULL LENGTH OF EACH STRUCTURE.

A.3. UNDER WALKWAYS, SCARIFY AND RECOMPACT TOP 6 INCHES BELOW SUBGRADE AND COMPACT EACH LAYER OF BACKFILL OR FILL SOIL MATERIAL AT 95 PERCENT.

A.4. UNDER TURF OR UNPAVED AREAS, SCARIFY AND RECOMPACT TOP 6 INCHES BELOW SUBGRADE AND COMPACT EACH LAYER OF BACKFILL OR FILL SOIL MATERIAL AT 85 PERCENT. A.5. FOR UTILITY TRENCHES, COMPACT EACH LAYER OF INITIAL AND FINAL

BACKFILL SOIL MATERIAL AT 95 PERCENT IN PAVEMENT AND UNDER

3. ALL VEGETATED AREAS TO BE GRADED TO PROVIDE POSITIVE DRAINAGE AT A

BUILDINGS TO BE TWO PERCENT (2%) UNLESS OTHERWISE NOTED IN PAVED

MINIMUM SLOPE OF TWO PERCENT (2%). MINIMUM SLOPE AWAY FROM

STRUCTURES, AND 85 PERCENT UNDER UNPAVED AREAS. A.6. ALL CHOKE STONE LAYERS, REGARDLESS OF LOCATION, AT 95 PERCENT.

SANITARY SEWER ELEVATION NOTES:

A. EXISTING SANITARY SEWER MH RIM AND INVERT ELEVATIONS FROM 2017 TWP. AS—BUILT SEWER SURVEY WHICH IS BASED ON NAVD 88 DATUM. PLAN TOPOGRAPHY IS BASED ON NGVD 29

B. EXISTING SANITARY SEWER MH RIM ELEVATIONS FROM 2017 SURVEY BY DIFFENBAUGH, WADEL, INC. WHICH IS BASED ON NGVD 29 DATUM. INVERTS ARE CALCULATED BY SUBTRACTING THE DIMENSION BETWEEN RIM AND INVERT ON 2017 TWP. AS—BUILT SEWER SURVEY (SEE CHART).

MANHOLE	TOWNSHIP	TOWNSHIP	PLAN SURVEYED	PLAN CALCULATED
NUMBER	RIM ELEVATION	MEASURED INV.	RIM ELEVATION	ELEVATION
G01-45	453.81	444.58 INV. IN (N)	454.63	445.40 INV. IN (N)
		INSIDE DROP		INSIDE DROP
		441.40 INV. IN (E)		442.22 INV. IN (E)
		441.28 INV. IN (W)		442.10 INV. IN (W)
		441.18 INV. OUT (S)		442.00 INV. OUT(S)
G01-80	454.72	444.86 INV. IN (E)	455.53	445.67 INV. IN (E)
		443.10 INV. OUT (W)		443.91 INV. OUT(W)
G01-81	460.93	446.73 INV. IN (E)	461.62	447.42 INV. IN (E)
		446.49 INV. IN (S)		447.18 INV. IN (S)
		446.34 INV. OUT (W)		447.03 INV. OUT(W)
SMH-G01-56	496.97	487.59 INV. IN	497.94	488.56 INV. IN
		487.55 INV. OUT		488.52 INV. OUT
SMH-G01-57	508.72	494.83 INV. IN	509.44	495.55 INV. IN
		494.64 INV. OUT		495.36 INV. OUT



PRIOR TO THE START OF CONSTRUCTION. ALL EXCAVATION IN THE

AREA OF UTILITIES SHALL BE PROBED BY HAND WHERE CONSTRUCTION

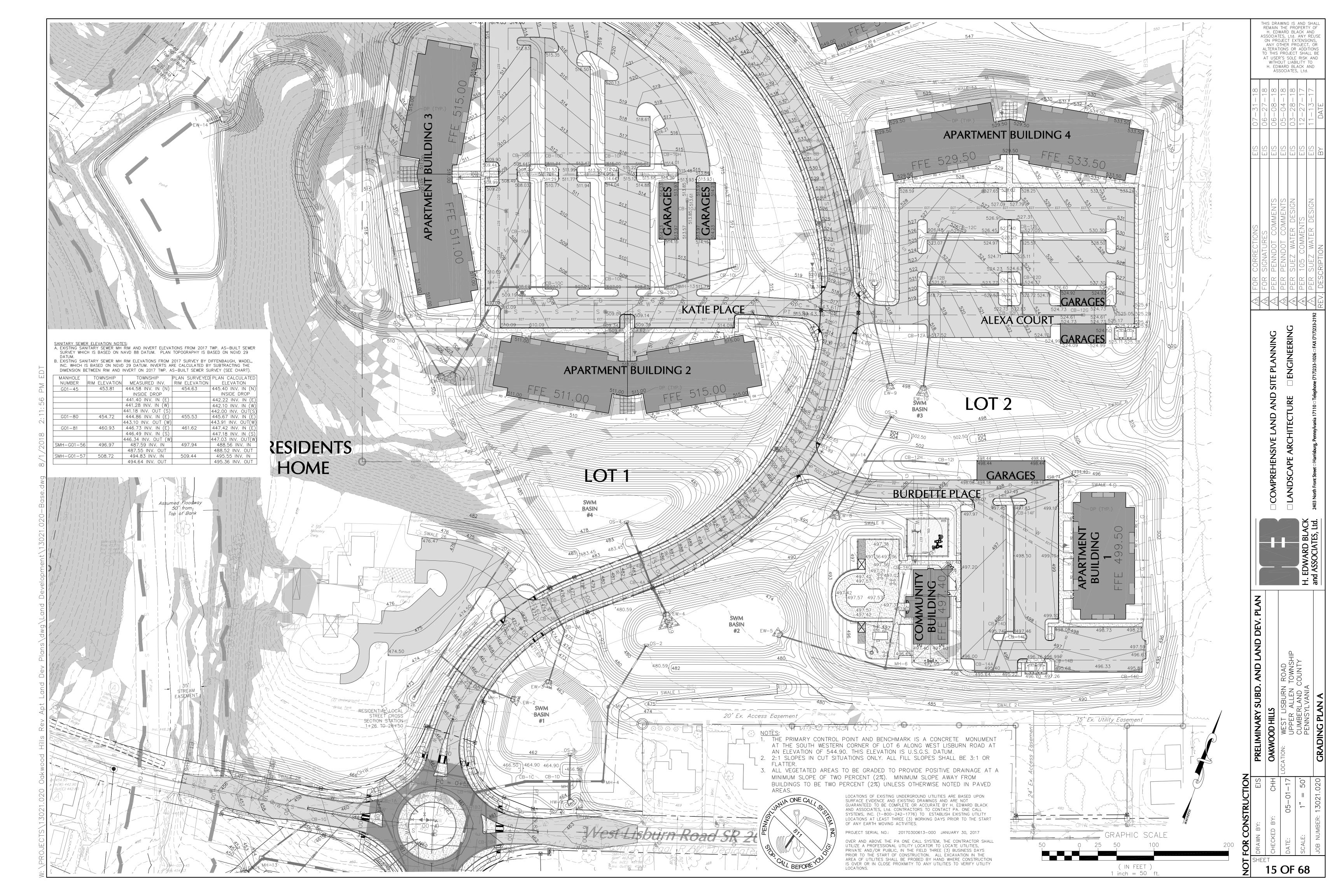
IS OVER OR IN CLOSE PROXIMITY TO ANY UTILITIES TO VERIFY UTILITY

(IN FEET)

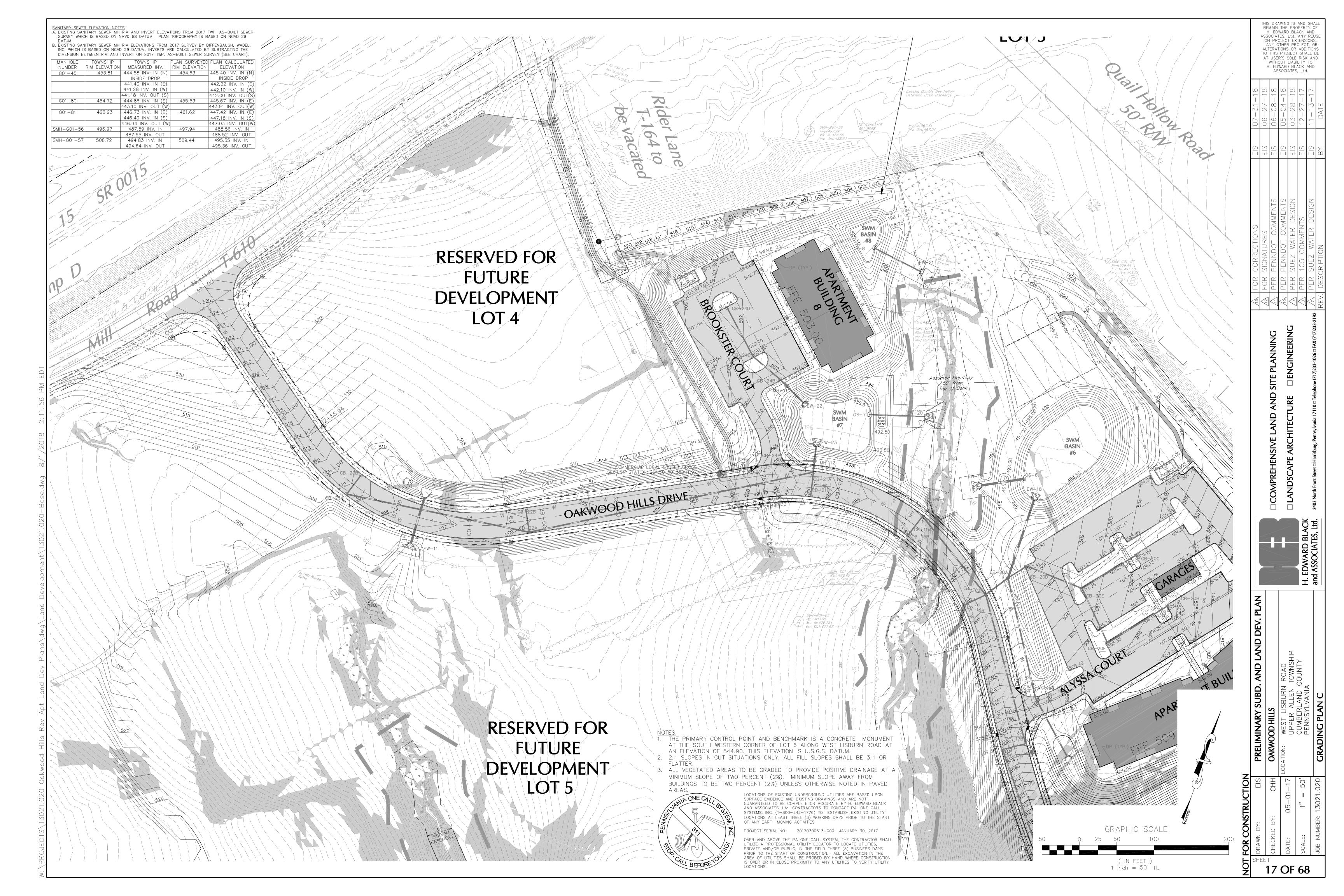
1 inch = 150 ft.

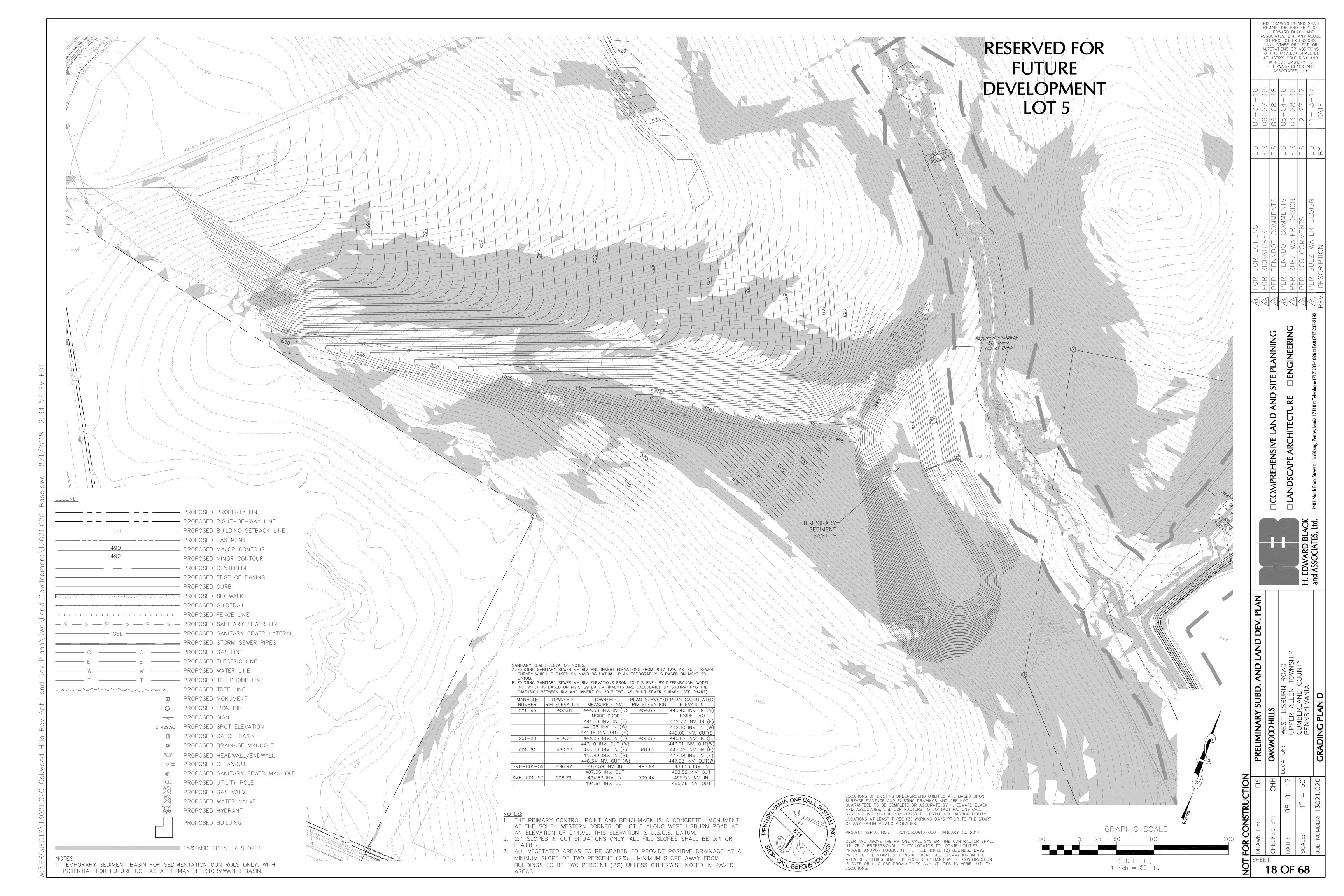
REMAIN THE PROPERTY C H. EDWARD BLACK AND

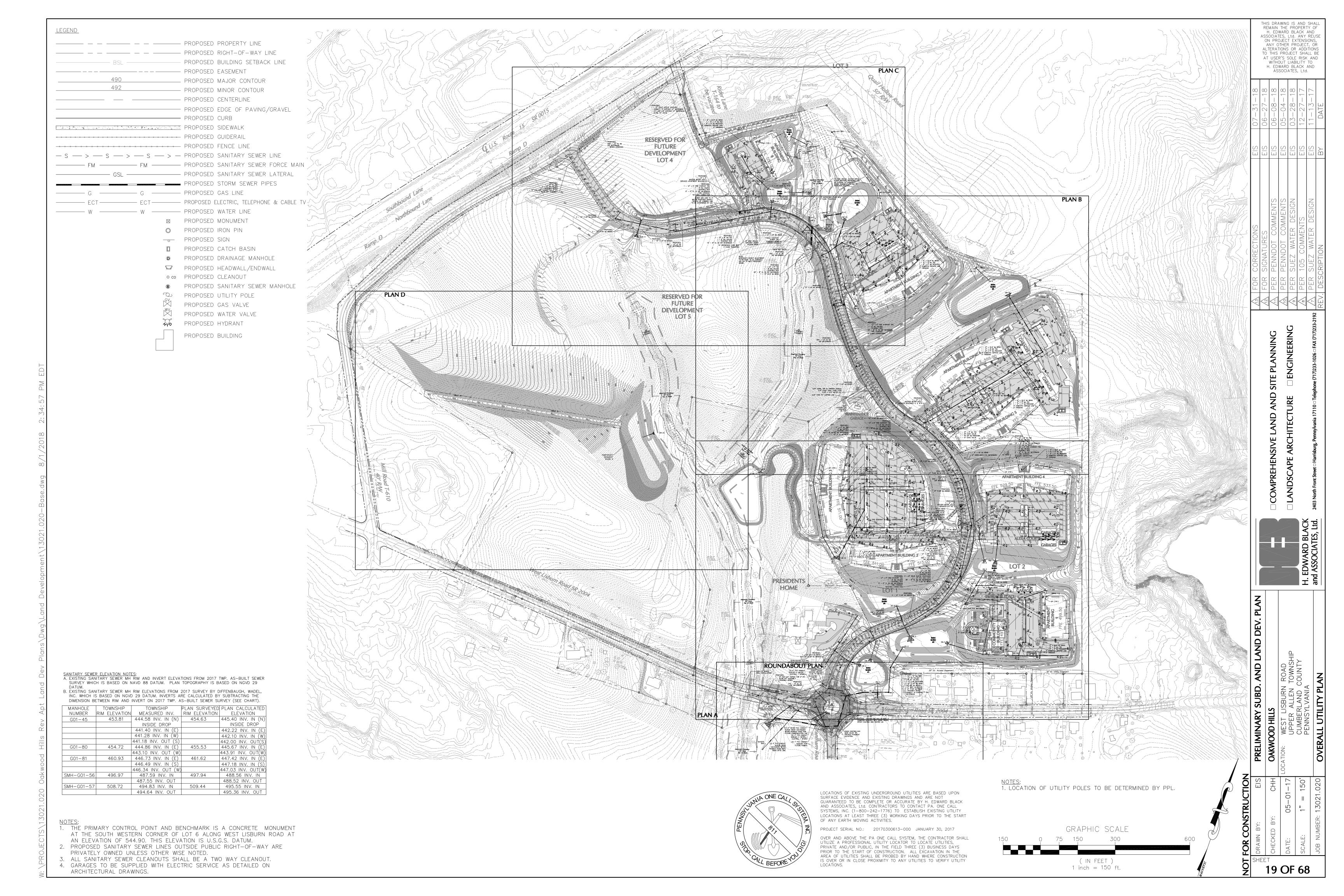
14 OF 68

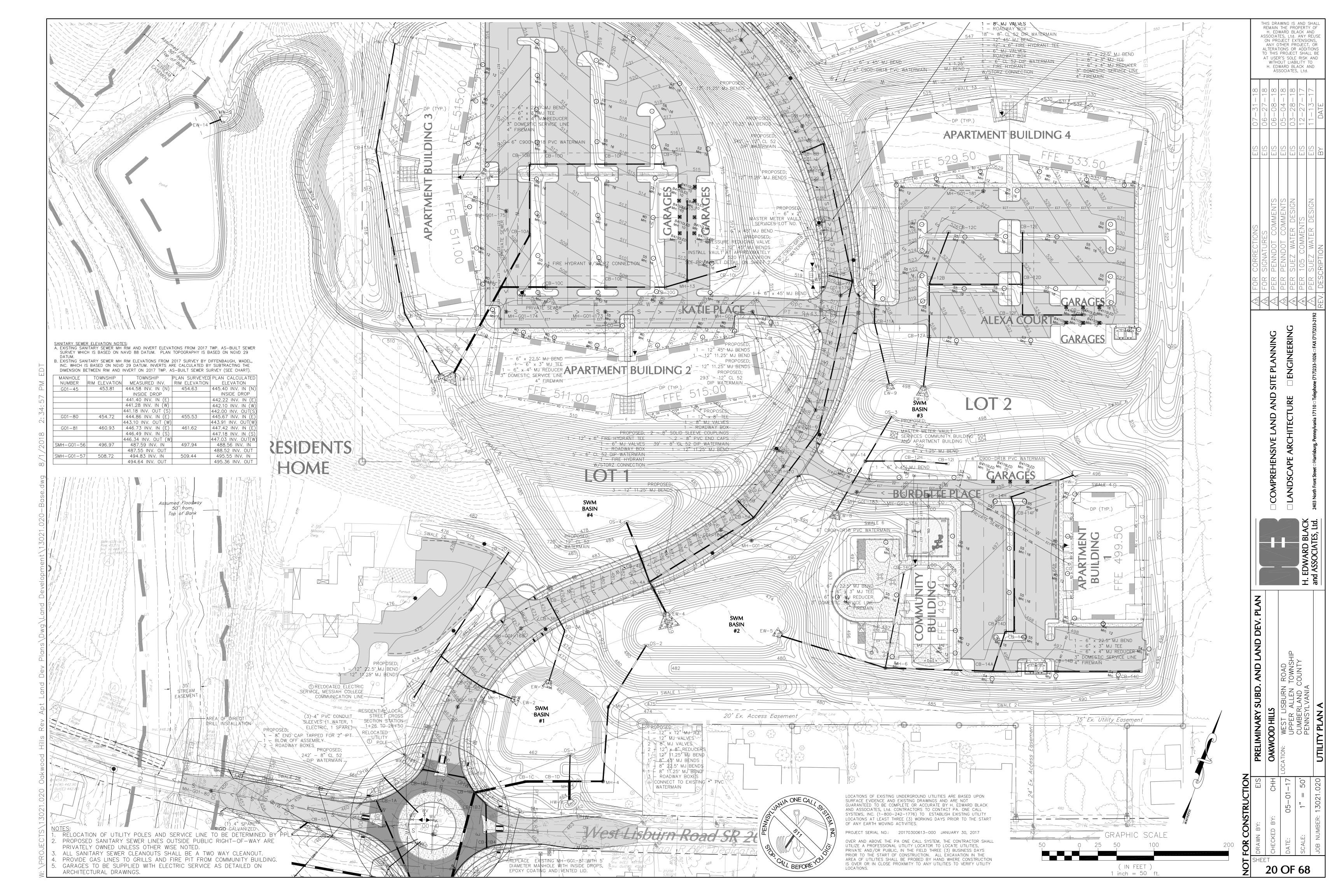


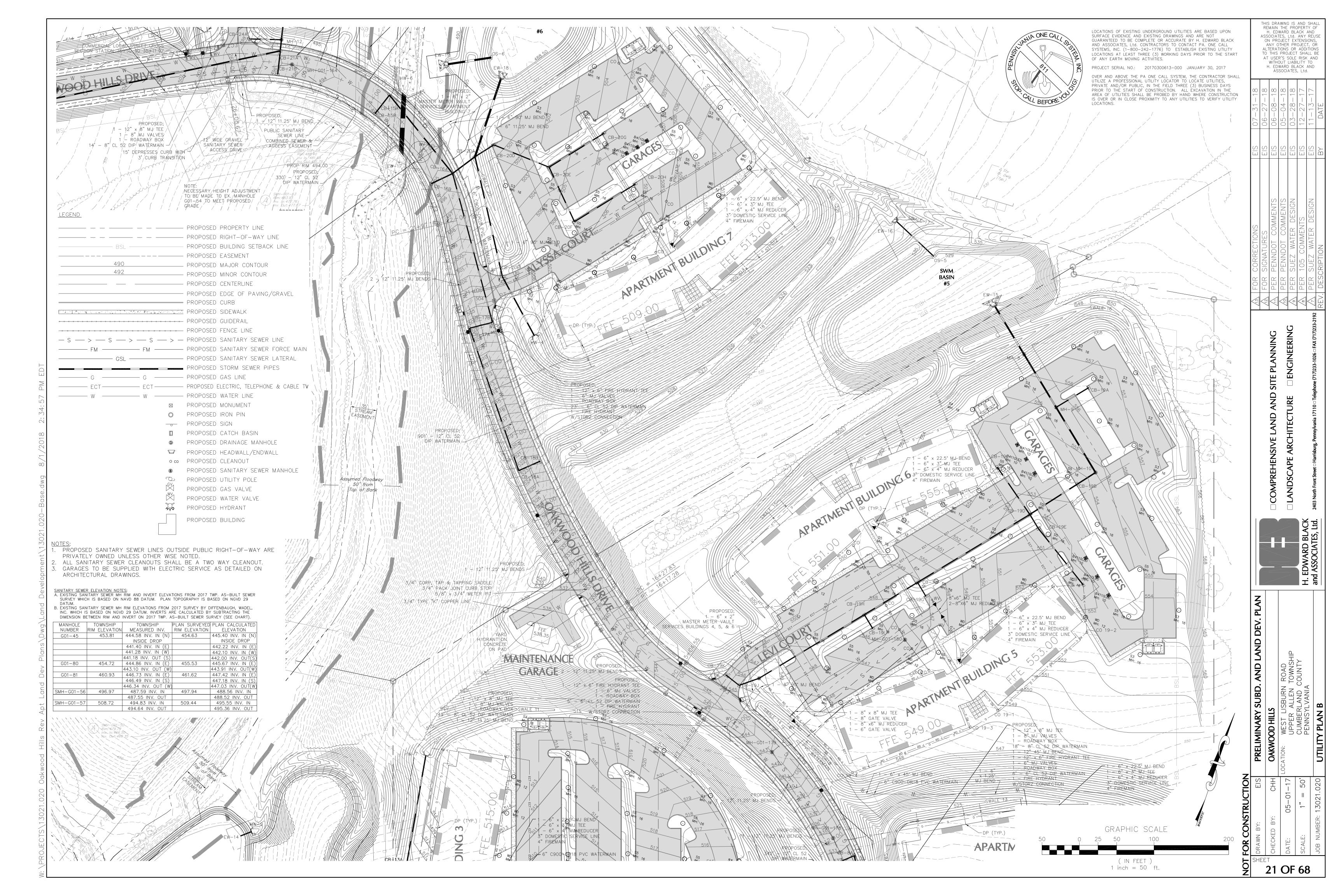


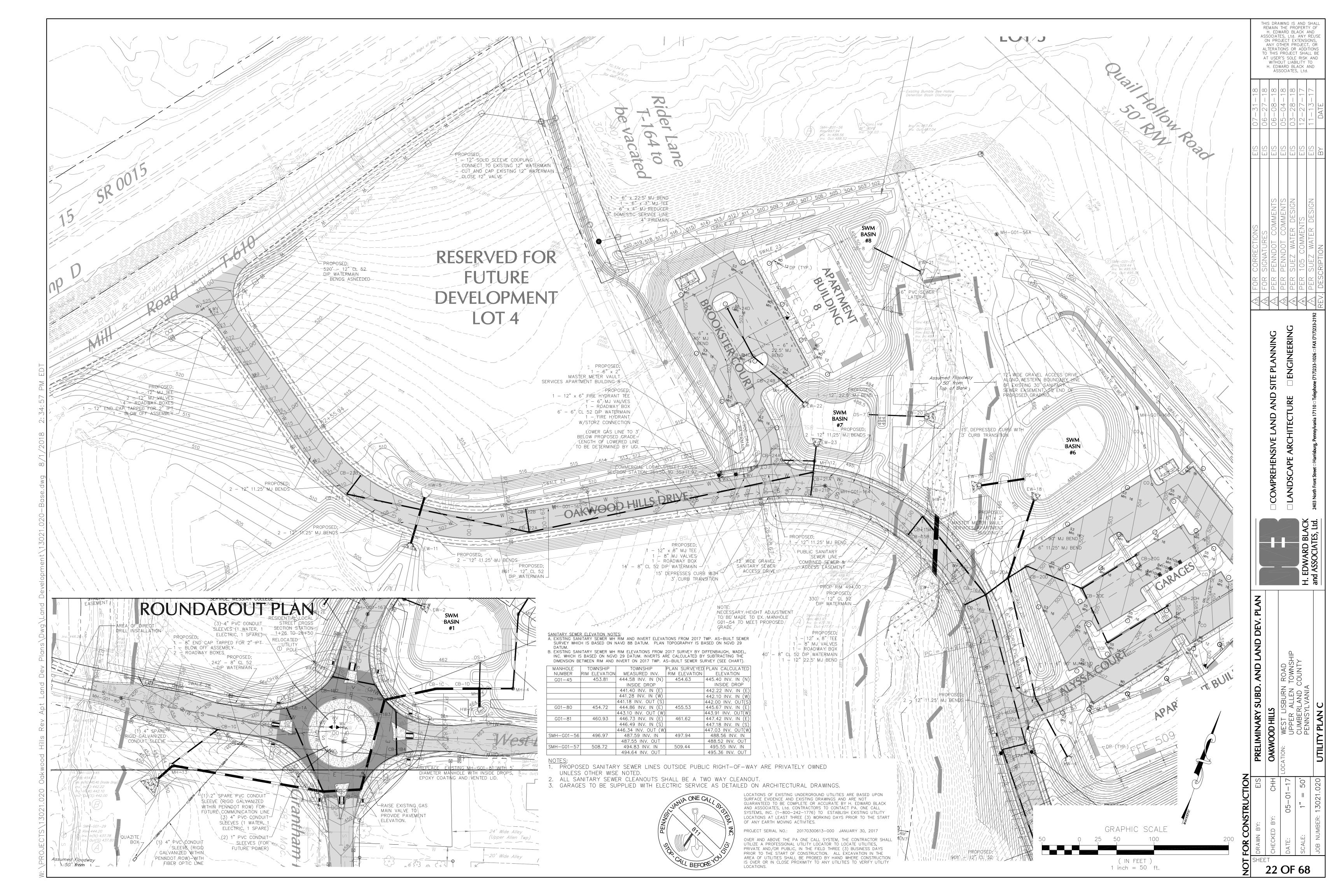


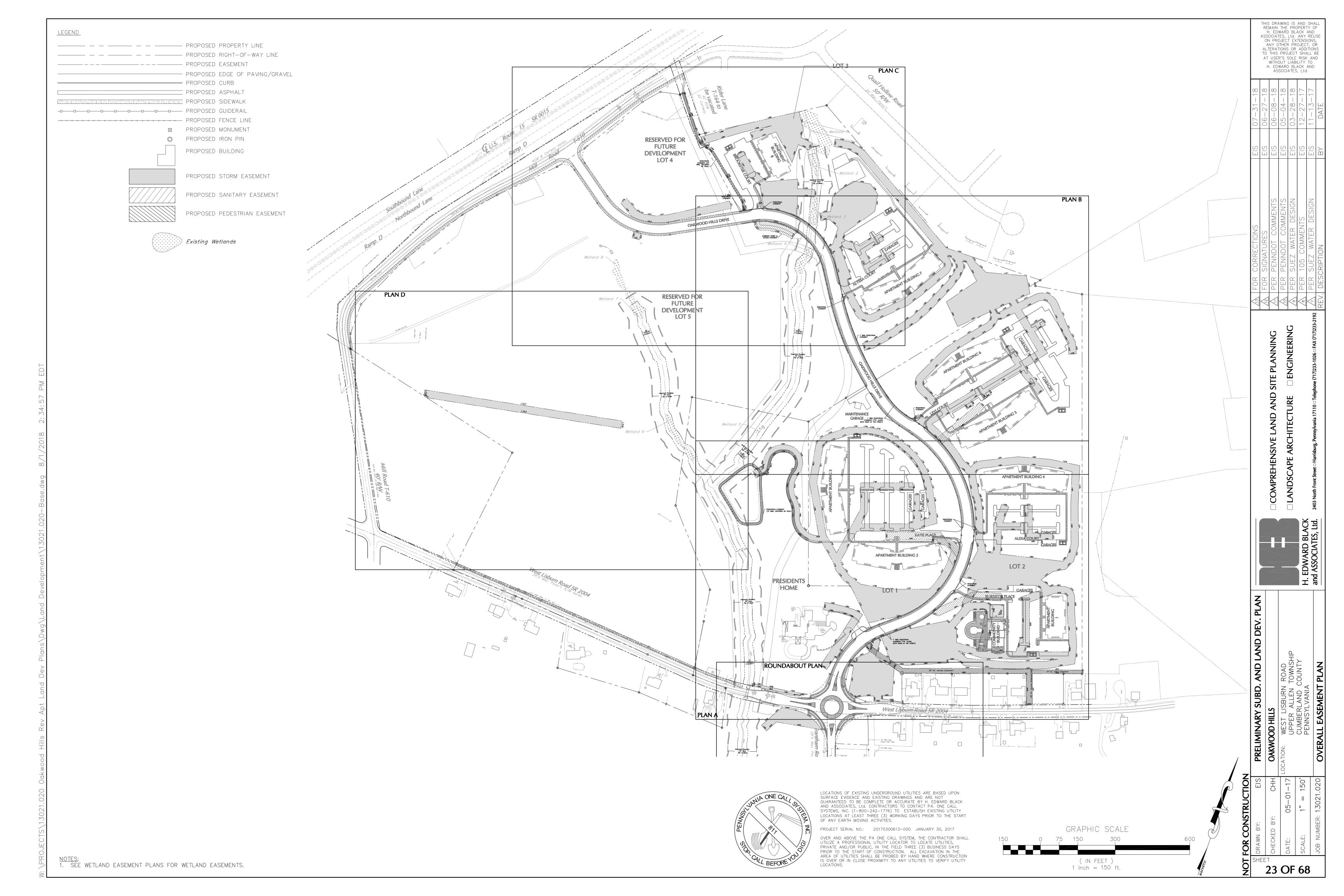


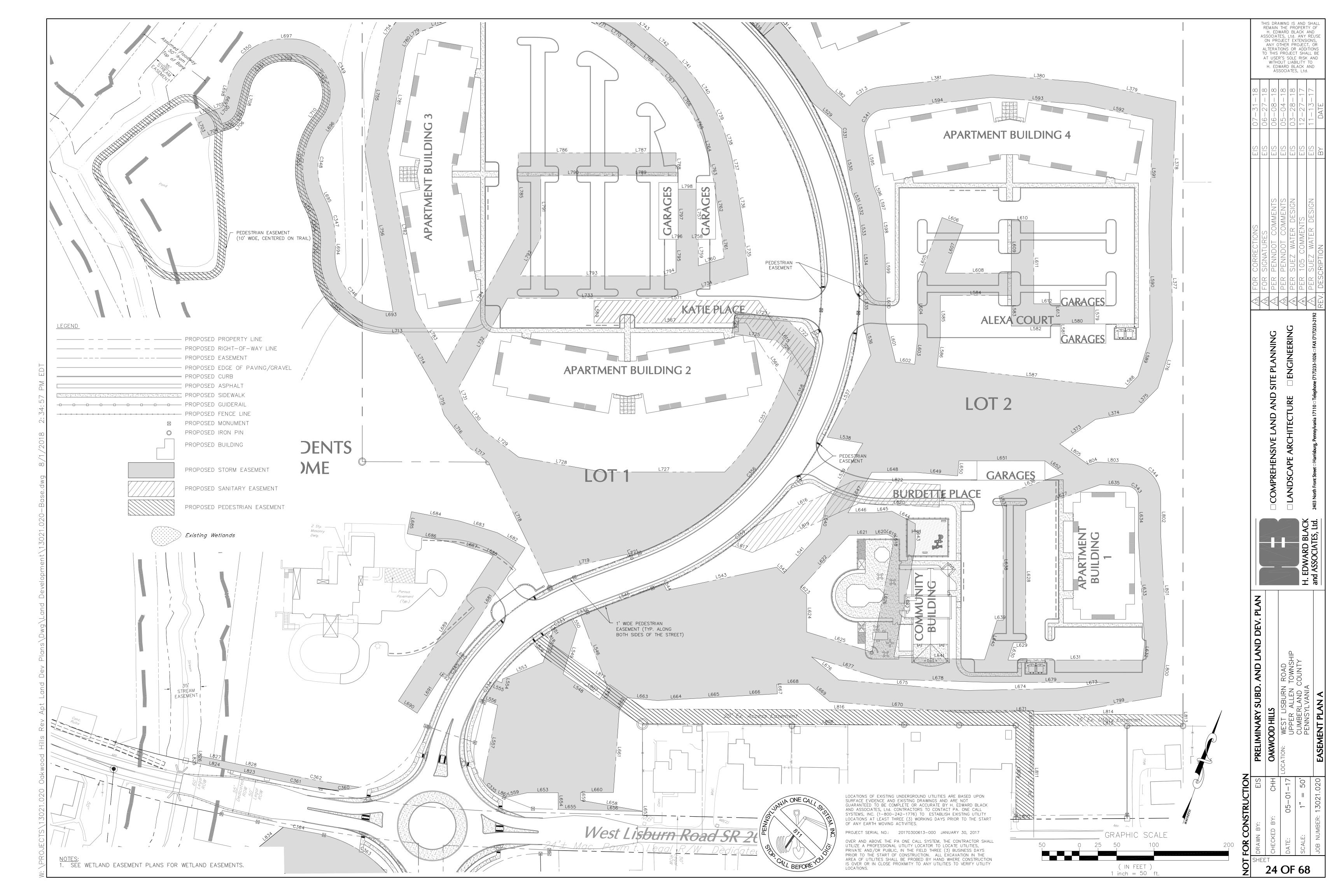


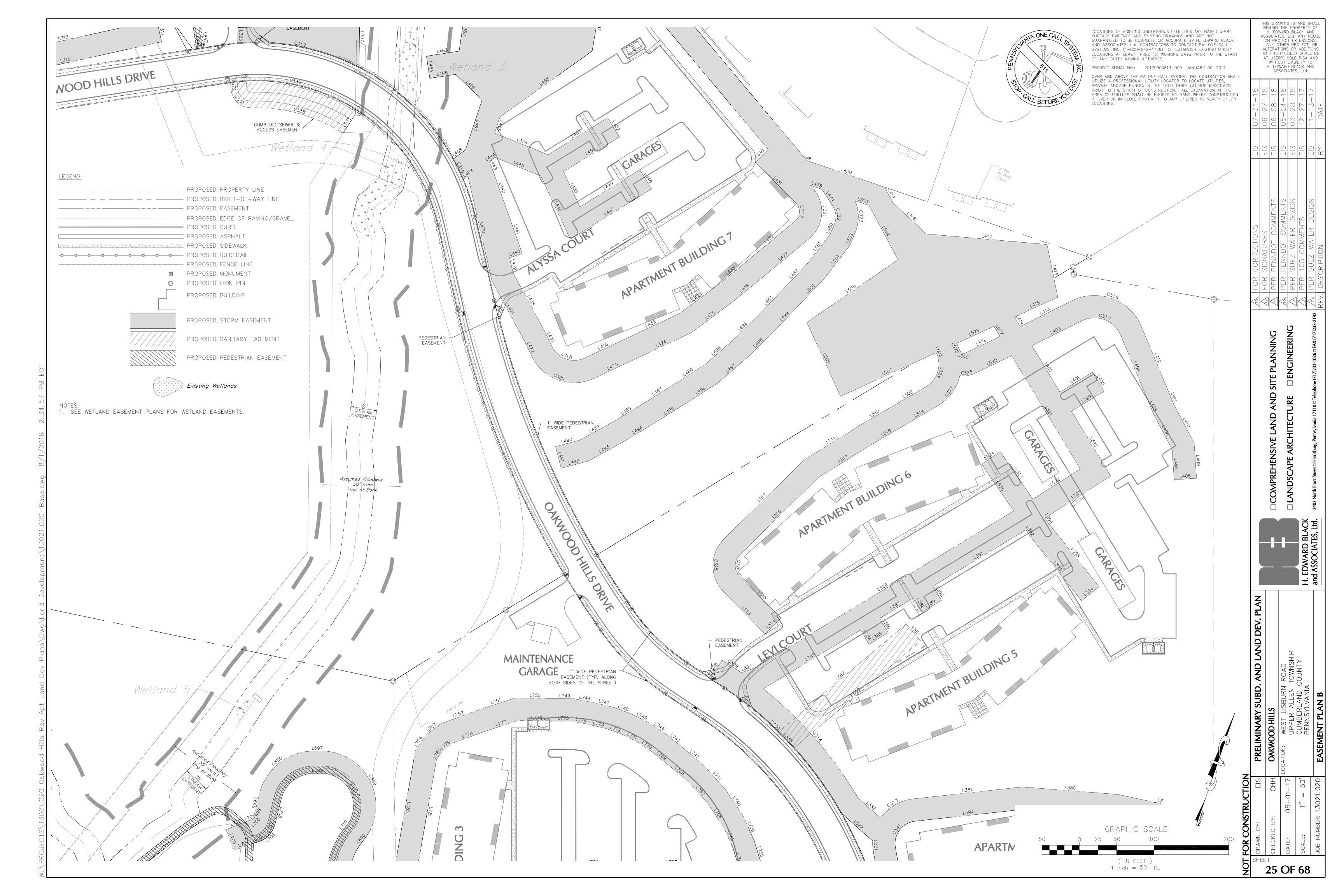


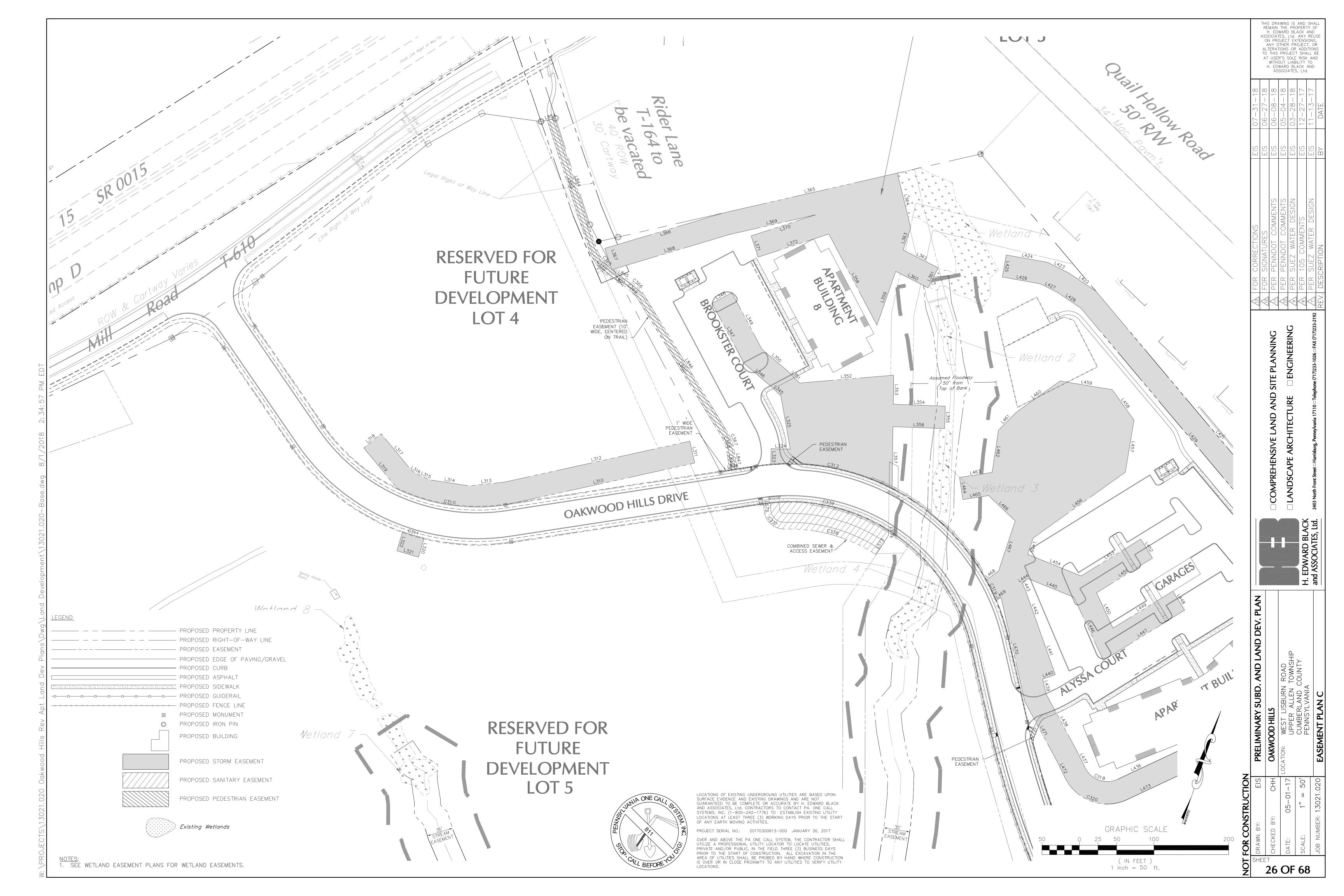


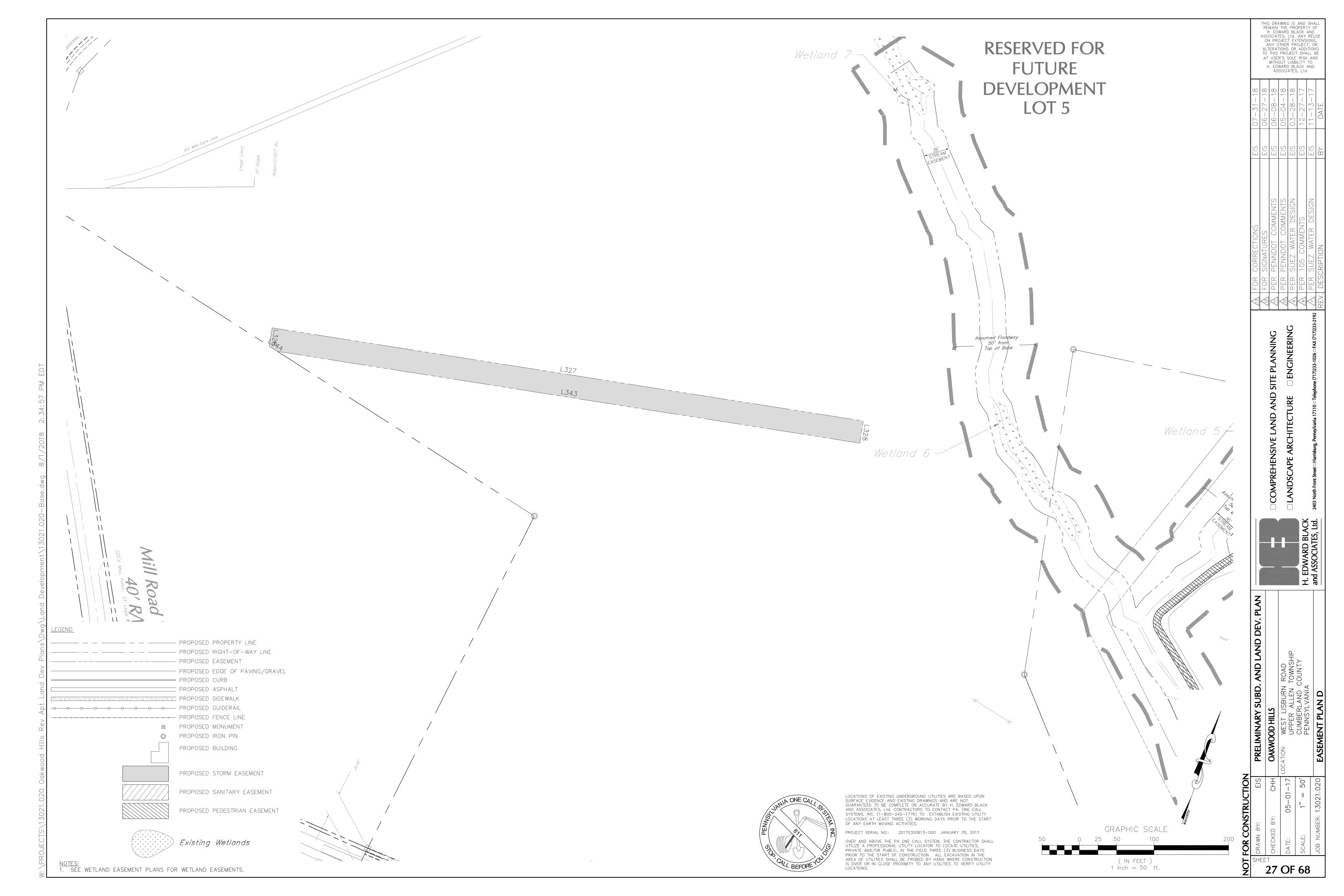












LINE	LENGTH	INE TABLE BEARING	LINE	LENGTH	NE TABLE BEARING
L300	25.82	N39°08'03"E	L432	83.53	S31°21'15"V
	64.00	S50°08'58"E	L433	49.91	S31°35'47"V
L310	261.97	N58°34'15"E	L434	63.63	S34°21'16"V
L311	30.00	N31°25'45"W	L435	82.93	\$45°51'31"V
L312	254.48	S58°34'15"W	L436	58.03	\$45°51'31"V
L313	47.29	S65°01'32"W	L437	23.59	N44°52'52"V
L314	53.37	S79°41'04"W	L438	88.28	N47°21'32"V
L315 L316	19.25 7.64	N84°31'34"W	L439 L440	20.34 17.91	N31°51'01"V
L317	64.76	N77°15'55"W N58°28'26"W	L441	65.90	N51°34'02"E N38°25'58"V
L318	30.00	S31°31'34"W	L442	51.33	<u>N38°25'58"V</u>
L319	72.46	S58°28'26"E	L443	14.10	N41°40'37"V
L320	26.69	S02°24'10"E	L444	9.41	N38°54'32"[
L321	30.00	S87°35'50"W	L445	66.28	S86°57'50"[
L322 L323	26.69 21.65	N02°24'10"W	L446	93.43	S43°56'07"E
L324	25.61	N17°27'50"W N72°32'10"E	L448	30.00	N39°17'33"E N50°42'27"V
L325	72.40	N28°59'46"W	L449	94.34	<u>\$39°17'33"V</u>
L326	24.79	N10°01'04"W	L450	52.24	N43°56'07"V
L327	801.32	N79°58'56"E	L451	88.18	N39°17'33"E
L328	30.00	S10°01'04"E	L452	30.00	N50°42'27"V
L343	789.45	\$79°58'56"W	L453	93.90	S39°17'33"V
L344	12.96	N76°17'57"W	L454	77.15	N86°57'50"V
L345	15.74	N63°59'27"W	L455	23.14	N00°34'53"V
L346	49.68	N68°42'44"W	L456	151.55	N35°31'31"E
L347	91.63	N47°01'21"W	L457	70.71	N09°28'29"V
L348	30.00	N42°58'39"E	L458	50.16	N54°28'29"V
L349	85.89	S47°01'21"E	L459	70.71	S80°31'31"V
L350	45.17	S68°42'44"E	L460	72.37	\$35°31'31"V
L351	22.59		L461	33.64	\$25°42'26"V
L352	126.28	N66°14'52"E	L462	57.16	S10°24'51"[
L353	38.97	S18°11'04"E	L463	44.22	S62°16'17"V
L354	69.83	N73°06'20"E	L464	30.00	S27°43'43"[
L355	30.00	\$16°53'40"E	L465	34.86	<u>N62°16'17"[</u>
L356	69.15	\$73°06'20"W	L466	49.10	S65°22'57"[
L357	83.29	S18°11'04"E	L467	70.83	S00°34'53"[
L358	137.92	S46°47'34"E	L468	20.89	S34°10'14"V
L359	76.27	N00°13'32"E	L469	8.37	N34°10'14"[
L360	48.68	S81°57'59"E	L470	143.71	S31°51'01"E
L361	30.00	N08°02'01"E	L471	91.71	S47°21'32"E
L362	52.79	N81°57'59"W	L472	22.94	S44°52'52"[
L363	31.29	N00°13'32"E	L473	58.03	N45°51'31"[
L364	75.57	N32°45'10"W	L474	85.95	N45°51'31"[
L365	238.51	S58°07'21"W	L475	67.37	N34°21'16"[
L366	166.16	S54°24'15"W	L476	50.70	N31°35'47"I
L367	30.01	S36°50'22"E	L477	83.60	N31°21'15"
L368	164.54	N54°24'15"E	L478	17.48	N89°56'59"
L369	118.18	N58°07'21"E	L479	27.54	<u>\$51°07'35"</u>
L370	90.64	S52°55'45"W	L480	14.99	\$04°08'50"\
L371	30.00	S37°04'15"E	L481	47.43	S18°27'25"\
L372	99.72	N52°55'45"E	L482	49.27	S24°29'02"\
L373	58.06 51.63	N36°32'55"E	L483	49.84 48.53	S24°41'25"V
L375	46.22	N60°54'56"E N25°41'20"E	L485	47.52	S26°40'21"V S30°08'33"V
L376	66.41	N01°36'56"W	L486	48.59	<u>\$38°24'12"\</u>
L377	153.01	N19°32'28"W	L487	49.10	\$39°02'42"\
L378	167.61	N16°54'38"W	L488	48.82	S39°54'14"\
L379	121.79	S83°06'28"W	L489	49.19	S42°20'23"\
L380	128.45	\$75°31'29"W	L490	33.51	\$56°09'10"\
L381	147.66	\$64°46'28"W	L491	30.00	\$33°50'50"
L382	40.78	N67°15'48"W	L492	37.14	N56°09'10"
L383	152.20	N39°51'02"E	L493	53.46	N42°20'23"
L384	22.24	S50°08'58"E	L494	49.69	N39°54'14"
L385	30.00	N39°51'02"E	L495	49.49	<u>N39°02'42"</u>
L386	22.24	N50°08'58"W	L496	50.92	N38°24'12"
L387	53.39	N39°51'02"E	L497	50.59	N30°08'33"
L388	22.24	S50°08'58"E	L498	49.96	N26°40'21"
L389	30.00	N39°51'02"E	L499	50.42	N24°41'25"
L390	22.24	N50°08'58"W	L500	50.91	N24°29'02"
L391	145.73	N39°51'02"E	L501	52.78	N18°27'25"
L392	8.21	S50°08'58"E	L502	18.76	N04°08'50"
L393	112.41	S57°31'40"E	L503	19.80	N89°56'59"
L394	30.00	N32°28'20"E	L504	82.39	<u>\$47°07'50"</u>
L395	110.48	N57°31'40"W	L505	148.26	\$36°33'52"\
L396	6.62	N50°08'58"W	L506	108.88	S43°30'36"
L397	104.41	N38°30'22"E	L507	140.82	N46°29'24"
L398	101.64	N50°08'58"W	L508	0.96	\$43°30'36"\
L399	51.12	N39°51'02"E	L509	52.15	\$40°41'56"\
L400	30.00	N50°08'58"W	L510	50.29	S40°42'25"\
L401	51.12	S39°51'02"W	L511	87.96	\$39°12'30"\
L402	72.47	N50°08'58"W	L512	150.78	\$26°25'03"\
L403	74.83	N44°34'26"E	L513	78.89	S63°34'57"
	93.95	S41°37'08"E	L514	30.00	N26°25'03"
L405	20.89	S41°37'08"E	L515	78.89	N63°34'57"\
L406	52.72	S46°42'57"E	L516	147.42	N26°25'03"
L407	40.96	S22°53'40"E	L517	84.20	N39°12'30"
L408	30.00	N67°06'20"E	L518		N40°42'25"
L409	47.28	N22°53'40"W	L519		N40°41'56"
L410	57.71	N46°42'57"W	L520	54.68	N45°22'46"
	19.56	N41°37'08"W	L521	177.33	S50°08'58"
L412	93.95	N41°37'08"W	L522	75.28	S38°30'22"\
L413	77.31	S44°34'26"W	L523	77.41	N53°30'02"\
L414	14.88	N50°08'58"W	L524	30.00	S36°29'58"\
L415	63.68 72.06	N30°29'09"W	L525 L526		\$53°30'02" \$39°51'02"\
L417	162.26	S75°59'59"W	L527	18.14	S51°32'31"\
L418	61.05	N65°51'56"W	L528	30.22	S19°05'41"\
L419	23.77	N47°07'50"W	L529	58.16	S67°15'48"
L420	110.07	S89°56'59"W	L530	72.23	S28°58'19"
L421	508.06	N59°00'13"W	L531	17.78	S41°20'30"
L422 L423	43.48 31.99		L532 L533		S30°19'22" S25°02'36"
L424	56.34	S81°07'32"W	L534	54.19	S20°47'54"
L425	30.00	S08°52'28"E	L535	51.18	S18°29'10"
L426	51.95	N81°07'32"E	L536	-	\$32°26'35"
L427	25.71	S82°11'53"E	L537		\$09°09'01"\
L427 L428	37.38 459.12	\$82 1153 E \$75°02'10"E \$59°00'13"E	L538	48.66	N80°47'46"
L429		いた ハッハハイ フェニ	L539	98.73	S11°31'03"\

	ASEMENT LI	
LINE L542	LENGTH 12.57	BEARING N66°31'08"W
L543 L544	150.28 10.25	S59°08'05"W
L545	108.54	N46°55'40"W S50°15'28"W
L546 L547	102.95 19.49	S39°23'46"E S12°44'36"W
L548	59.87	N74°04'23"W
L549 L550	62.26 15.81	N01°35'03"W N47°25'22"W
L551	3.13	S47°25'22"E
L552 L553	43.10 58.55	S01°35'03"E S48°53'29"W
L554	5.17	S08°08'39"E
L555 L556	8.88 21.22	N87°39'53"W S87°39'53"E
L557	103.97	S08°08'39"E
L559 L560	31.52 222.34	N58°47'53"E N30°50'49"E
L561	30.00	N59°09'11"W
L562 L566	224.25 108.55	S30°50'49"W N66°25'22"W
L567 L569	339.16 30.00	S71°01'37"W
L571	320.84	N71°01'37"E N71°01'37"E
L572 L573	9.85 30.58	S23°32'32"E
L574	7.54	N13°51'03"E N18°11'04"W
L575 L576	11.72 51.77	\$43°30'36"E
L577	15.82	N45°22'46"E N50°08'58"W
L578 L579	55.03 24.00	S46°29'24"W S18°58'19"E
L580	45.50	\$71°01'41"W
L581 L582	3.00 65.61	\$18°58'19"E \$71°01'41"W
L583	41.12	N18°58'19"W
L584 L585	95.00 55.85	S71°01'41"W S18°58'19"E
L586	39.93	S12°27'29"E
L587 L588	254.63 23.00	N77°32'31"E N25°41'20"E
L589	54.40	N01°36'56"W
L590 L591	148.97 143.13	N19°32'28"W N16°54'38"W
L592	94.64	S83°06'28"W
L593 L594	123.64 144.83	S75°31'29"W S64°46'28"W
L595 L596	68.98	S28°58'19"E
L596	17.42 20.01	S41°20'30"E S30°19'22"E
L598 L599	41.31 55.91	S25°02'36"E
L600	48.11	S20°47'54"E S18°29'10"E
L601 L602	56.57 25.90	S32°26'35"E
L603	38.22	N77°32'31"E N12°27'29"W
L604 L605	71.85 92.42	N18°58'19"W
L605	30.00	N01°29'13"E S88°30'47"E
L607 L608	68.11 88.39	S01°29'13"W N71°01'41"E
L609	70.00	N18°58'19"W
L610 L611	30.00 111.12	N71°01'41"E S18°58'19"E
L612	35.61	N71°01'41"E
L613 L614	3.00 45.50	S18°58'19"E N71°01'41"E
L615	104.95	S66°25'22"E
L616 L617	149.67 29.71	S46°16'29"W S89°55'48"E
L618	10.47	N18°58'19"W
L619 L620	8.75 16.36	N81°07'39"W S66°30'16"W
L621 L622	34.77 97.00	\$70°43'25"W \$23°32'05"W
L623	11.80	S66°31'08"E
L624 L625	50.03 91.68	S18°58'19"E N88°09'58"E
L626	146.14	N07°54'30"W
L627 L628	105.75 176.82	S51°48'22"W S18°58'19"E
L629	16.26	S71°01'41"W
L630 L631	24.41 180.56	S01°23'18"E N71°01'41"E
L632 L633	22.64 141.99	N12°20'12"W
L634	53.48	N22°24'20"W N18°58'19"W
L635 L636	37.15 90.92	\$74°27'54"W \$51°48'22"W
L637	18.26	S37°22'31"E
L638 L639	148.80 8.22	S18°58'19"E S71°01'41"W
L640	55.51	S01°23'18"E
L641 L642	121.44 149.84	S72°49'31"W N07°54'30"W
L643	31.46	N18°58'19"W
L644 L645	35.54 23.96	N81°07'39"W S66°30'16"W
L646	34.96	S70°43'25"W
L647 L648	62.99 55.80	N11°31'03"E N70°53'12"E
L649	59.35	N75°49'22"E
L650	20.30 115.17	N14°10'38"W N71°01'41"E
L651		
L652	29.90	\$73°00'38"E
	29.90 41.13 22.38	N70°53'23"E S19°06'37"E
L652 L653	41.13	N70°53'23"E

	ASEMENT LI	
LINE L658	LENGTH 84.15	BEARING S81°00'41"W
L659 L660	10.31 43.94	N19°06'37"W
L661	110.25	N70°53'23"E N14°53'43"W
L662 L663	20.07 40.63	N12°44'36"E N76°31'30"E
L664	50.85	N67°48'51"E
L665 L666	50.09 60.09	N67°48'51"E N67°48'51"E
L667	12.91	N22°11'09"W
L668 L669	43.46 35.85	N71°14'52"E S68°38'12"E
L670	181.66	N75°48'20"E
L671 L673	151.14 46.01	N69°52'00"E S61°18'06"W
L674	147.34	S69°52'00"W
L675 L676	170.49 47.55	S75°48'20"W N68°38'12"W
L677	100.57	N88°09'58"E
L678 L679	146.10 156.67	N72°49'31"E N71°01'41"E
L680	14.03	N69°04'55"W
L681 L682	169.44 42.32	N14°10'01"E N80°14'23"W
L683	53.62	S88°05'30"W
L684 L685	64.94 30.00	S82°00'20"W S07°59'40"E
L686	63.34	N82°00'20"E
L687 L688	48.96 6.85	N88°05'30"E S80°14'23"E
L689	231.95	\$14°10'01"W
L690 L691	30.00 64.69	\$75°49'59"E
L692	13.68	N14°10'01"E S69°04'55"E
L693 L694	2.66 9.68	S71°01'37"W
L695	3.83	N16°23'14"W N45°28'49"W
L696 L697	3.91 10.18	N19°24'10"E S70°42'36"W
L698	32.86	S05°13'34"E
L699 L700	2.50 0.40	S05°51'02"W S24°56'57"W
L701	6.72	\$52°50'59"W
L702 L703	31.37 30.00	S49°42'10"W S40°17'50"E
L704	30.54	N49°42'10"E
L705 L706	13.35 12.90	N52°50'59"E N24°56'57"E
L707	10.46	N05°51'02"E
L708 L709	35.77 10.18	N05°13'34"W N70°42'36"E
L710	3.91	S19°24'10"W
L711 L712	3.83 9.68	\$45°28'49"E
L712	16.73	S16°23'14"E N71°01'37"E
L714 L715	82.65 39.35	S49°08'42"E
L715	52.80	S38°00'43"E S55°57'57"E
L717 L718	34.83 165.47	S71°27'43"E S44°58'51"E
L719	116.00	N58°21'06"E
L720 L721	4.14 15.92	S40°48'16"E N50°36'14"E
L722	54.63	N63°15'10"W
L723 L724	70.27 30.00	S80°04'28"W S09°55'32"E
L725	60.32	N80°04'28"E
L726 L727	28.21 162.32	S63°15'10"E S71°01'33"W
L728	115.42	S81°02'33"W
L729 L730	58.45 43.98	N71°27'43"W N55°57'57"W
L731	23.39	N38°00'43"W
L732 L733	136.71 213.74	N09°47'42"E N71°01'37"E
L734	113.02	N54°40'00"E
L735 L736	62.03 68.20	N24°40'17"W N27°30'17"W
L737	34.44	N30°46'14"W
L738 L739	34.96 35.51	N36°00'14"W N43°14'13"W
L740	42.30	N52°38'05"W
L741 L742	42.14 41.18	N60°44'55"W N68°57'13"W
L743	25.80	N69°46'38"W
L744 L745	26.60 26.80	N75°05'39"W N81°57'45"W
L746	26.80	N88°49'52"W
L747 L748	26.20 26.65	S84°18'01"W S82°02'23"W
L749	26.31	S71°41'59"W
L750 L751	52.87 52.86	\$72°05'03"W \$52°50'11"W
L752	52.83	S51°04'48"W
L753 L754	25.07 25.61	S33°20'16"W S14°56'23"W
L755	152.01	S08°58'17"E
L756 L757	218.64 67.00	S28°58'17"E S18°58'23"E
L758	3.00	N71°01'37"E
L759 L760	35.60 35.85	S18°58'23"E N54°40'00"E
_,00	36.41 66.61	N24°40'17"W
L761	. hh h1	N27°30'17"W
	32.22	N30°46'14"W
L761 L762 L763 L764	32.22 31.70	N30°46'14"W N36°00'14"W
L761 L762 L763	32.22	
L761 L762 L763 L764 L765	32.22 31.70 31.15	N36°00'14"W N43°14'13"W

LINE	EASEMENT L LENGTH	BEARING
L76		N69°46'38
L70		
		N75°05'39
L77		N81°57'45
L77.		N88°49'52
L77.		S84°18'01
L77-		S82°02'23
L77.	5 23.69	S71°41'59
L77	6 47.88	S72°05'03
L77	7 47.32	S52°50'11
L77		S51°04'48
L77		S33°20'16
L78		
		S14°56'23
L78		S08°58'1'
L78.		S28°58'1
L78		S49°08'4:
L78		N09°47'4:
L78	5 106.27	N18°58'23
L78	6 117.23	N71°01'3
L78	7 94.01	N70°57'1
L78		S19°02'49
L78		S70°57'1
L79		S71°01'37
L79		S18°58'2
L79.		S09°47'42
L79		N71°01'3
L79	4 16.71	N54°40'0
L79.	5 44.41	N18°58'23
L79	3.00	N71°01'3
L79		N18°58'23
L79		N71°01'3
L79		<del> </del>
		N61°18'00
L80		N12°20'12
L80		N22°24'20
L80.		N18°58'19
L80		S74°27'54
L80-	4 11.72	S51°48'22
L80	5 47.94	N73°00'38
L80	6 21.51	S54°46'39
L80	7 159.68	S74°04'2.
L80	3 503.12	N71°14'5:
L80		S19°00'3
L81		N70°36'1
L81		N19°00'37
L81.		
		N71°14'5
L81		N19°02'42
L81		S71°14'52
L81		N19°00'37
L81		S71°14'52
L81	7 150.04	N74°04'23
L81	3 18.12	N54°46'39
L81		N46°16'2
L82		N73°46'3.
L82		N16°13'28
L82.		S73°46'32
L82.		
		\$83.05,35
L82		S83°05'35
L82		N20°12'28
L82		N14°48'4(
L82		N83°05'3
L82	3 49.74	N83°05'3
L83	0 61.68	S29°03'15
L83	1 30.00	S60°56'4
L83.		N29°03'1
L83		N80°51'50
L83		S31°52'53
L84		S36°49'1
L84		S81°28'16
L84		S50°14'5
L84	7 25.23	S27°41'2
L84	3 10.00	S62°18'38
L84		N27°41'22
L85		N50°14'56
L85		
L85		N81°28'16
1 85		N36°49'14
	- · - ·	
L85	_	N58°06'20 N87°48'09

		L/ (OI	EMENI COR			
CURVE	LENGTH	RADIUS	DELTA	TANGENT	CHORD	CHORD DIR.
C310	144.79	250.00	33°11'02"	74.49	142.78	N79°28'03"E
C311	30.01	300.00	5°43'55"	15.02	30.00	N87°35'50"E
C312	167.84	300.00	32°03'18"		165.66	S82°14'21"V
C313	51.42	60.00	49°06'19"		49.86	S40°13'19"V
C314	194.32	530.00		98.26	193.23	
			21°00′24"			N59°56'59"V
C315	62.22	38.00	93°48'26"	40.61	55.50	N88°31'21"V
C316	111.33	68.00	93°48'26"	72.68	99.31	N88°31'21"V
C317	28.33	17.00	95°29'43"		25.17	N16°23'37"V
C318	51.41	33.00	89°15'36"		46.37	S89°30'41"[
C319	30.58	300.00	5°50'27"	15.30	30.57	N44°45'23"V
C320	98.15	63.00	89°15'36"	62.19	88.52	S89°30'41"[
C321	81.40	47.00	99°13'44"	55.25	71.60	N18°15'37"V
C322	24.12	25.00	55°16'25"	13.09	23.19	N23°29'23"V
C323	44.28	55.00	46°07'36"	23.42	43.09	N18°54'58"V
C324	51.44	35.00	84°12'32"	31.63	46.93	N01°24'20"V
C325	78.54	50.00	90°00'00"	50.00	70.71	S18°34'57"[
C326	31.42	20.00	90°00'00"	20.00	28.28	S18°34'57"[
C327	52.19	65.00			50.80	
			46°00'19"			N17°41'46"[
C328	20.67	35.00	33°50'11"		20.37	N62°17'52"[
C329	30.27	530.00	3°16'21"	15.14	30.27	N76°01'27"V
C330	254.40	500.00	29°09'09"	130.02	251.67	N63°29'30"V
C331	13.79	60.00	13°10'13"	6.93	13.76	S22°23'12"[
C332	10.00	275.00	2°05'02"		10.00	S49°33'43"V
C333	30.01	275.00	6°15'13"	15.02	30.00	S42°34'38"V
C334	30.77	275.00	6°24'42"	15.40	30.76	S15°04'49"V
C335	35.96	63.50	32°26'37"	18.47	35.48	S71°34'51"[
C336	30.07	500.00	3°26'43"	15.04	30.06	N62°47'18"V
C337	41.06	27.00	87°08'02"		37.22	S67°06'34"[
C338	128.86	213.00	34°39'42"	66.47	126.90	S86°39'16"V
C339	174.67	250.00	40°01'51"		171.14	S83°02'00"V
C340	7.95	5.00	91°06'38"	5.10	7.14	S89°03'55"I
C341	49.09	30.00		32.03	43.79	
			93°44'47"			S17°54'04"V
C343	22.66	15.00	86°33'47"	14.13	20.57	N62°15'13"V
C344	67.99	45.00	86°33'47"	42.38	61.70	N62°15'13"V
C345	30.18	325.00	5°19'15"	15.10	30.17	S14°48'54"V
C346	121.19	75.00	92°35'10"	78.46	108.43	S62°40'48"[
C347	63.47	125.00	29°05'36"	32.44	62.79	N30°56'02"V
C348	96.26	85.00	64°52'59"		91.19	S13°02'20"[
C349	163.97	73.00	128°41'34"	152.00	131.61	N44°56'37"V
C350	99.40	75.00	75°56'10"	58.53	92.28	S32°44'31"V
C351	59.64	45.00	75°56'10"	35.12	55.37	S32°44'31"V
C352	96.58	43.00	128°41'34"	89.53	77.52	N44°56'37"V
C353	130.23	115.00	64°52'59"	73.10	123.38	S13°02'20"E
C354	48.24	95.00	29°05'36"	24.65	47.72	N30°56'02"V
C355	169.67	105.00	92°35'10"	109.85	151.81	N30 36 02 V S62°40'48"[
C356	376.97	375.00		206.15	361.30	
			57°35'51"			N21°48'18"[
C357	181.71	345.00	30°10'37"	93.01	179.61	N10°43'09"[
C358	33.68	375.00	5°08'45"	16.85	33.67	N03°24'58"V
C359	37.84	425.00	5°06'07"	18.93	37.83	N31°49'58"I
C360	52.12	125.00	23°53'31"	26.45	51.75	N69°00'27"
C361	73.40	1812.53	2°19'13"	36.71	73.40	N82°06'49"[
C362	123.65	1802.53	3°55'49"	61.85	123.62	N81°18'33"[
C363	147.14	169.00	49°53'03"	78.60	142.54	N74°08'36"V
C364	41.96	1872.53	1°17'02"	20.98	41.96	N81°33'24"
C365	52.60	67.50	44°39'03"	27.72	51.28	S59°08'45"
C366	39.51	72.50	31°13'20"	20.26	39.02	339 06 43 1 N65°51'36"V
C367	24.61	62.50		12.47	24.45	
			22°33'34"			N38°58'09"V
C368	20.67	52.50	22°33′34″	10.47	20.54	N38°58'09"V
C369	34.06	62.50	31°13'20"	17.46	33.64	N65°51'36"V
C370	60.40	77.50	44°39'03"	31.83	58.88	S59°08'45"E

EASEMENT CURVE TABLE

	□ COMPREHENSIVE LAND AN
	☐ LANDSCAPE ARCHITECTUR
BLACK	
TES, Ltd.	2403 North Front Street 🗆 Harrisburg, Pennsylvania 17110 🗆

Ö	2403 N	
	H. EDWARD BLACK and ASSOCIATES, Ltd.	

NOT FOR CONSTRUCTION

BY
CHECKED BY: CHH
OATE: 05-01-17

SCALE: 1" = 50'

2403 North F	H. EDWARD BLACK and ASSOCIATES, Ltd.
<b>≥</b> C	

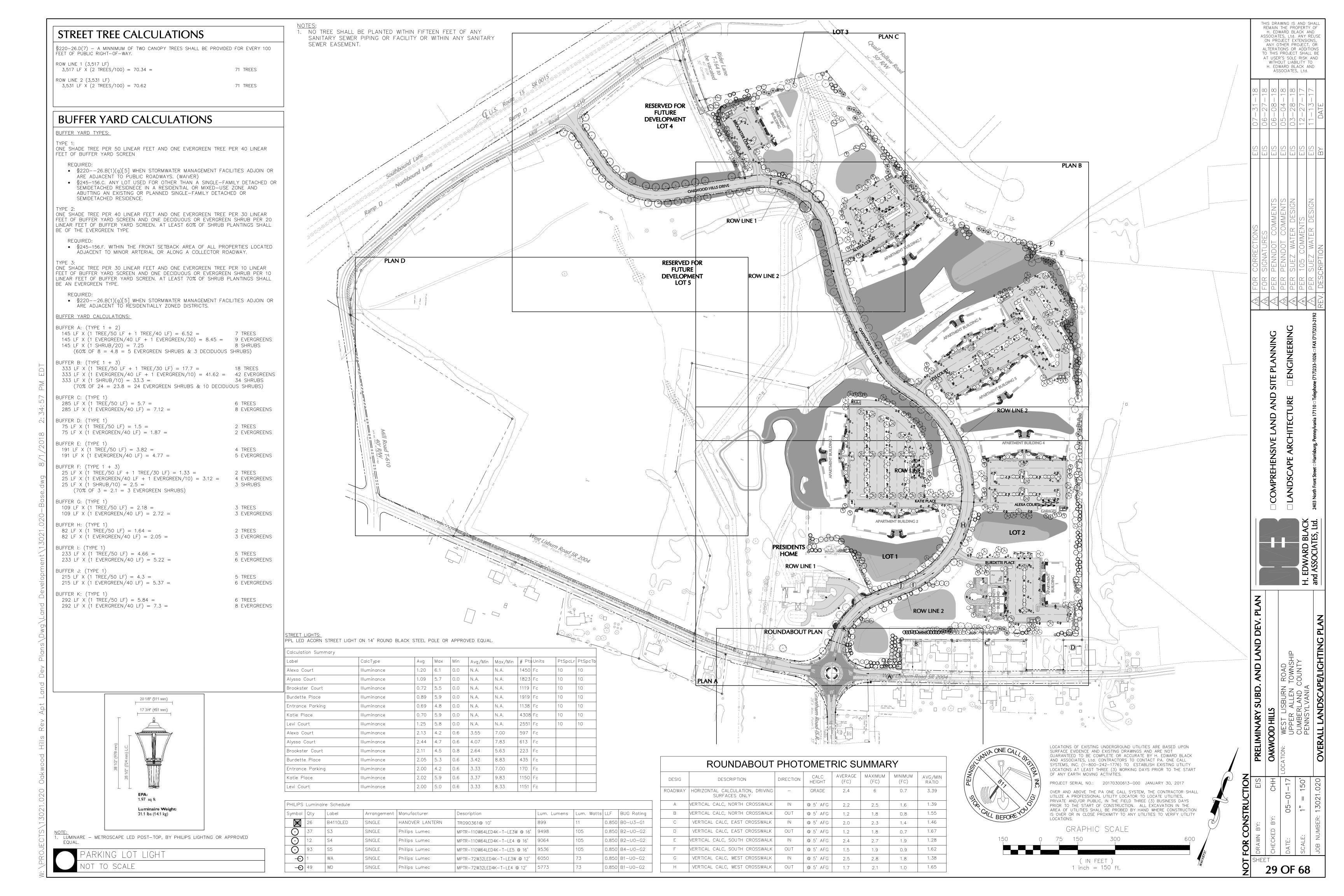
	ACK	Ltd. 2403 North I	
	H. EDWARD BLACK	and ASSOCIATES, Li	

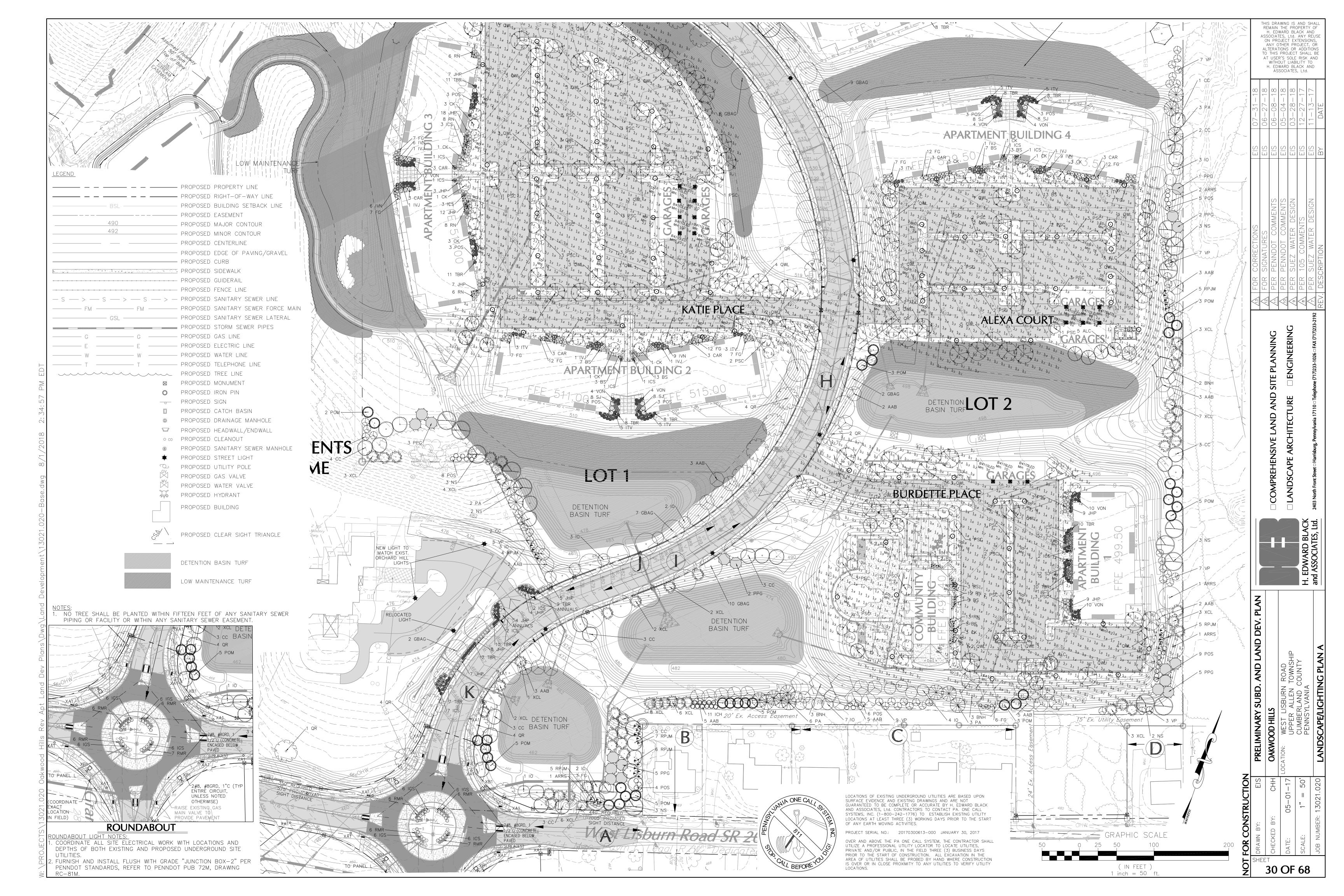
|--|

IVE LAND AND SITE PLANNING	\\ \-	A PER PENNDOT C
	(J	A PER PENNDOT C
RCHII ECI URE ENGINEERING	6	PER SUEZ WATER
	8	A PER 105 COMME
ure. Pennsvivania 17110 🗆 Telephone (717)233-1026 🕳 FAX (717)233-2192	7	PER SUEZ WATER
	REV.	REV. DESCRIPTION

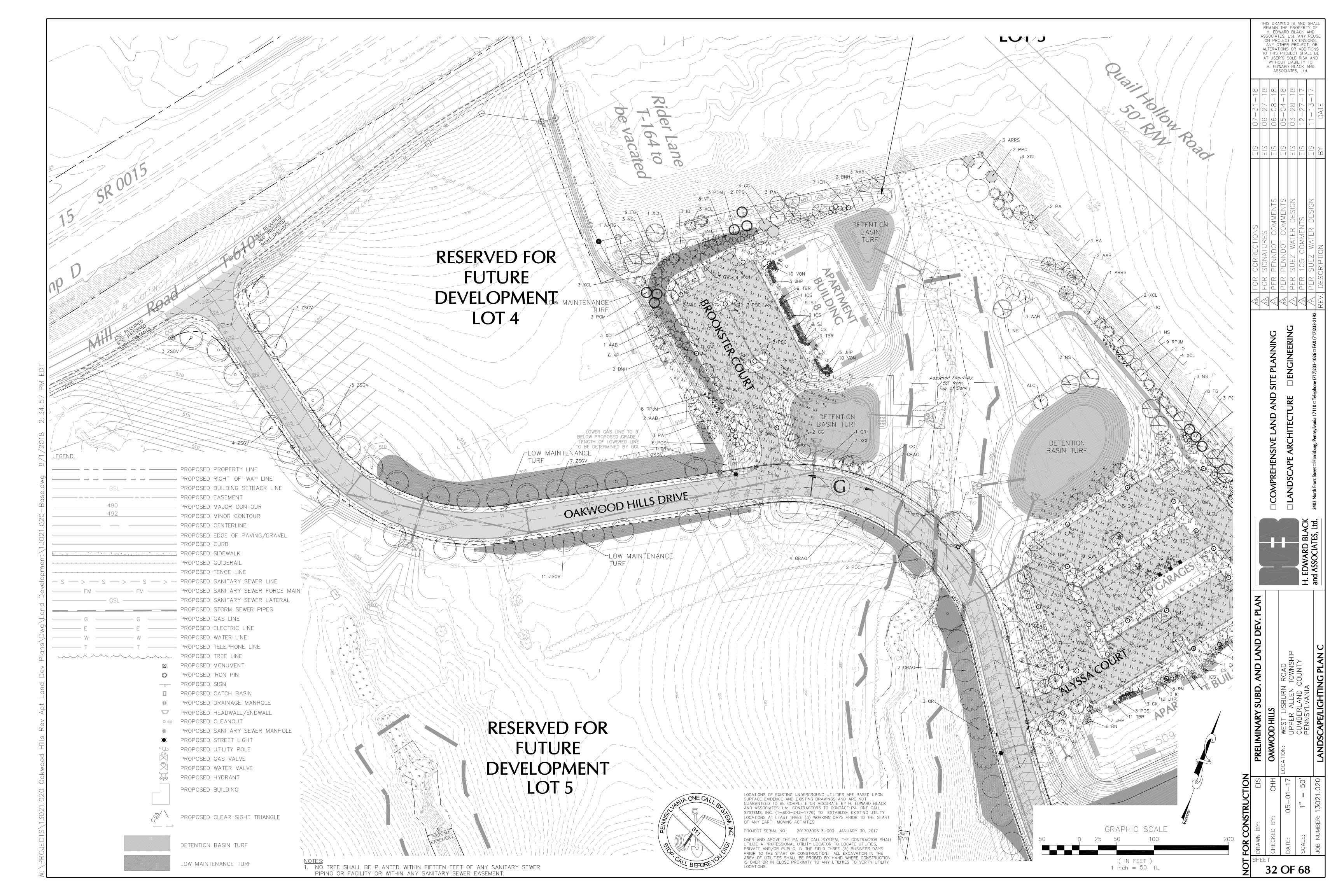
OR CORRECTIONS	EIS	07-31-18	
OR SIGNATURES	EIS	06-27-18	
PER PENNDOT COMMENTS	EIS	06-08-18	AS
PER PENNDOT COMMENTS	EIS	05-04-18	SOCI
PER SUEZ WATER DESIGN	EIS	03-28-18	ATES
PER 105 COMMENTS	EIS	12-27-17	, Ltc
PER SUEZ WATER DESIGN	EIS	11-13-17	dind J.
NESCRIPTION	\ \	DATE	

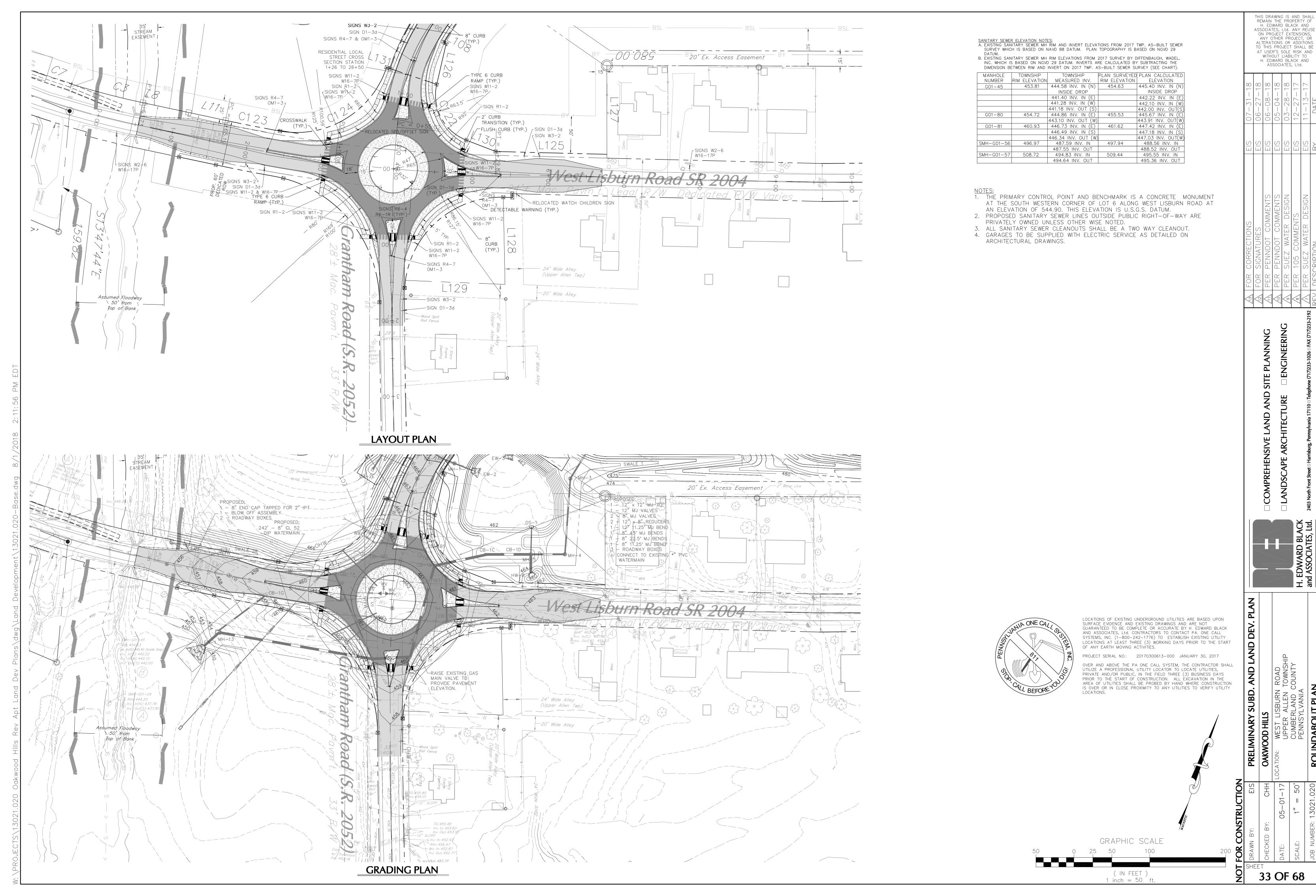
H. EDWARD BLACK AND SOCIATES, Ltd. ANY REUSE N PROJECT EXTENSIONS, ANY OTHER PROJECT, OR TERATIONS OR ADDITIONS THIS PROJECT SHALL BE USER'S SOLE RISK AND WITHOUT LIABILITY TO H. EDWARD BLACK AND ASSOCIATES, Ltd.						
	06-08-18	05-04-18	03-28-18	12-27-17	11-13-17	DATE









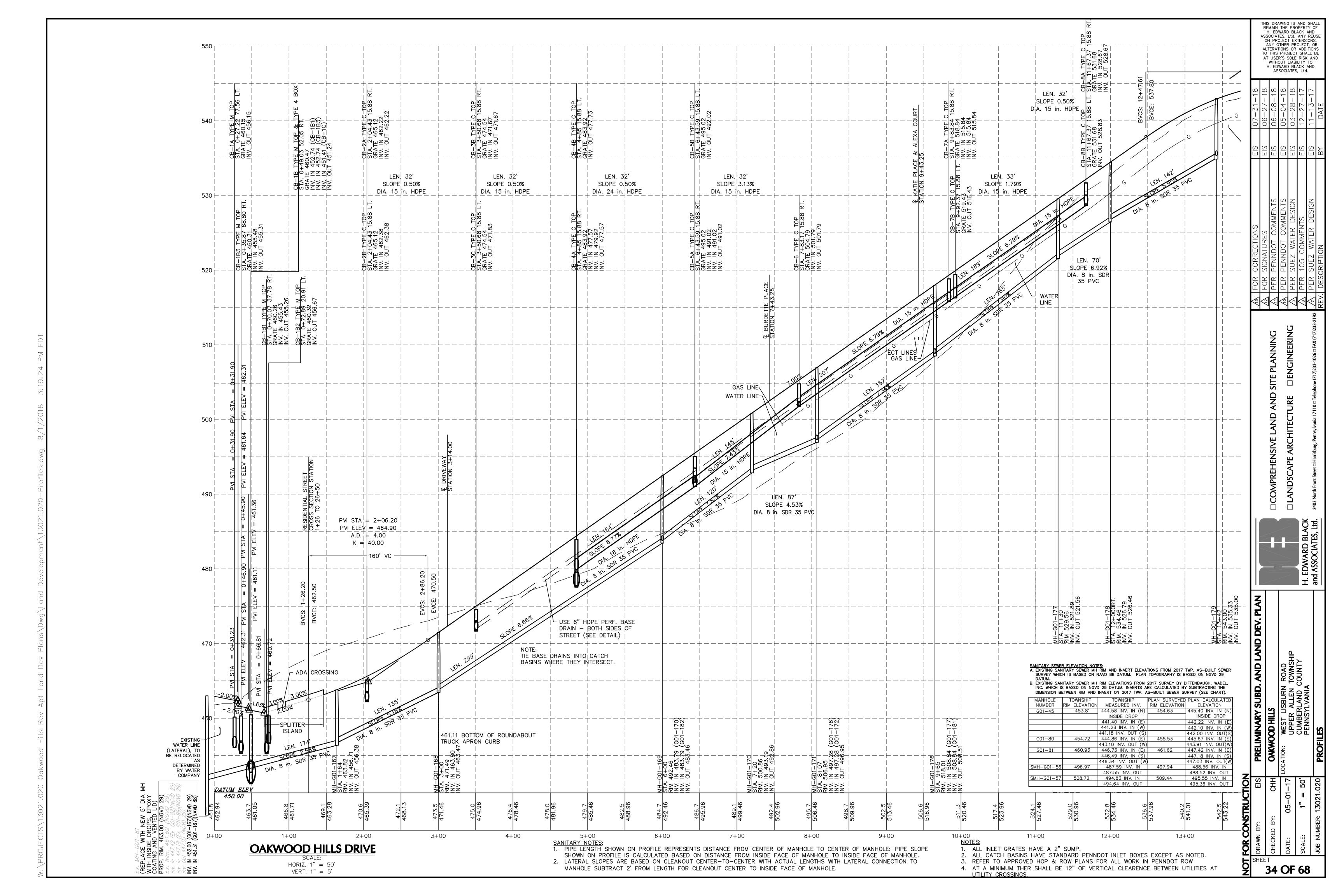


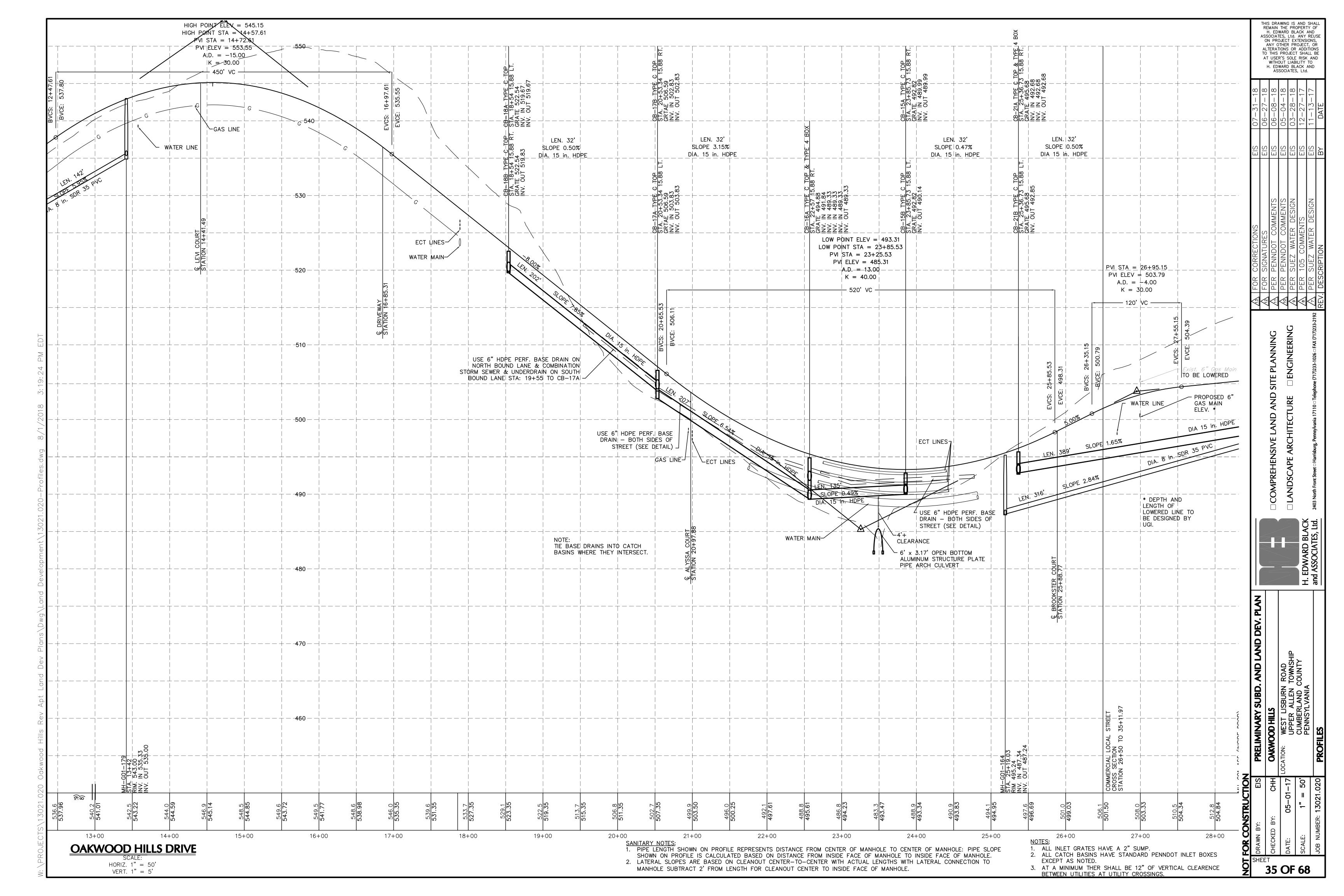
TIONS	EIS	07-31-18	
4ES	EIS	06-27-18	
r comments	EIS	06-08-18	
r comments	EIS	05-04-18	
ATER DESIGN	EIS	03-28-18	
MENTS	EIS	12-27-17	
ATER DESIGN	EIS	11-13-17	
	ВУ	DATE	

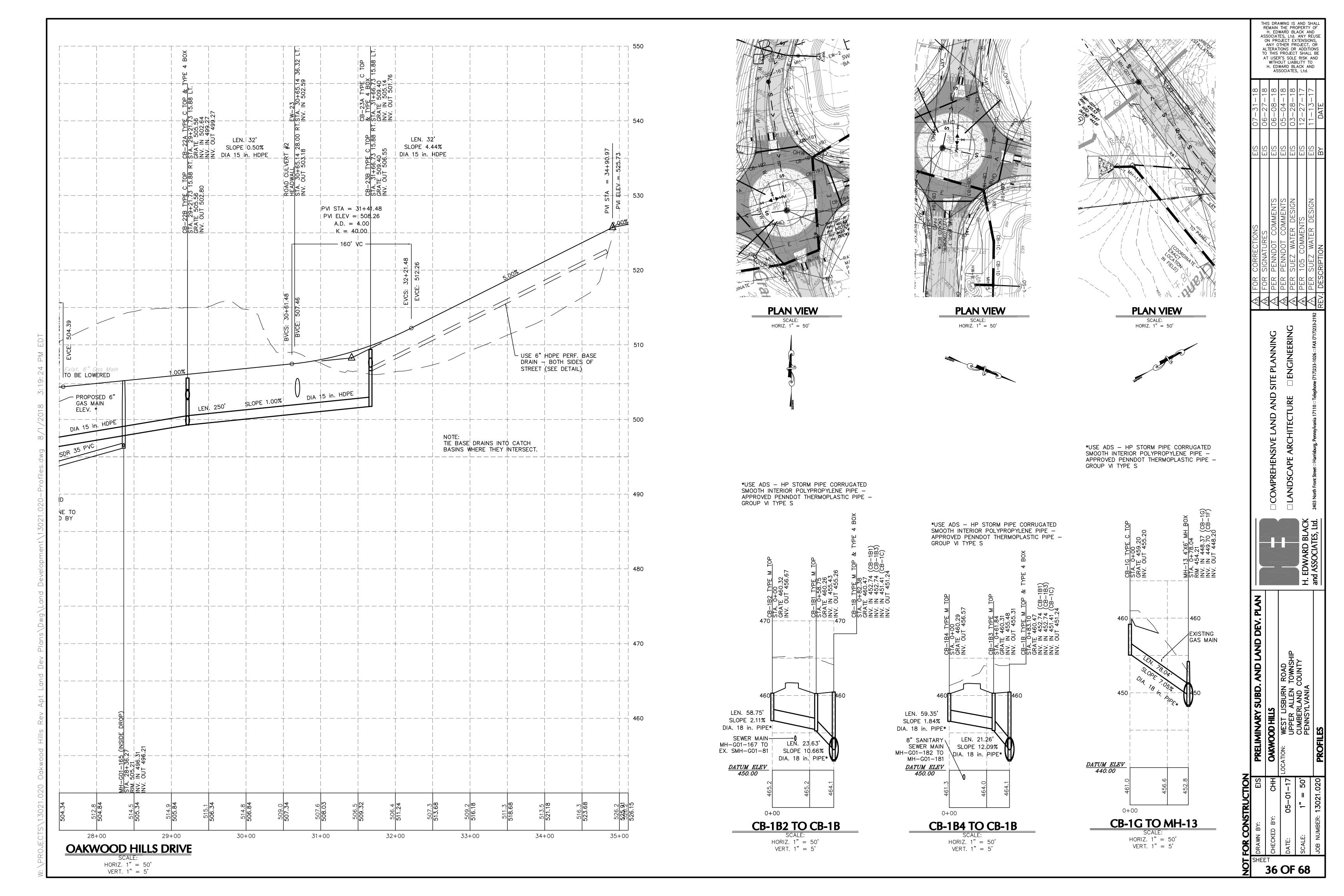
	\^\		
	12	12 FOR SIGNATURES	П
	11	A PER PENNDOT COMMENTS	ш
(	\J	A PER PENNDOT COMMENTS	ш
<u> </u>	$\backslash 6/$	PER SUEZ WATER DESIGN	Ш
	\8/	PER 105 COMMENTS	Ш
)233-2192	eq	)   Per suez water design	Ш
		REV. DESCRIPTION	М

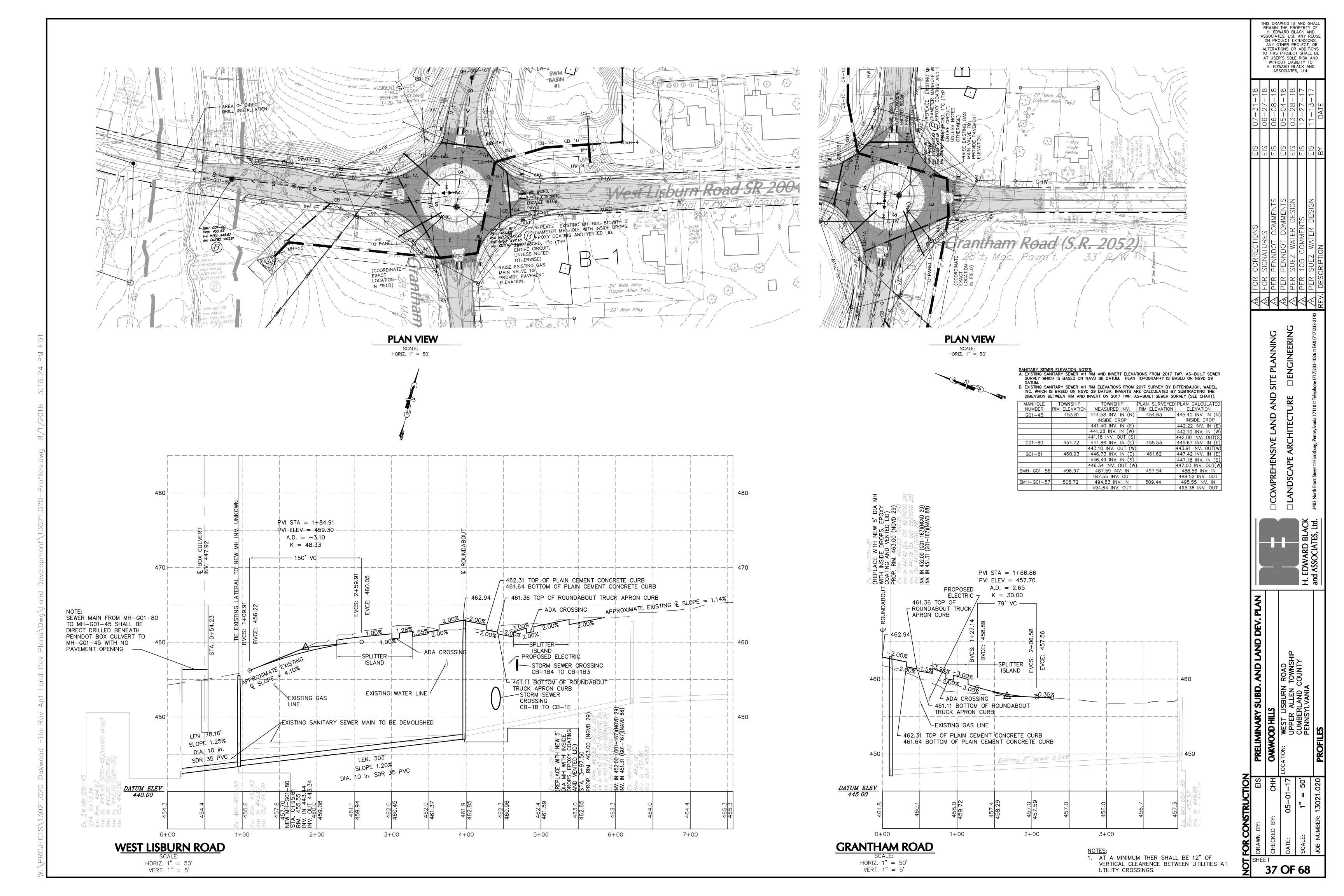
CHH		OAKWOOD HILLS
7	LOCATION:	WEST LISBURN ROAD
/   -   0 - 0		UPPER ALLEN TOWNSHIP
1" - 50"		CUMBERLAND COUNTY
		PENNSYLVANIA
3021.020		ROUNDABOUT PLAN

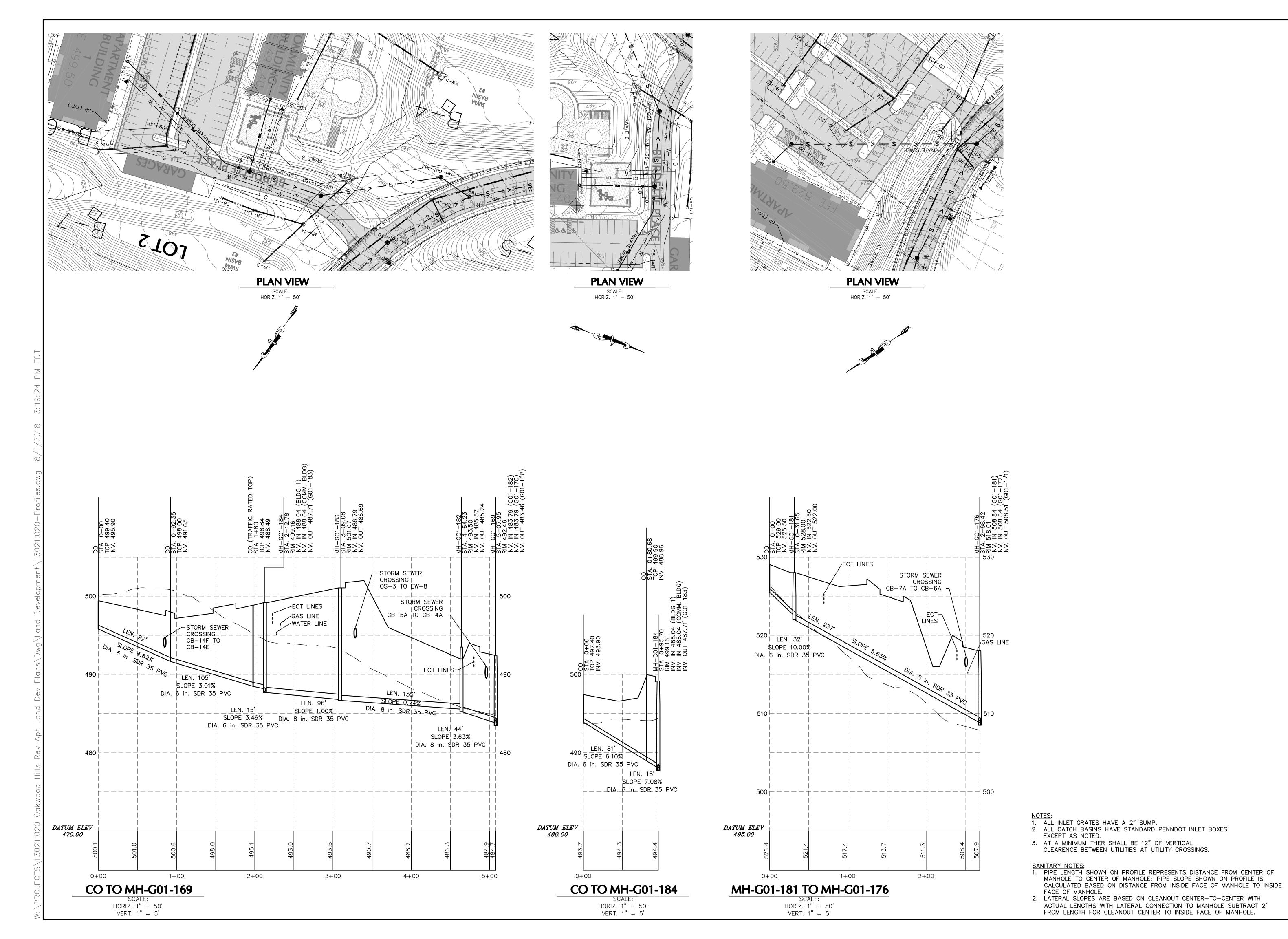
OAKWOOD	LOCATION: WE	S	ROUNDA
CHECKED BY: CHH	DATE: 05-01-17	SCALE: 1" = 50'	JOB NUMBER: 13021.020
33	OF	68	



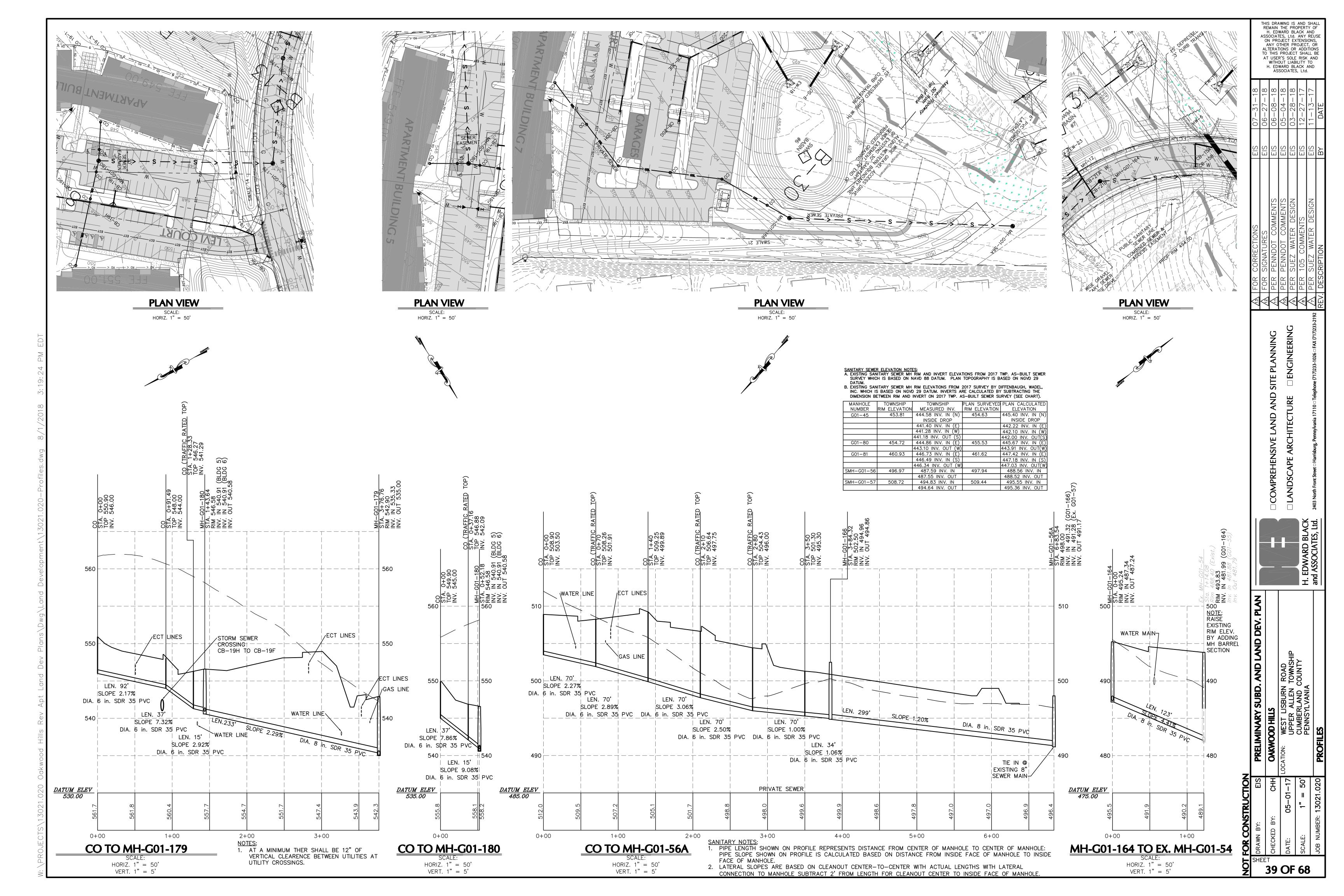


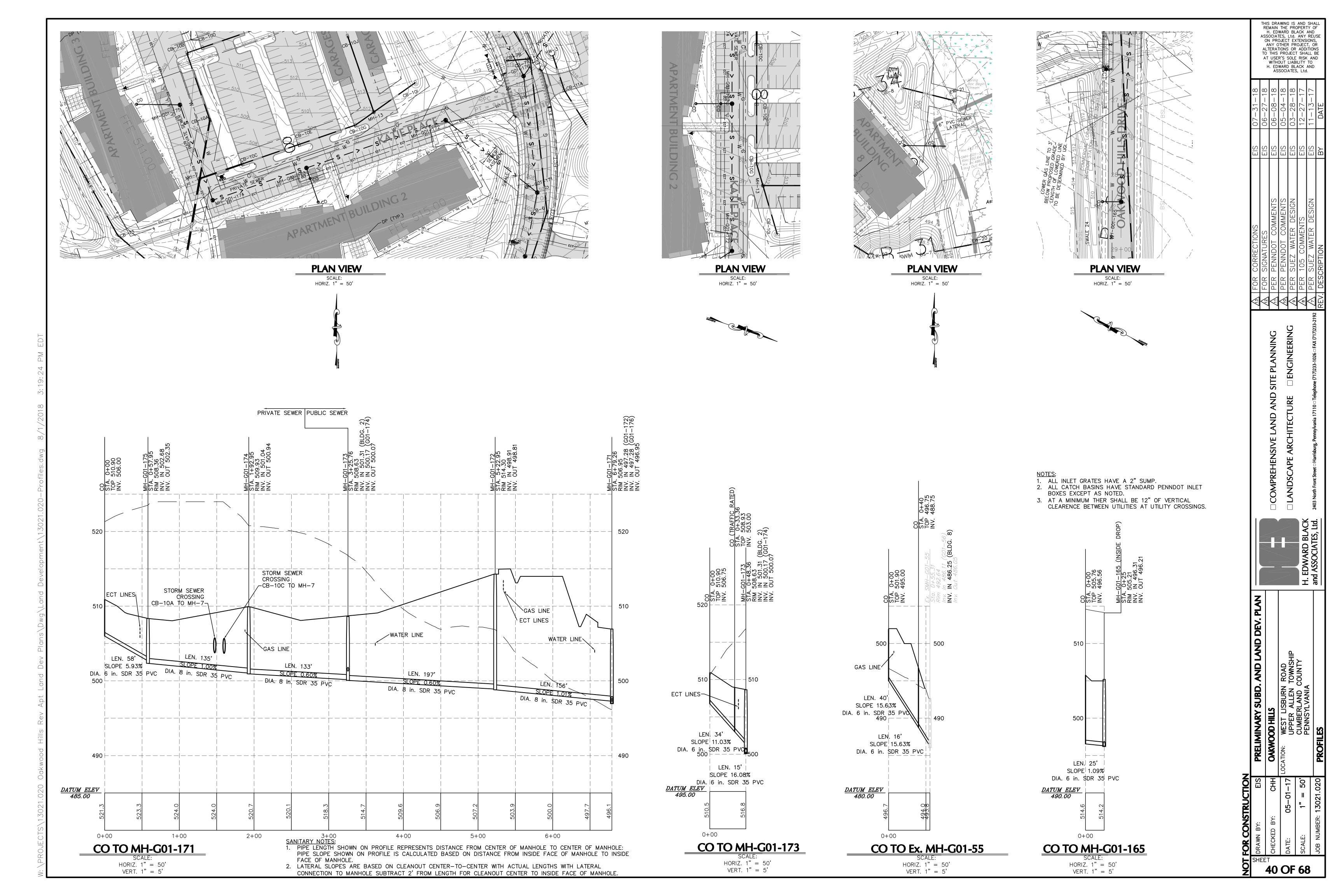


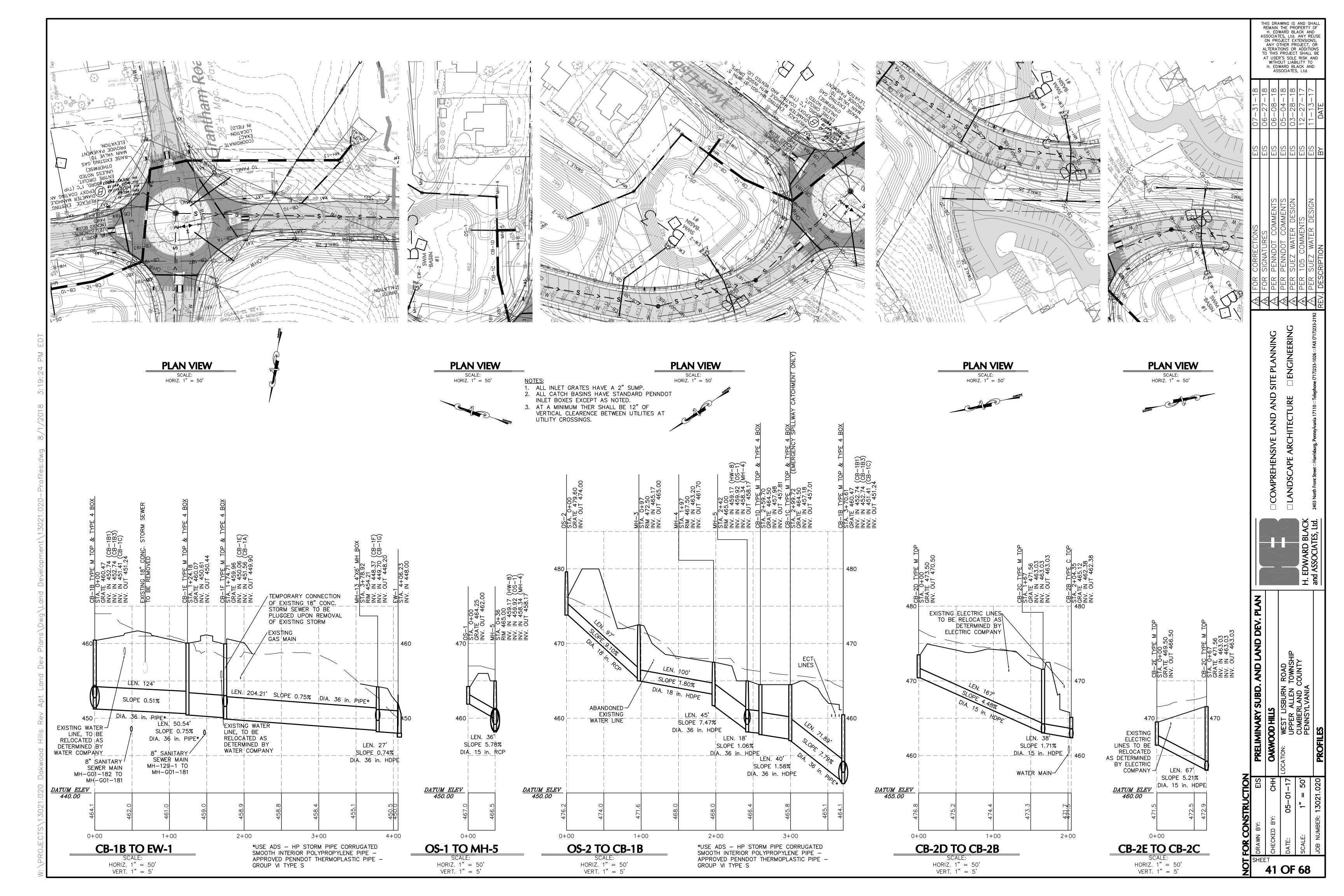


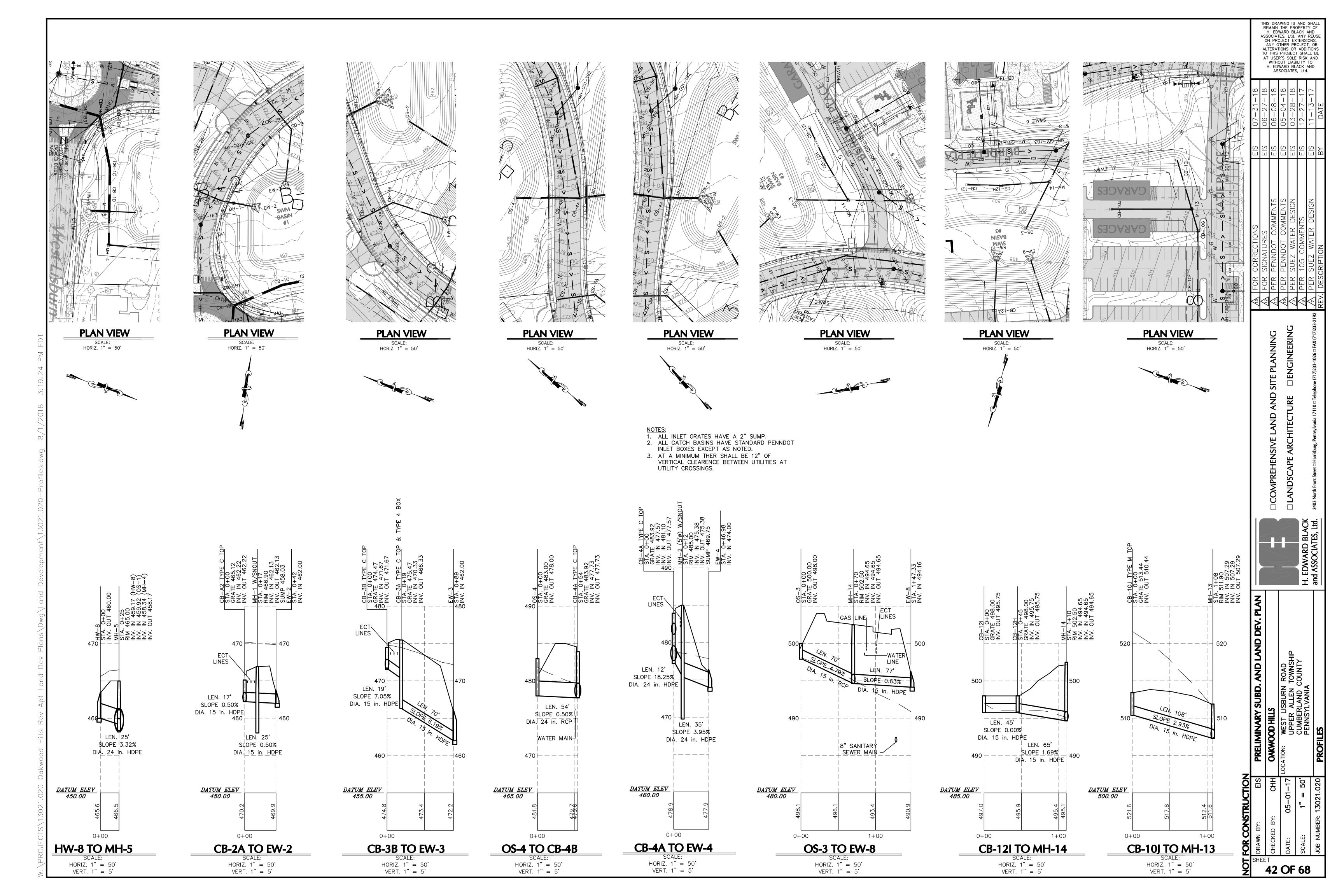


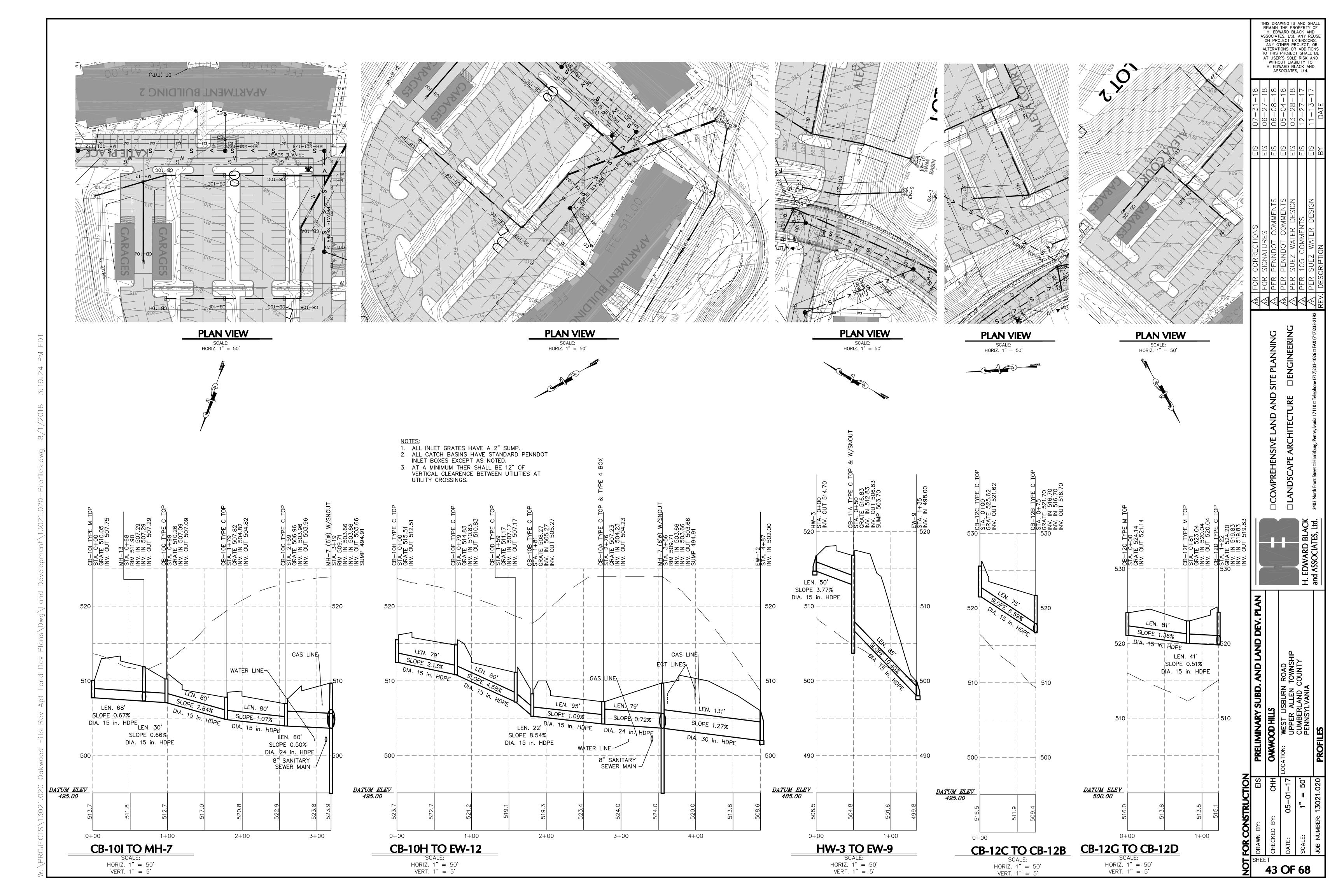
THIS DRAWING IS AND SHALL REMAIN THE PROPERTY OF H. EDWARD BLACK AND ASSOCIATES, Ltd. ANY REUSE ON PROJECT EXTENSIONS, ANY OTHER PROJECT, OR ALTERATIONS OR ADDITIONS TO THIS PROJECT SHALL BE AT USER'S SOLE RISK AND WITHOUT LIABILITY TO H. EDWARD BLACK AND ASSOCIATES, Ltd. 38 OF 68

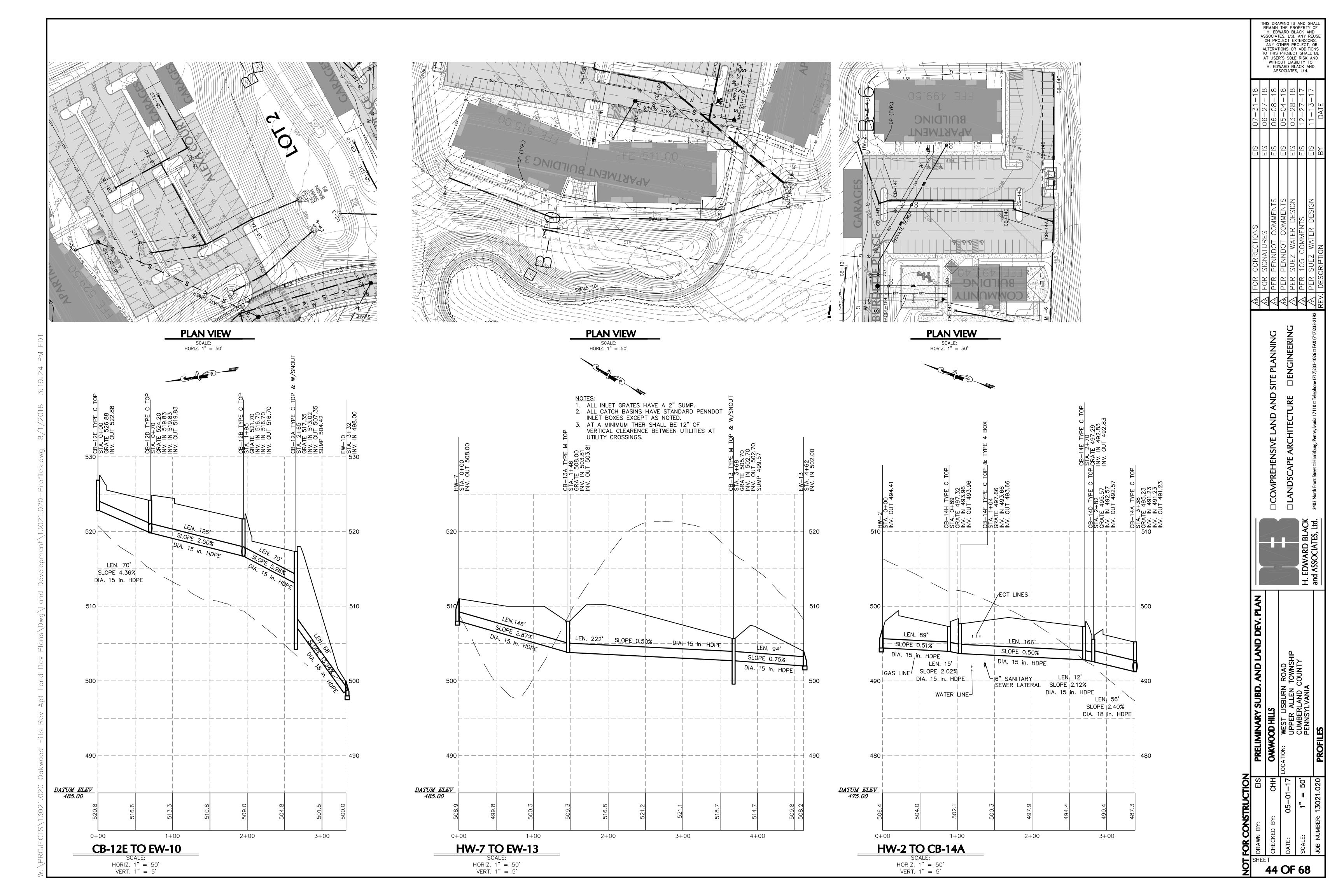


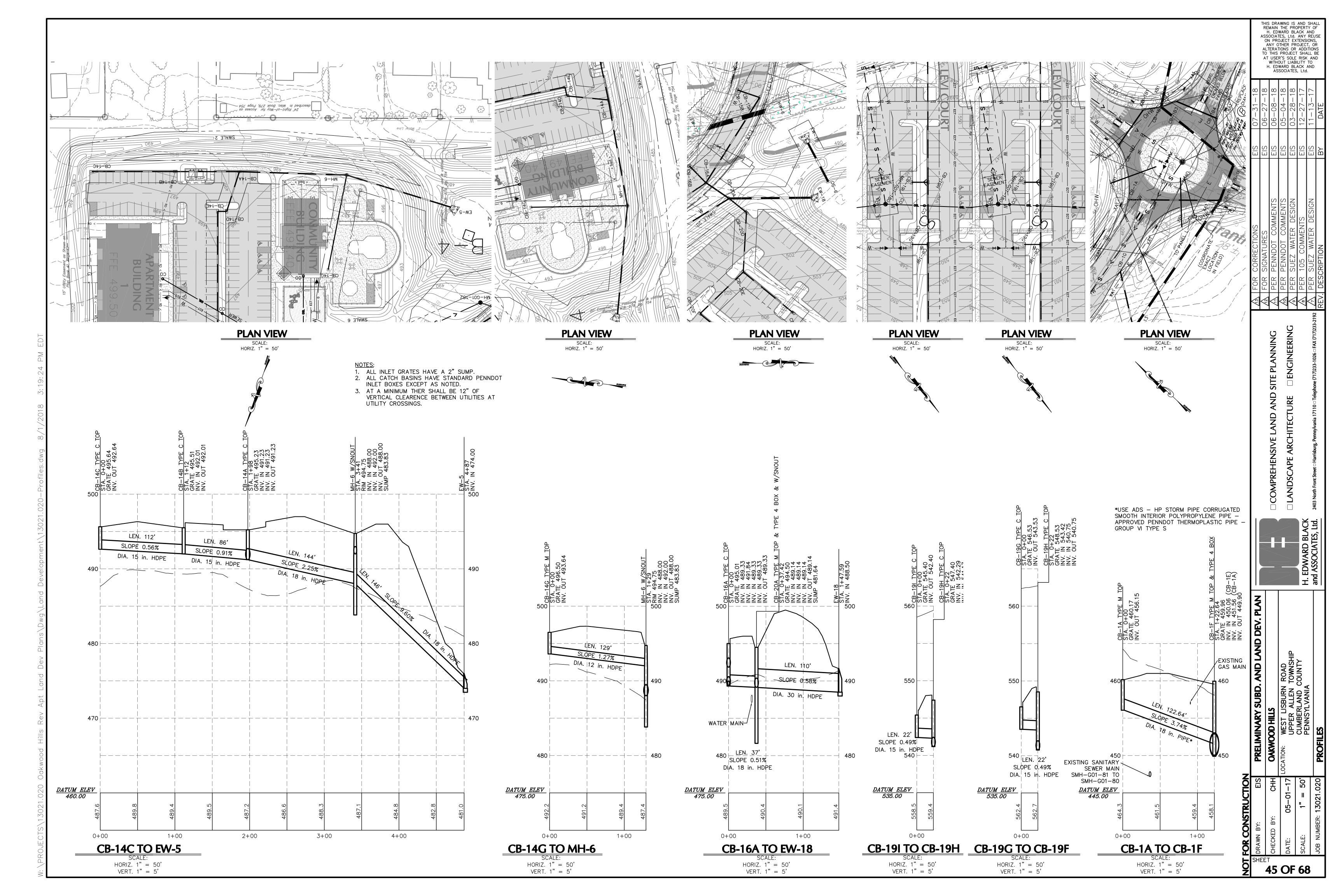


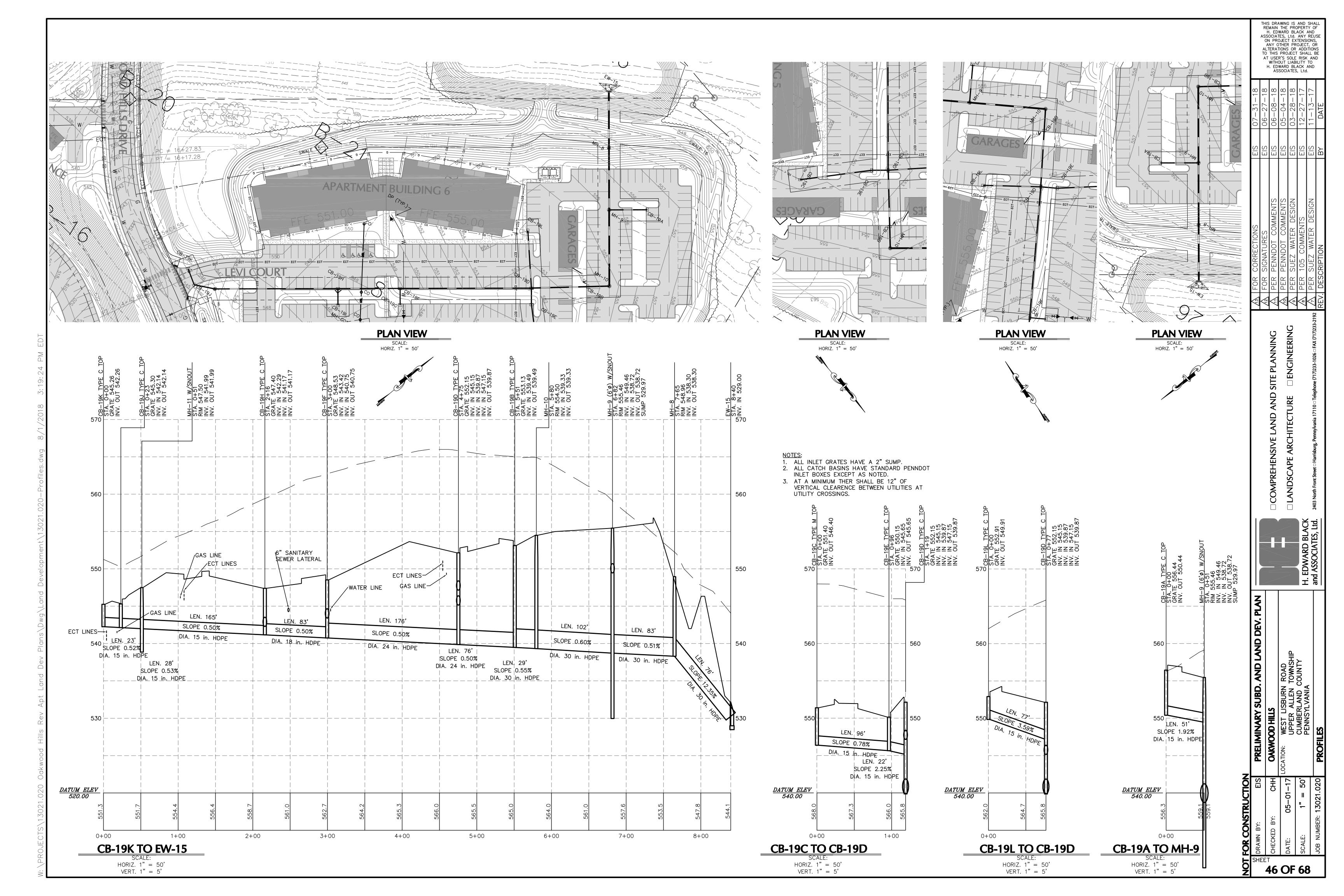


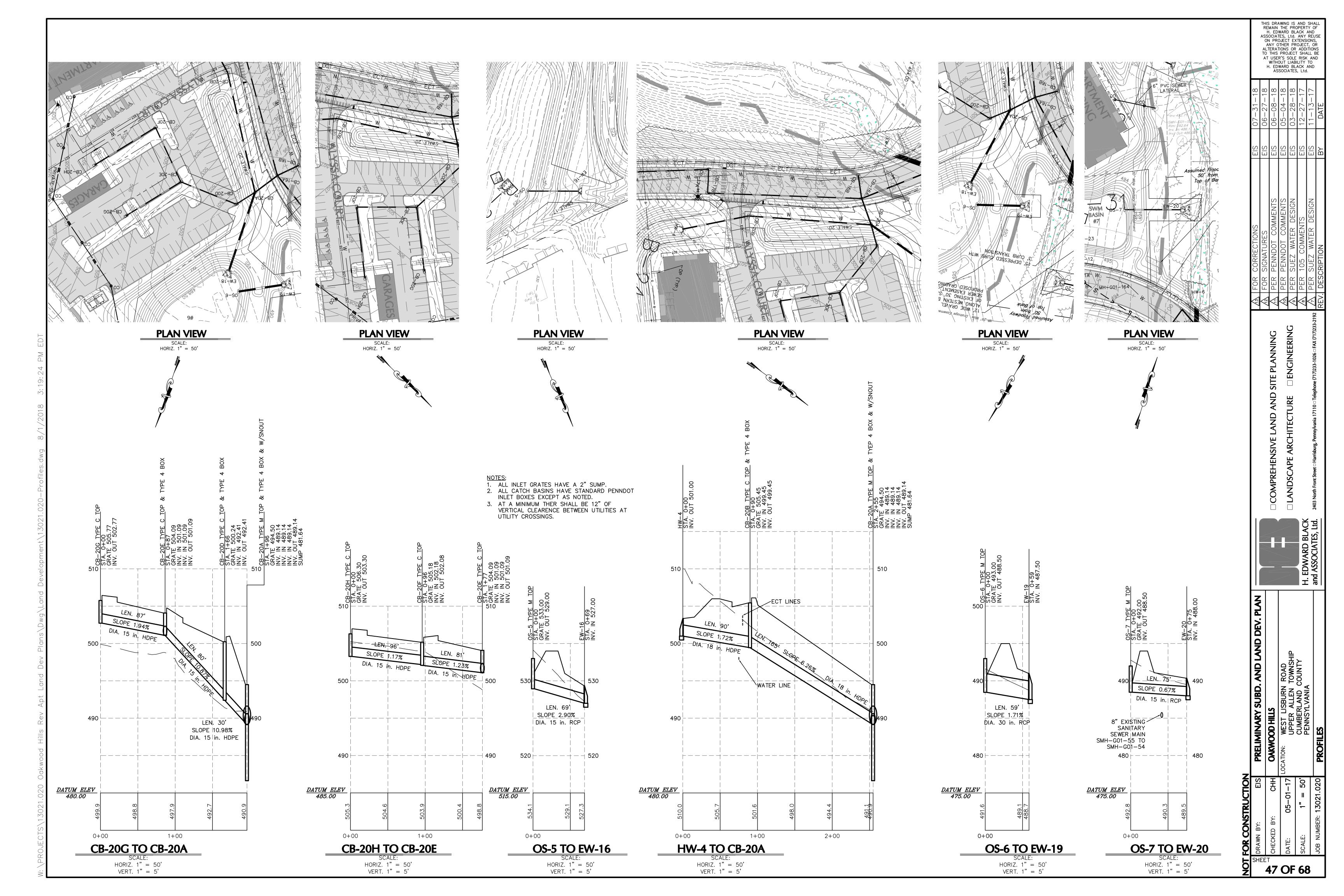


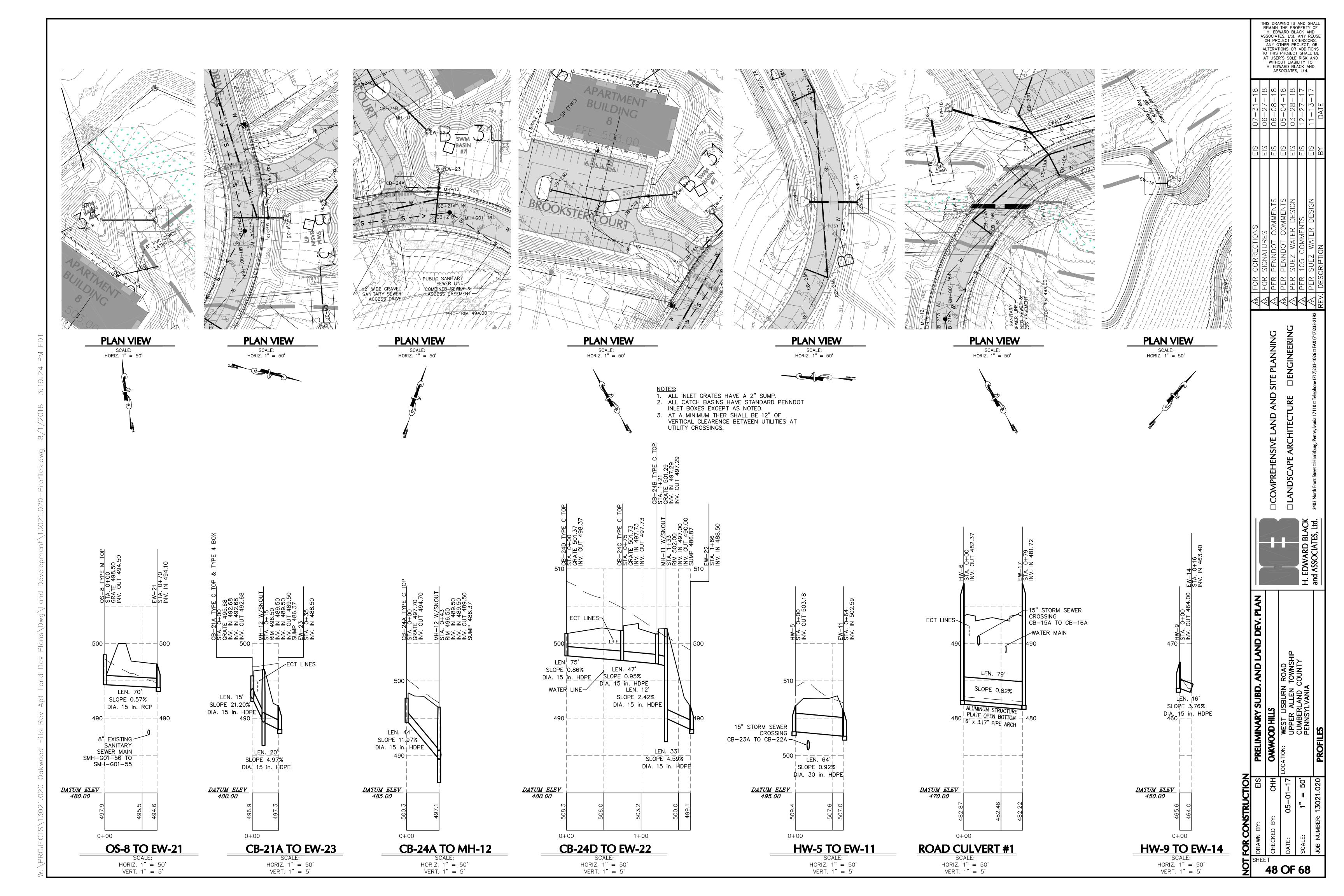


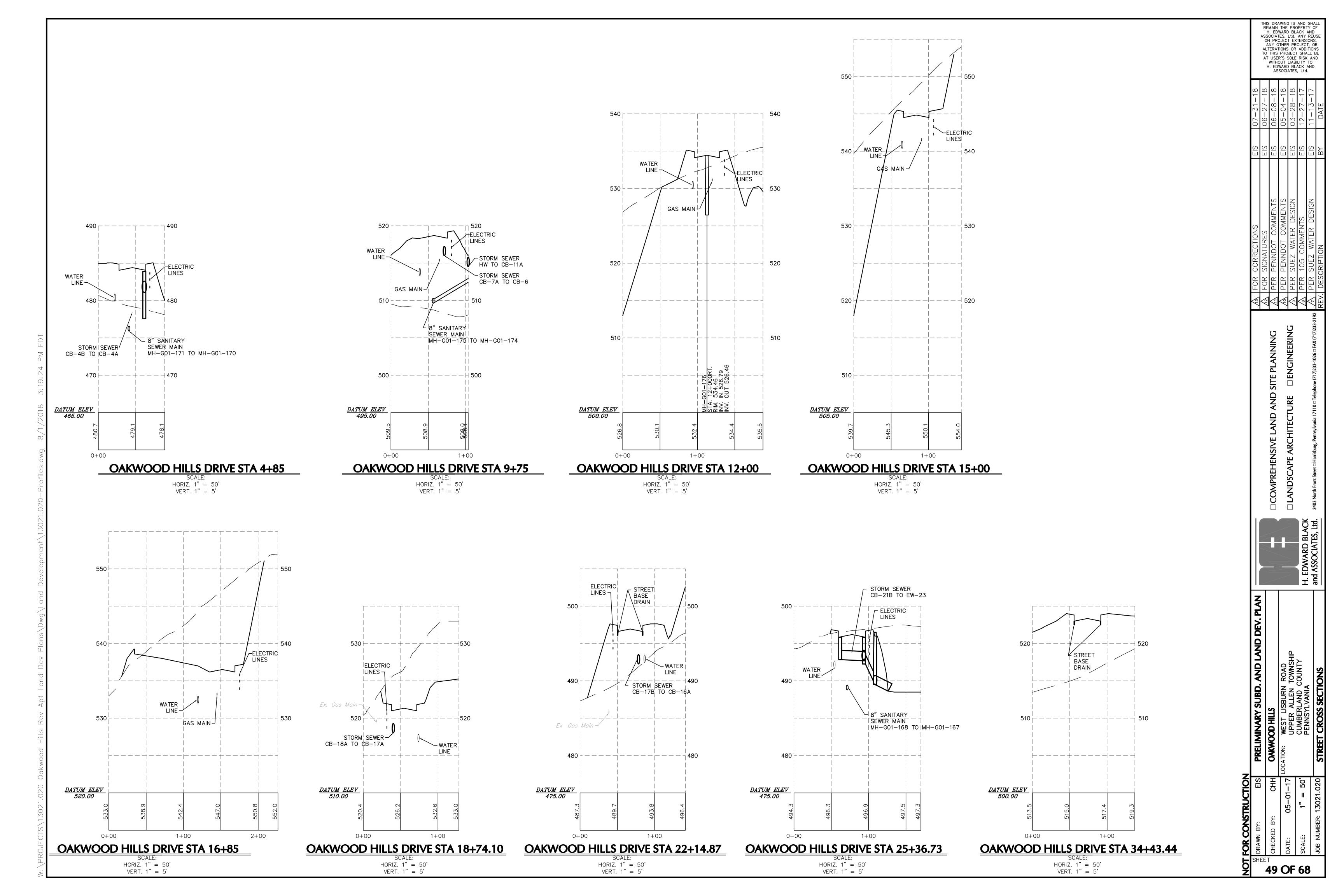


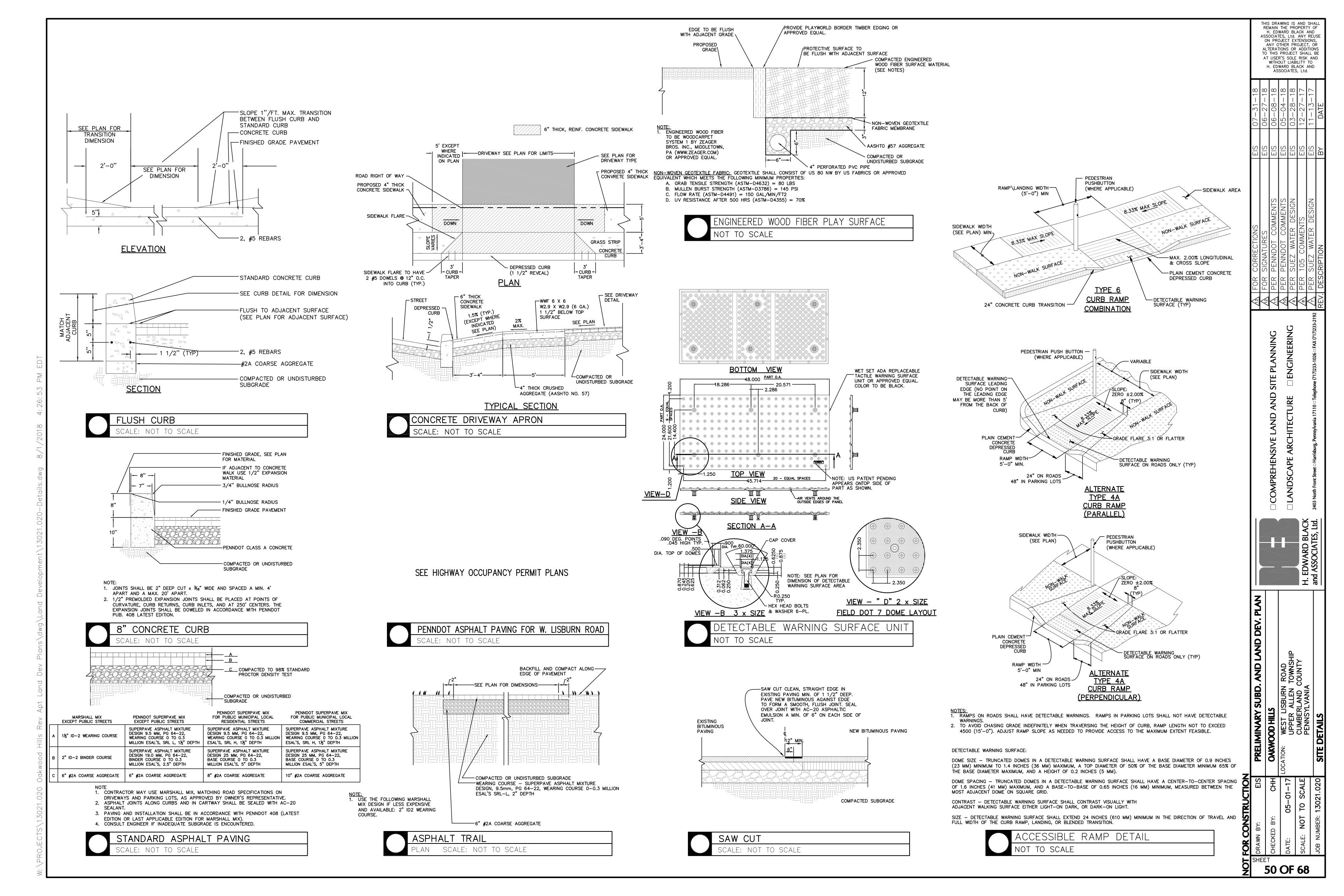


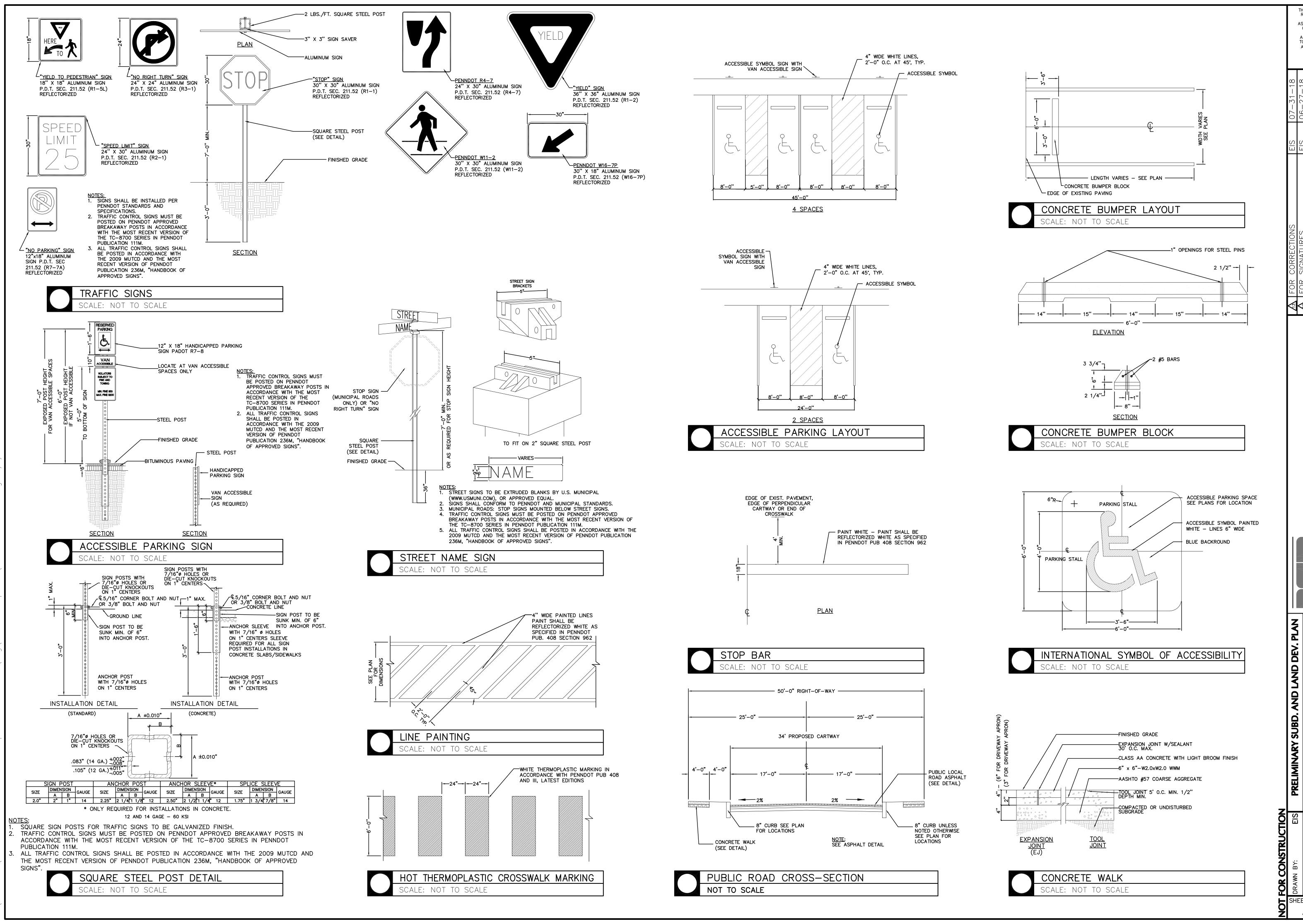






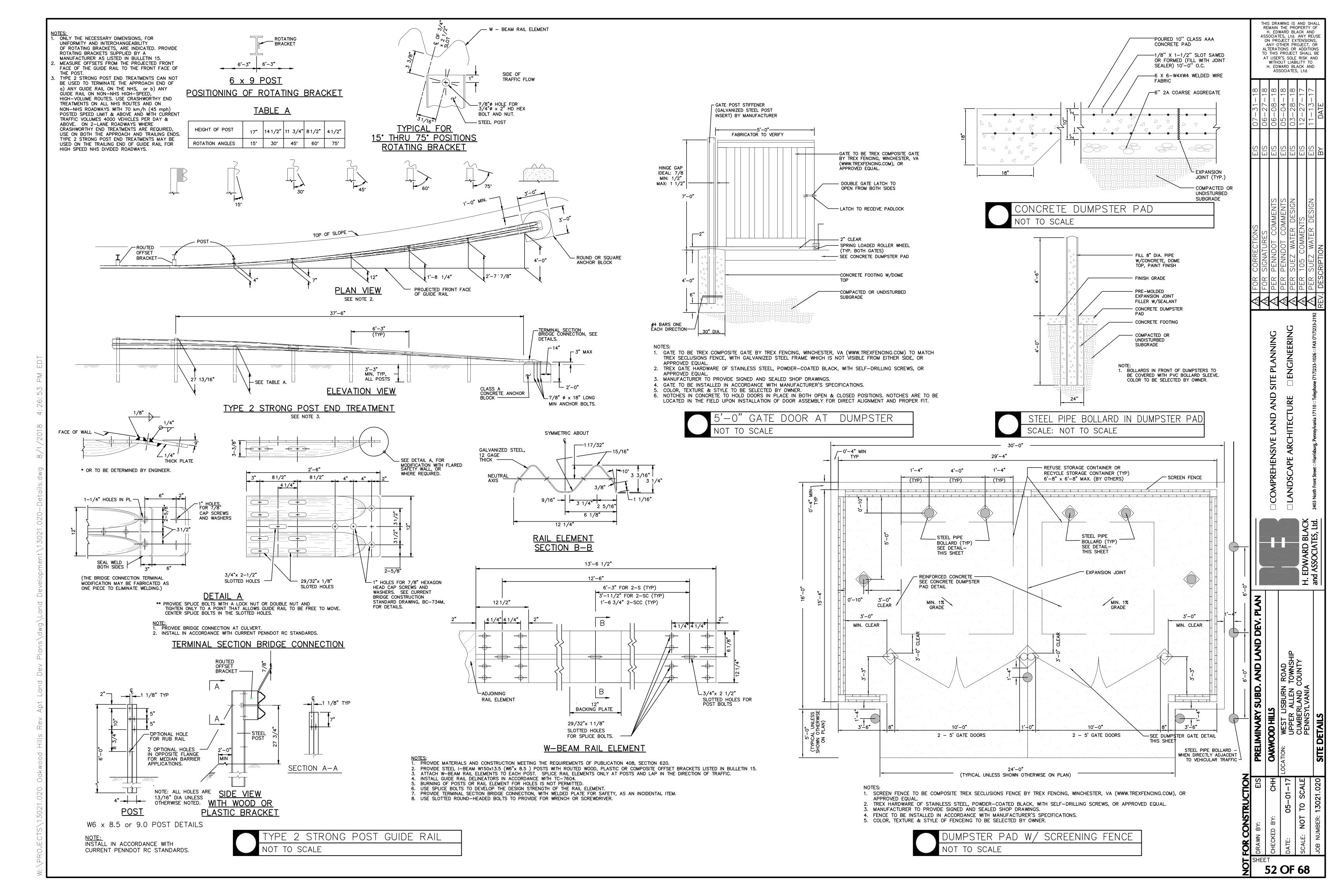


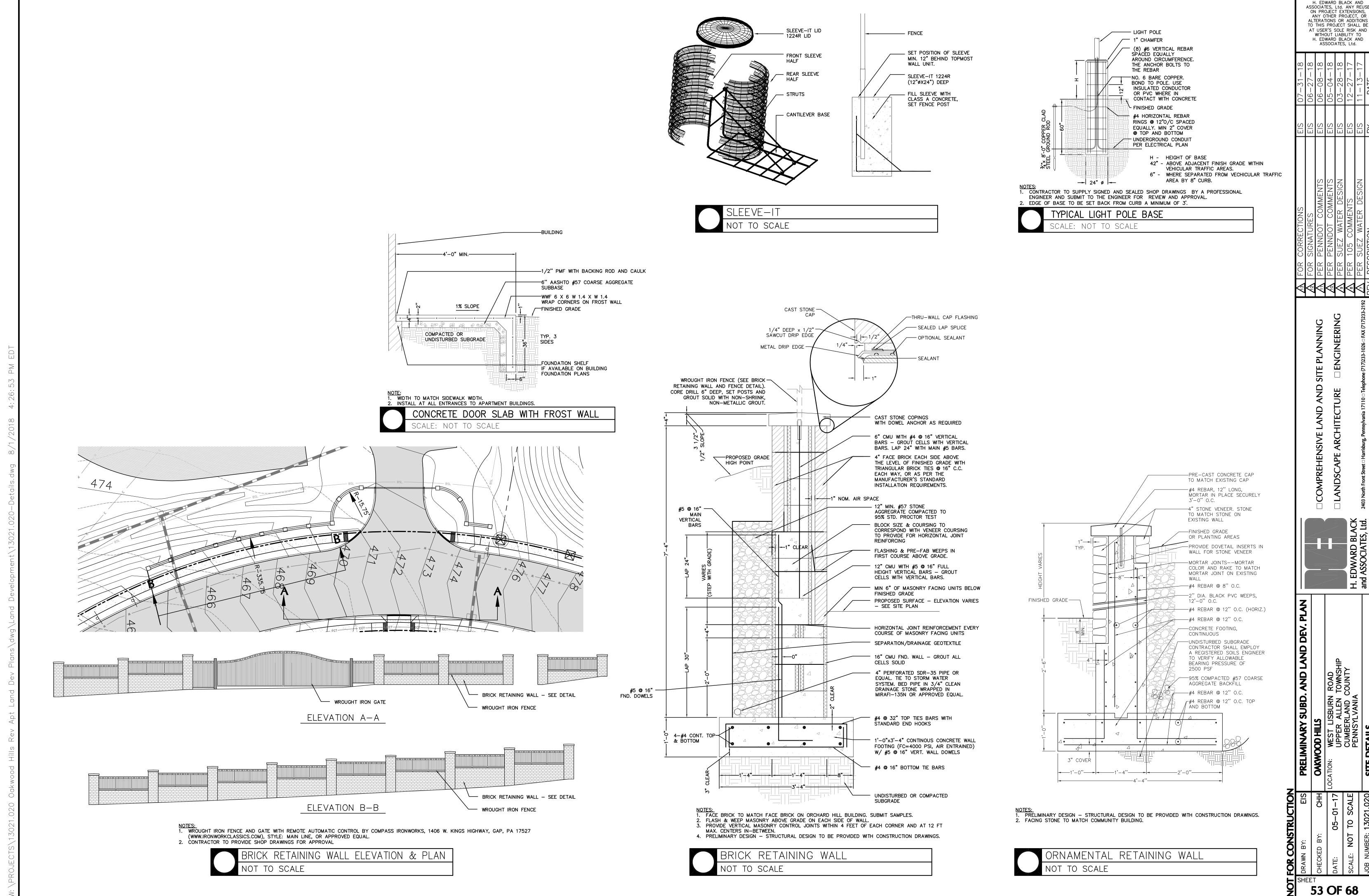




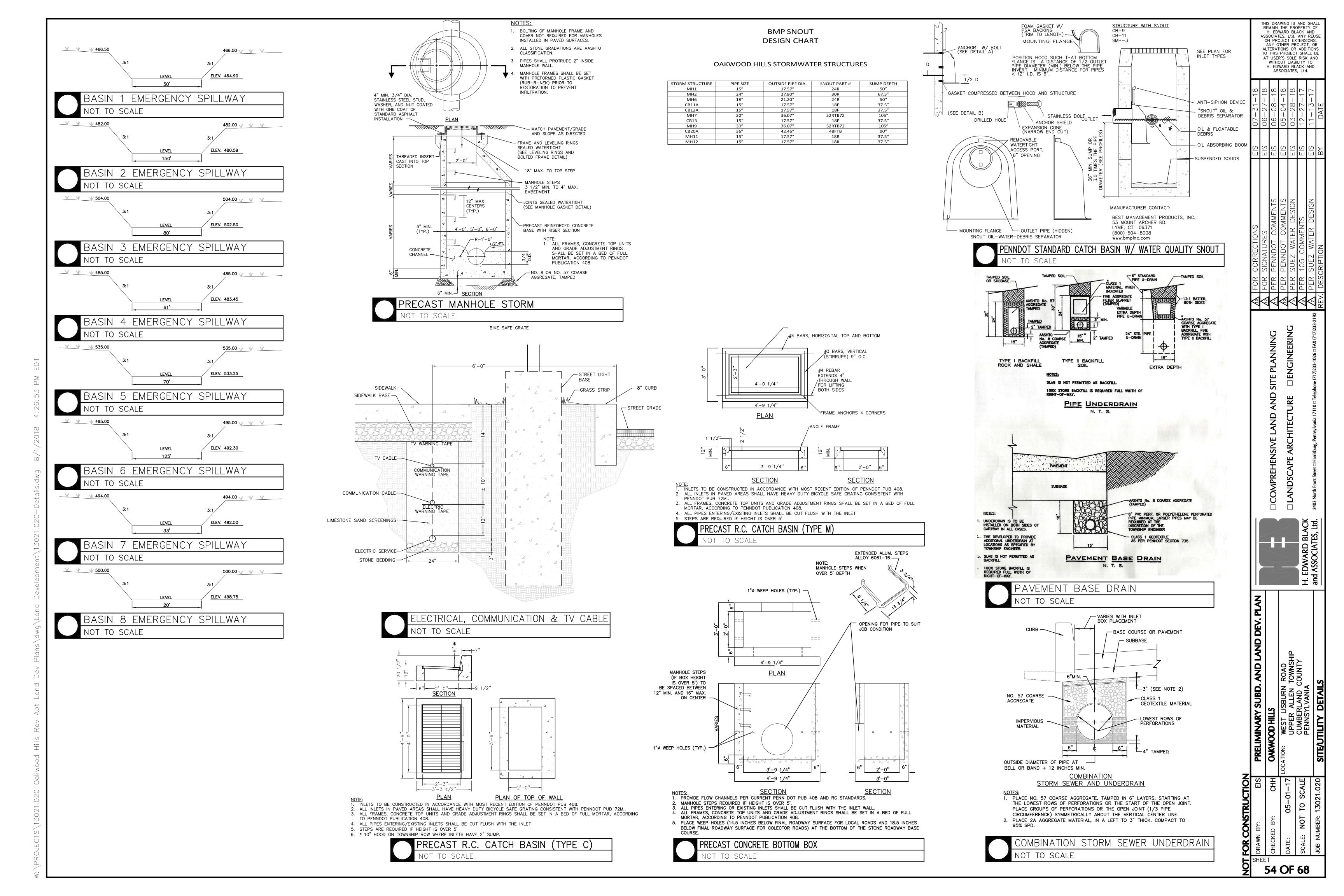
THIS DRAWING IS AND SHAL REMAIN THE PROPERTY OF H. EDWARD BLACK AND ASSOCIATES, Ltd. ANY REUS ON PROJECT EXTENSIONS, ANY OTHER PROJECT, OR ALTERATIONS OR ADDITIONS TO THIS PROJECT SHALL BE AT USER'S SOLE RISK AND H. EDWARD BLACK AND ASSOCIATES, Ltd.

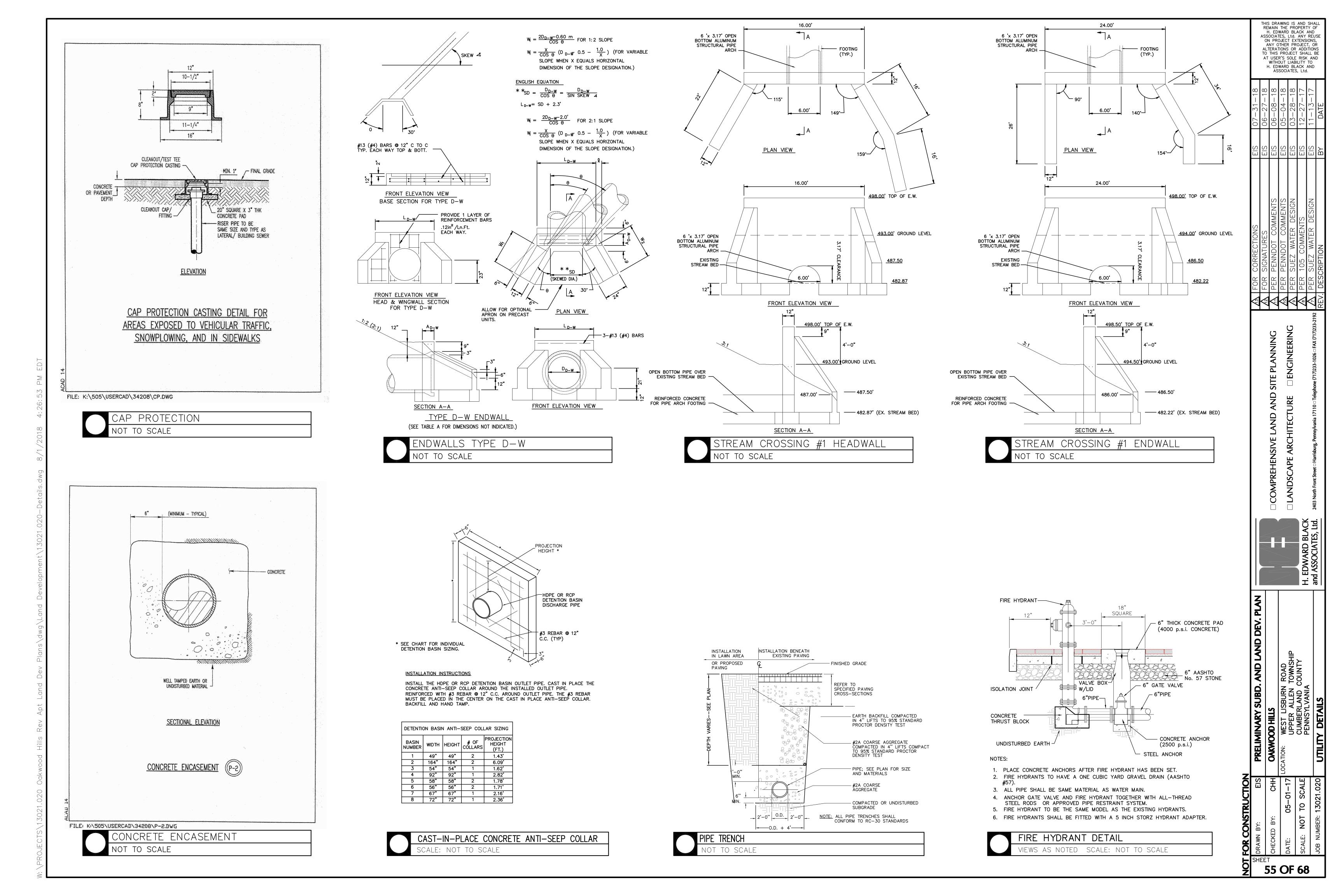
| S( | 9 |

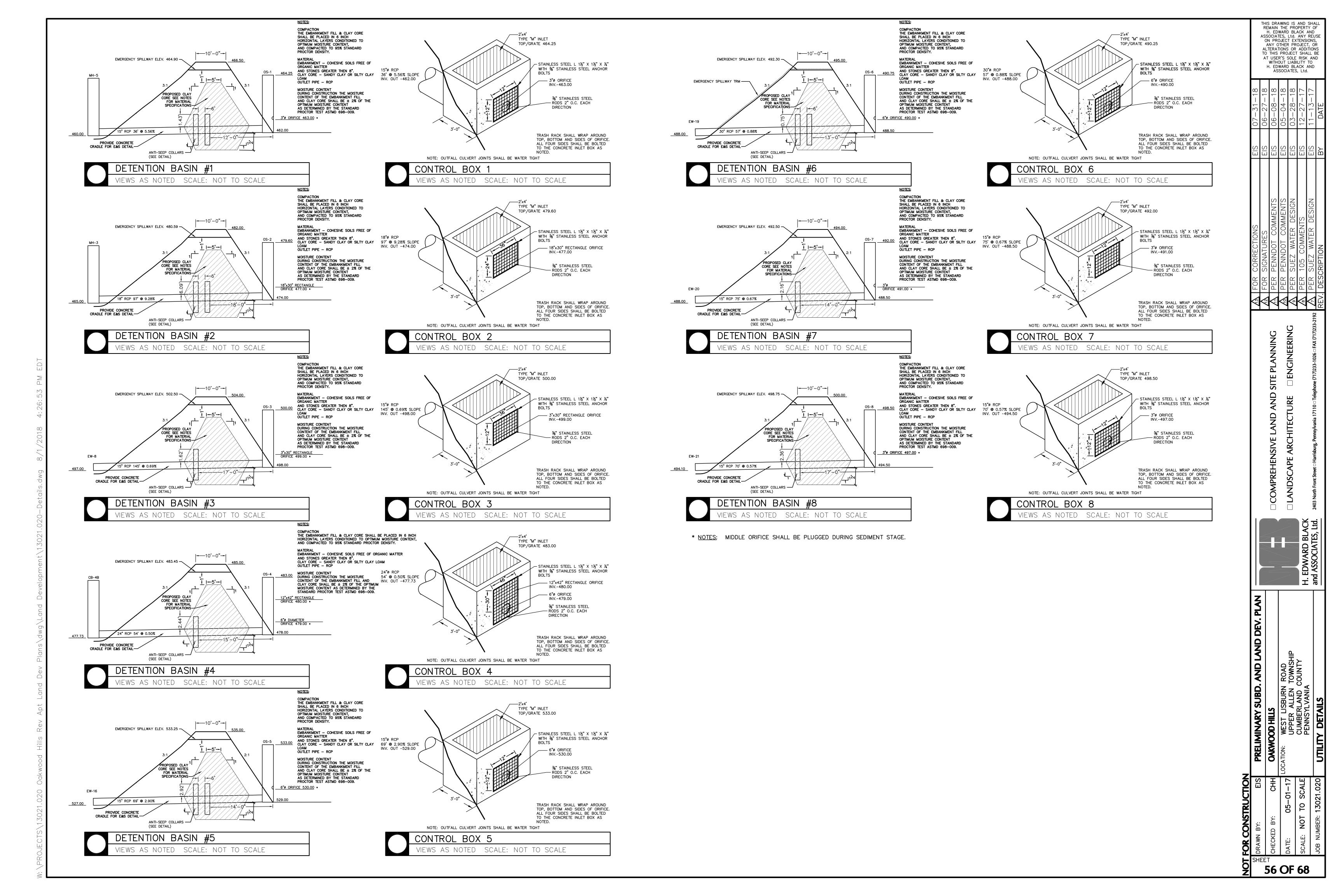


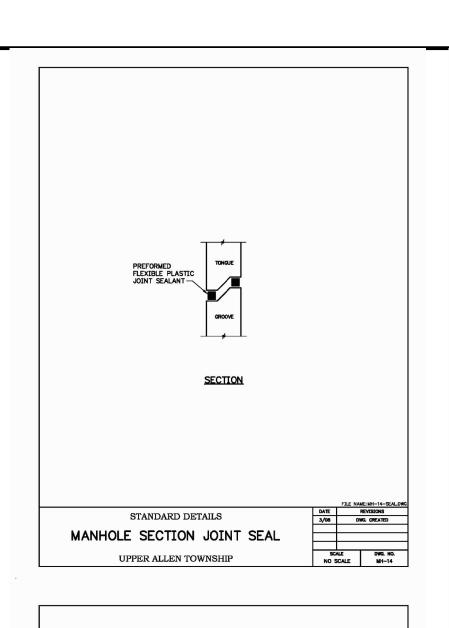


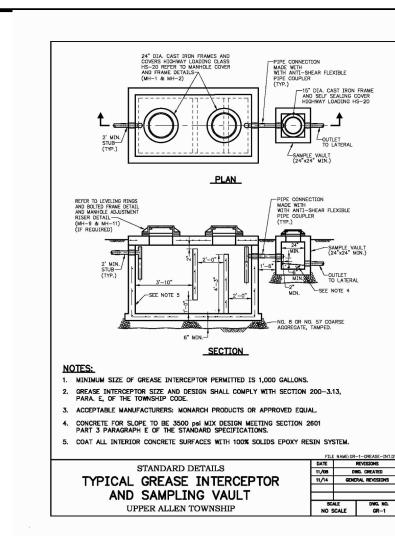
REMAIN THE PROPERTY OF H. EDWARD BLACK AND ASSOCIATES, Ltd. ANY REUSI ON PROJECT EXTENSIONS, ANY OTHER PROJECT, OR ALTERATIONS OR ADDITIONS TO THIS PROJECT SHALL BE AT USER'S SOLE RISK AND H. EDWARD BLACK AND

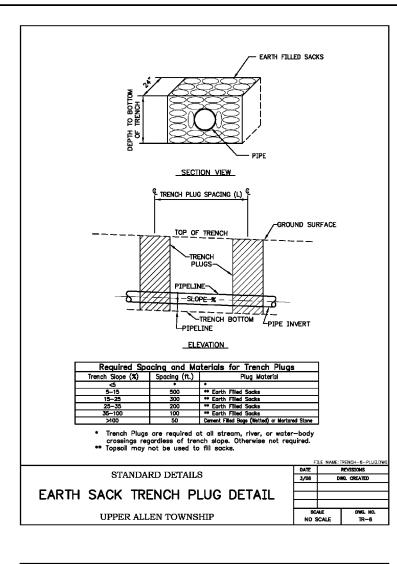


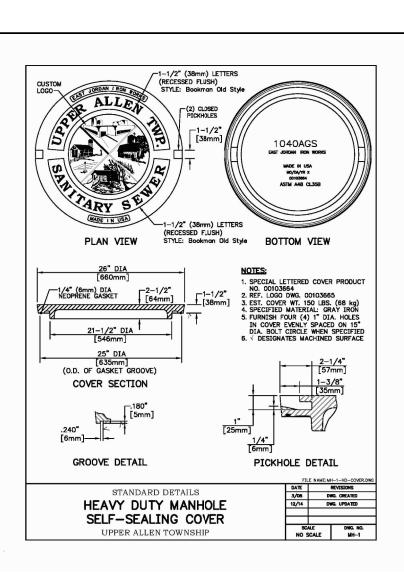


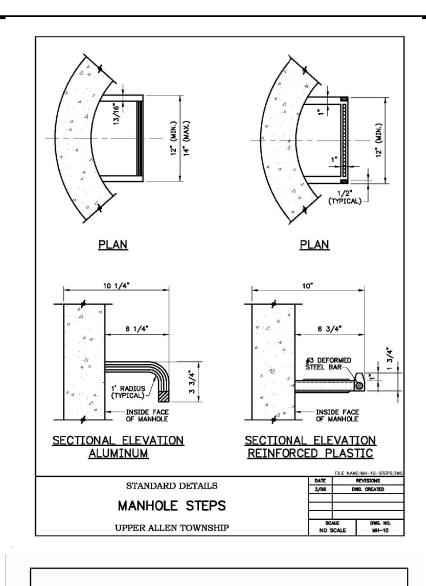


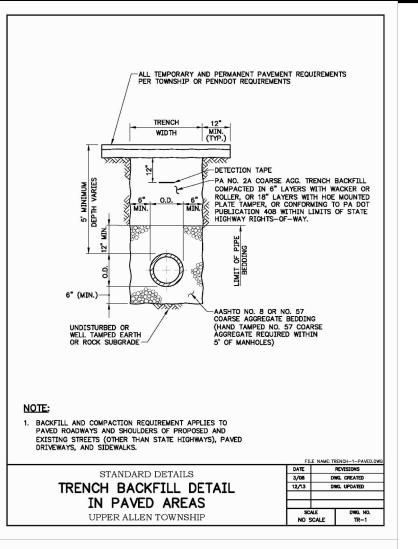


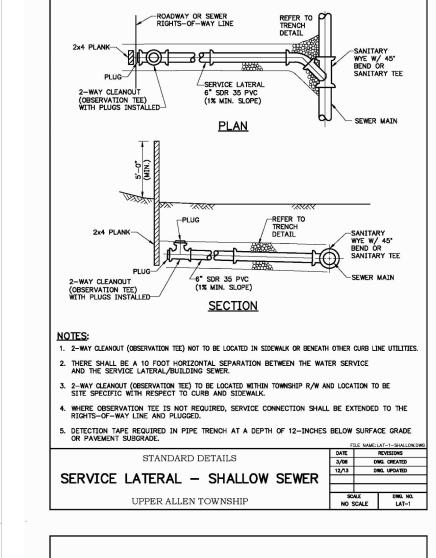










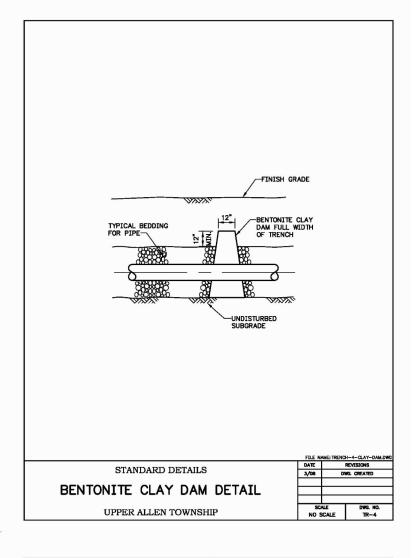


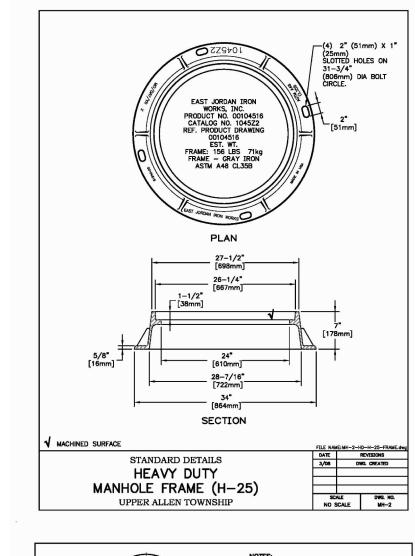
REMAIN THE PROPERTY OF

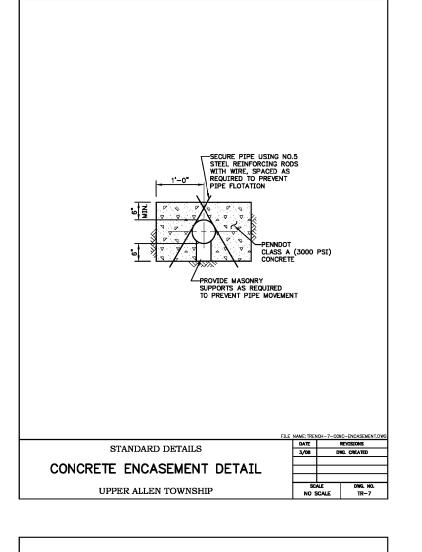
H. EDWARD BLACK AND ASSOCIATES, Ltd. ANY REUS ON PROJECT EXTENSIONS, ANY OTHER PROJECT, OR ALTERATIONS OR ADDITIONS

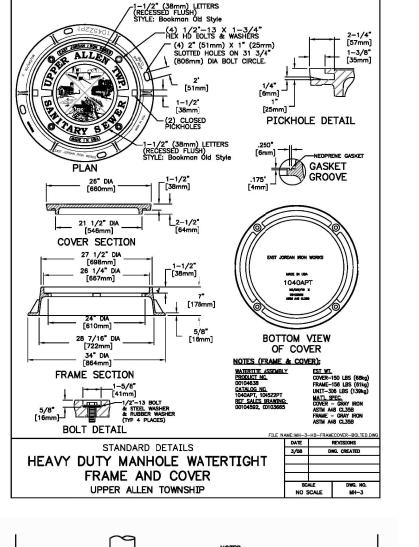
TO THIS PROJECT SHALL BE AT USER'S SOLE RISK AND

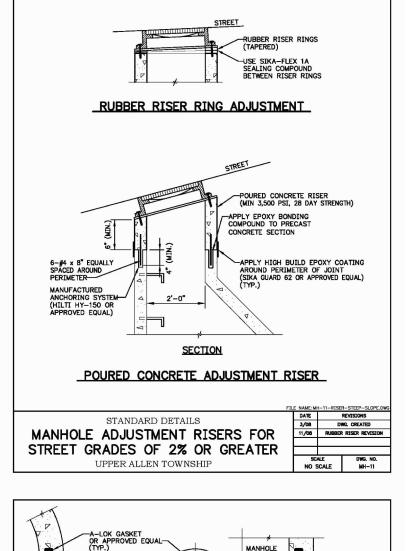
H. EDWARD BLACK AND ASSOCIATES, Ltd.

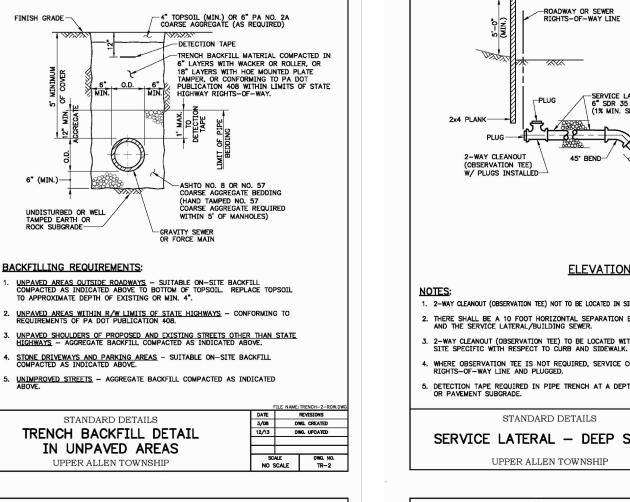


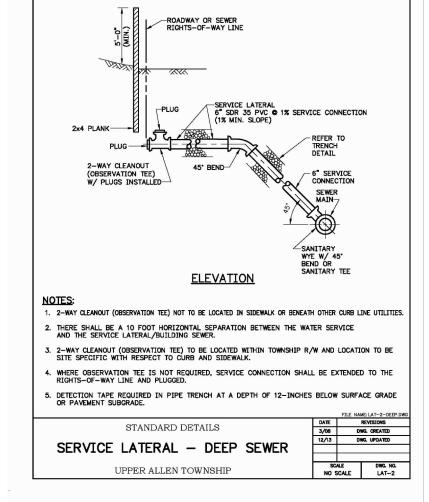


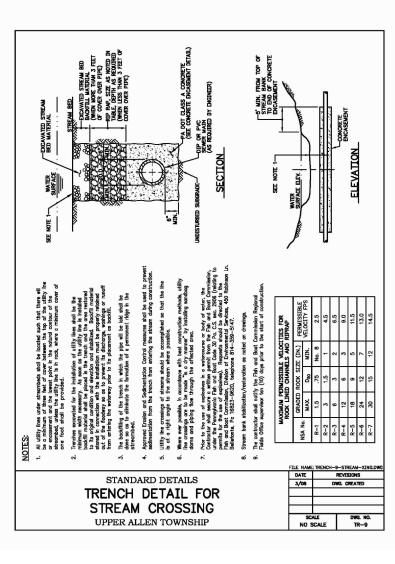


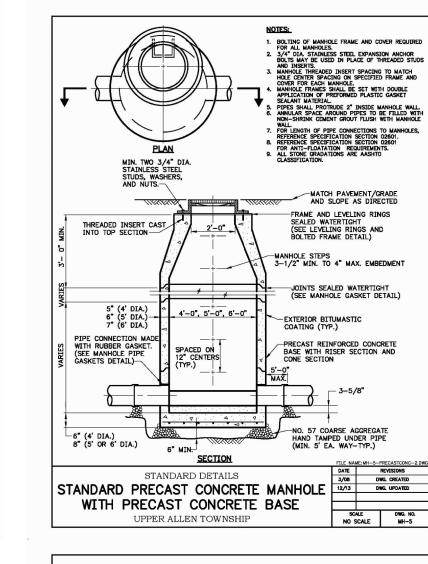


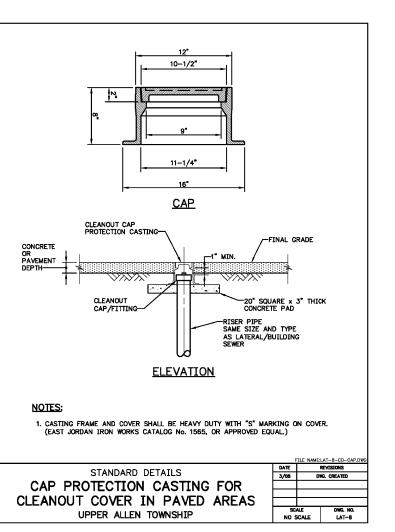


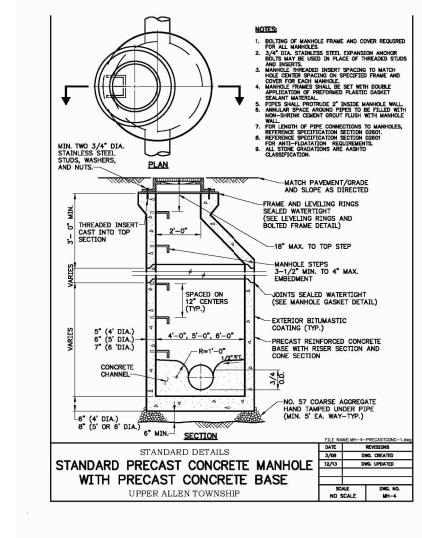


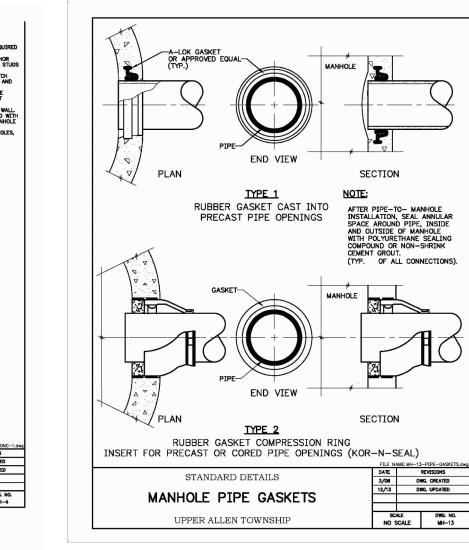


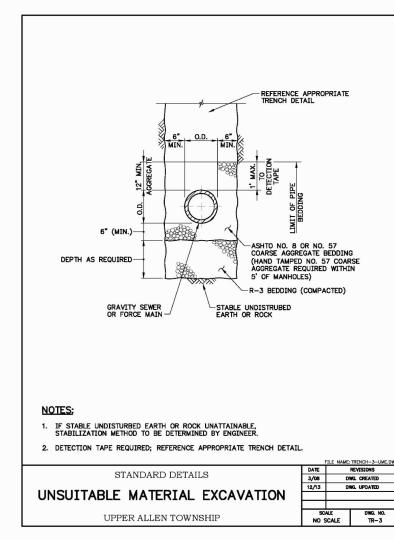


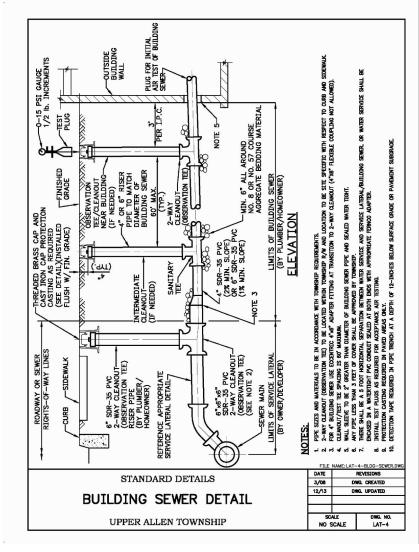


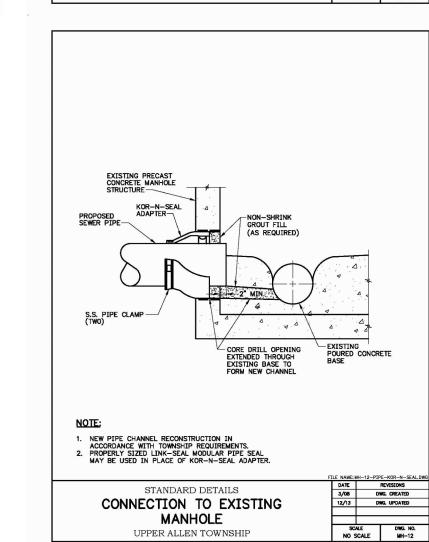


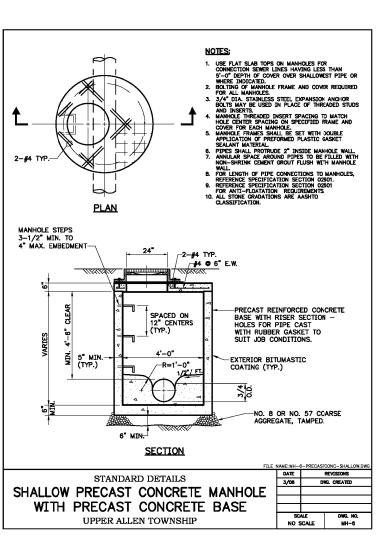


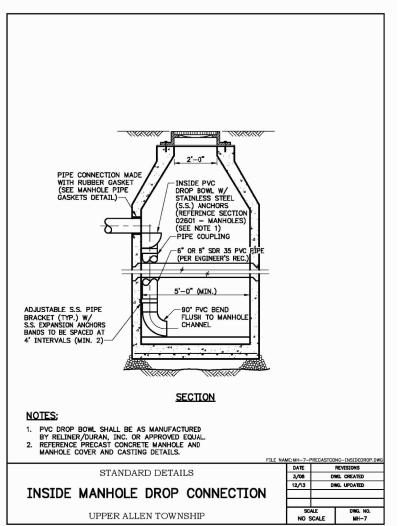


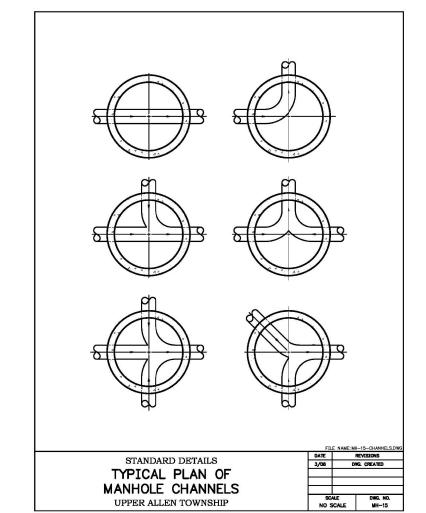


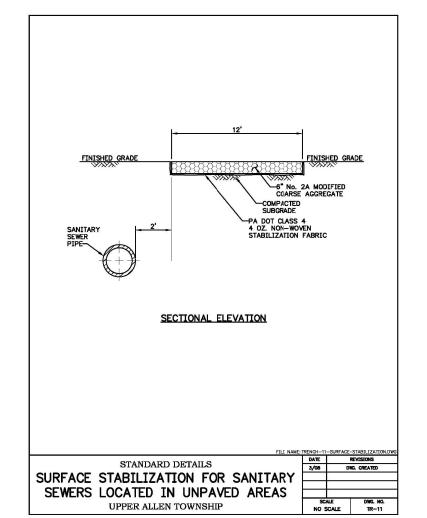


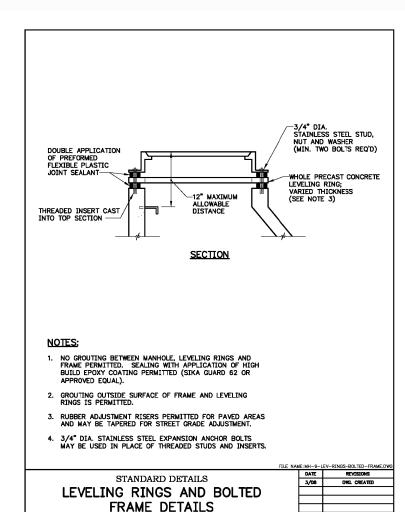






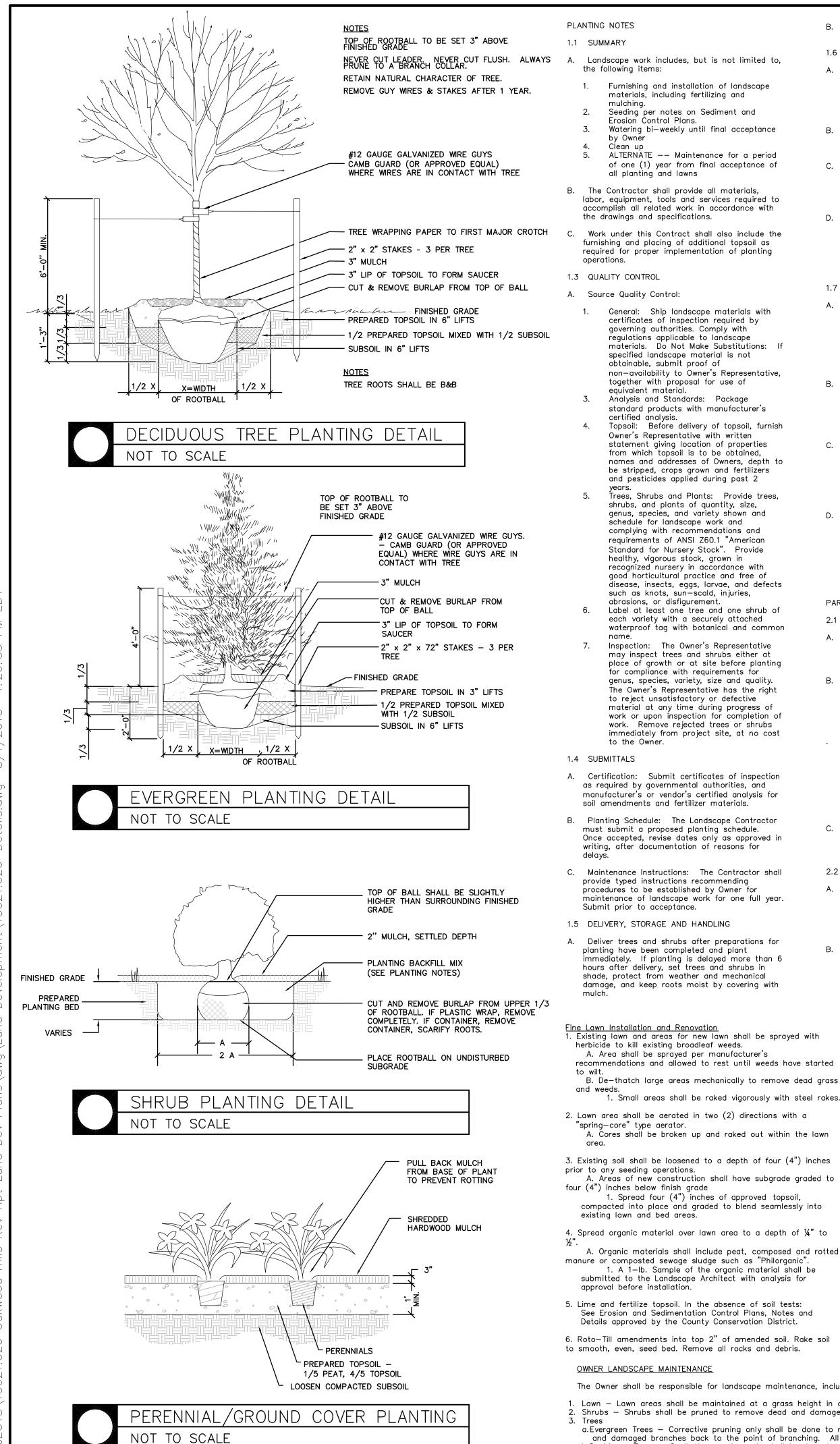






DOUBLE APPLICATION OF PREFORMED FLEXIBLE PLASTIC JOINT SEALANT THREADED INSERT CAST INTO TOP SECTION  DOUBLE APPLICATION OF PREFORMED FLEXIBLE PLASTIC JOINT SEALANT SECTION	3/4" DIA. STAINLESS STEEL ST NUT AND WASHER (MIN. TWO BOLTS RE WHOLE PRECAST CONC LEVELING RING; VARIED THICKNESS (SEE NOTE 3)	DWG. NO. LAT-4	PRELIMINARY SUBD. AND LAND DE	OAKWOOD HILLS	LOCATION: WEST LISBURN ROAD
NOTES:  1. NO GROUTING BETWEEN MANHOLE, LEVELING RINGS AND FRAME PERMITTED. SEALING WITH APPLICATION OF HIGH BUILD EPOXY COATING PERMITTED (SIKA GUARD 62 OR APPROVED EQUAL).			EIS	CHH	1, 1
GROUTING OUTSIDE SURFACE OF FRAME AND LEVELING RINGS IS PERMITTED.     RUBBER ADJUSTMENT RISERS PERMITTED FOR PAVED AREAS					۱ ۹
AND MAY BE TAPERED FOR STREET GRADE ADJUSTMENT.  4. 3/4" DIA. STAINLESS STEEL EXPANSION ANCHOR BOLTS					
MAY BE USED IN PLACE OF THREADED STUDS AND INSERTS.		S		BY:	
STANDARD DETAILS LEVELING RINGS AND BOLTED FRAME DETAILS UPPER ALLEN TOWNSHIP	NAME:MH-0-LEV-RINGS-BOLTEL   DATE	ONS	DRAWN BY:	HECKED B	

D, ('D) PETE	PRELIMINARY SUBD. AN	OAKWOOD HILLS	LOCATION: WEST LISBURN ROA UPPER ALLEN TOW	CUMBERLAND COUN PENNSYLVANIA	SANITARY SEWER DETAI
	EIS	CHH	05-01-17	TO SCALE	13021.020
FRAMEDWO S S TROO	DRAWN BY:	CHECKED BY:	DATE:	SCALE: NOT TO SCALE	JOB NUMBER: 13021.020
FC	SHEE	:⊤ <b>57</b>	OF	68	



B. Do not remove container-grown stock from containers until planting time.

1.6 JOB CONDITIONS

materials, including fertilizing and

Seeding per notes on Sediment and

Watering bi—weekly until final acceptance

ALTERNATE -- Maintenance for a period

General: Ship landscape materials with

certificates of inspection required by

governing authorities. Comply with

specified landscape material is not

together with proposal for use of

Analysis and Standards: Package

Owner's Representative with written

standard products with manufacturer's

statement giving location of properties

be stripped, crops grown and fertilizers

Trees, Shrubs and Plants: Provide trees,

genus, species, and variety shown and

and pesticides applied during past 2

shrubs, and plants of quantity, size,

complying with recommendations and

requirements of ANSI Z60.1 "American

Standard for Nursery Stock". Provide

recognized nursery in accordance with

good horticultural practice and free of

disease, insects, eggs, larvae, and defects

Label at least one tree and one shrub of

waterproof tag with botanical and common

schedule for landscape work and

healthy, vigorous stock, grown in

such as knots, sun-scald, injuries,

each variety with a securely attached

Inspection: The Owner's Representative

for compliance with requirements for

to reject unsatisfactory or defective

to the Owner.

may inspect trees and shrubs either at

place of growth or at site before planting

genus, species, variety, size and quality.

The Owner's Representative has the right

material at any time during progress of

work. Remove rejected trees or shrubs

work or upon inspection for completion of

immediately from project site, at no cost

1. Small areas shall be raked vigorously with steel rakes

1. Spread four (4") inches of approved topsoil,

1. A 1-lb. Sample of the organic material shall be

abrasions, or disfigurement.

from which topsoil is to be obtained,

obtainable, submit proof of

equivalent material.

certified analysis.

regulations applicable to landscape

materials. Do Not Make Substitutions: If

non-availability to Owner's Representative,

Topsoil: Before delivery of topsoil, furnish

names and addresses of Owners, depth to

of one (1) year from final acceptance of

Erosion Control Plans.

all planting and lawns

by Owner

Clean up

A. Utilities: Determine locations of underground utilities and perform work in a manner which will avoid possible damage. Hand excavate as required. Maintain grade stakes set by others until removal is mutually agreed upon by parties

B. Excavation: When conditions detrimental to plant growth are encountered notify Owner's Representative before planting.

C. Planting Time: Proceed with, and complete landscape work as rapidly as portions of site become available, working within seasonal limitations. Plant or install materials during normal planting seasons for each type.

D. Coordination with Lawns: Plant trees and shrubs after final grades are established and prior to planting of lawns unless otherwise acceptable to Owner's Representative. If planting occurs after lawn work, protect lawn areas and promptly repair damage to lawns resulting from planting operations.

1.7 SPECIAL PROJECT WARRANTY

A. Maintain trees and shrubs through specified maintenance period or until the date of final acceptance, whichever is longer. The date of final acceptance is defined as the inspection requested by the Contractor after the last of the total planting is installed and mulched, and at which time all conditions are acceptable to the Owner and the Owner's Representative.

B. Although periodic request for payment will be accepted, their individual approval and subsequent payment shall not activate the guarantee period until all plants are in place and inspected by the Owner and the Owner's Representative.

C. Warranty trees and shrubs, for a period of one year after date of final acceptance, against defects including death and unsatisfactory growth, except for defects resulting from neglect by Owner, abuse or damage by others, or unusual phenomena or incidents which are beyond Landscape Installer's control.

D. Remove and replace trees, shrubs, or other plants found to be dead or in unhealthy condition during warranty period. Make replacements during growth season following end of warranty period. Replace trees and shrubs which are in doubtful condition at end of warranty period: unless, in opinion of the Owner's Representative, it is advisable to extend warranty period for a full growing season.

PART 2 - PRODUCTS

2.1 TOPSOIL

A. On-site topsoil may be used for planting operation. Additional topsoil for planting backfill must be furnished by Landscape Contractor from an approved off-site source.

B. Provide new topsoil that is fertile, friable, natural loam, surface soil, free of subsoil, clay lumps, brush, weeds and other litter, and free of roots, stumps, stones larger than 1 inch in any dimension, and other extraneous or toxic matter harmful to plant growth in accordance with AASHTO Designation T89.

Obtain topsoil from local sources or from areas having suitable soil characteristics. Obtain topsoil only from naturally, well-drained sites where topsoil occurs in a depth of not less than 4 inches. not obtain from bogs or marshes. Topsoil shall have minimum five (5%)

percent organic material by weight. C. All material unsuitable for use as topsoil and accumulated as part of the landscape contract shall become the property of the Contractor and shall be expeditiously removed from the site.

2.2 SOIL AMENDMENTS

A. Lime: Natural dolomitic limestone containing not less than 85 percent of total carbonates with a minimum of 30 percent magnesium carbonates, ground so that not less than 90 percent passes a 10-mesh sieve and not less than 50 percent passes a 100-mesh sieve.

7. Seed mix and rate for Standard Turf: See Erosion and

Landscape Architect for approval prior to seeding.

B. Seed in two (2) directions.

equal at manufacturer's recommended rates.

germinated and accepted by Owner

(2") inches and bag clippings.

Sedimentation Control Plans, Notes and Details approved by the

1. Tack with polymer used with hydroseeder at a rate that

2. Small areas shall be mulched with "Penn-Mulch" or

A. Remove all straw mulch upon full germination of lawn.

B. Mow as necessary until lawn is accepted. When grass

reaches a height of three (3") inches cut to a height of two

8. Water and maintain new lawn as necessary until fully

following items five (5) through and including nine (8).

1. The areas are 90% germinated

D. Reseeded lawn areas will be acceptable when:

from a height of three (3") inches to a height of two (2")

B. Aluminum Sulfate: Commercial grade.

County Conservation District.

water with fine spray.

insures straw placement

inches.

C. Peat: Peat shall be sphagnum peat moss. It shall be finely shredded, consist of 100% organic peat, be brown in color, and suitable for horticultural purposes. Peat shall be measured in air dry conditions, containing not more than thirty-five percent (35%) moisture by weight.

D. Bonemeal: Commercial, raw, finely ground; 4 % N & 20 % phosphoric acid.

E. Superphosphate: Soluble mixture of treated minerals: 20 %phosphoric acid.

F. Perlite: Conforming to National Bureau of Standards PS 23.

G. Vermiculite: Horticultural grade, free of toxic substances.

H. Mulch: Shall be shredded oak tree bark, brown in color, pH of four to five and free of harmful mineral matter a natural moisture content of 15-40%, and coarse texture: one-half inch (1/2") to two inch (2") diameter.

Commercial fertilizer: Shall be a complete formula and shall conform to all requirements of the Pennsylvania Fertilizer Act of 1965. It shall be uniform in composition, dry and free-flowing. and shall be delivered to the site in the original, unopened container with manufacturer's guaranteed analysis. Any fertilizer that becomes caked or otherwise damaged will not be accepted. Commercial fertilizer shall be in pelleted or granular form and shall be of the following rations: 10-20-20, 0-20-20, or approved equal.

Mycor: Mycor™ Tree Saver™ (Mycorrhizal Transplant Inoculant) shall be included with all plantings except ericaceous plants (Rhododendrons, Azaleas and Laurels) at the manufacturer's recommended rates. Mycor treats the root zone with beneficial mycorhizal fungi, water absorbent hyrogels and organic soil conditioners.

2.3 ANTI DESICCANT SPRAY:

A. Anti desiccant spray shall be "Wilt Pruf", as manufactured by Nursery Specialty Products, Greenwich, Connecticut, or approved equal.

2.4 WOODEN GUY STAKES

A. Wooden stakes shall be 2" x 2" x 8' length,

2.5 GUY WIRE

A. Minimum of twelve-gauge, multi-stranded, galvanized steel wire. Wire shall not come in contact with the plant. It shall be covered with rubber hose.

2.6 FILL FOR TREES, SHRUBS, AND PLANT BEDS

A. Backfill shall consist of fifty percent (50%) existing soil, twenty-five percent (25%) new topsoil and twenty-five percent (25%) peat moss as specified with "Mycor" added per manufacturer recommendation based on root ball size. Read manufacturer literature for ericaceous plants that shall not receive Mycor and include a water absorbent hydrogel only with those plants.

2.7 GYPSUM

A. Gypsum shall be as commercially available for planting uses.

2.8 PLANT SELECTION

A. All planting stock shall be available for inspection in the nursery before it is dug. However, final inspection and acceptance will b made at the planting site after installation of the plants in their permanent position.

B. All plants shall be nursery grown in a climate similar to that of the locality of the project true to type and name in accordance with the latest edition of "Standardized Plant Names," American Joint Committee on Horticultural Nomenclature. All plants shall be well-branched, vigorous and balanced root and top growth and No. 1 grade. They shall be free from disease. insects, mechanical wounds, broken branches, decay or any other defect. Each species shall conform to "American Standard of Nursery Stock," as developed by the American Association of Nurserymen, Inc. and approved by the American Standards Association, Inc.

C. Provide freshly dug trees and shrubs. Do not prune prior to delivery. Do not bend or bind—tie trees or shrubs in such a manner as to damage bark, break branches or destroy natural shape. Provide protective covering during delivery.

2.9 HERBICIDE

A. Pre-emergent herbicide shall be Surflan as manufactured by Dow Elanco.

B. Post-emergent herbicide shall be designed for aquatic use with no restrictions on water use, specifically domestic use, after application. Standard of quality shall be Rodeo as manufactured by Monsanto, 800 No. Lindbergh Boulevard, St. Louis, MO 63167, (314) 694-1000.

PART 3 - EXECUTION

3.1 TEMPORARY STORAGE A. All accepted planting stock, if not planted

immediately, shall be heeled—in or stored. Stock left out of the ground unprotected overnight, left with roots exposed to heat or freezing, or otherwise unprotected during transit, unloading, heeling—in, or planting, will be

3.2 SHRUB BED PREPARATION

All shrub masses shown on the Drawings shall be contained within a continuous bed for each mass planting. As such, the bed shall be stripped of turf and the entire bed cultivated by roto-tilling or plowing and discing so that the entire surface is tilled to a min depth of eight inches (8"). 1. Compacted soils shall be scarified and

oosened to promote root growth within medians, tree lawns, and other planting areas. B. Shrub, ground cover and other planting beds in

necessary shall have additional measures of bed

preparation in addition to the measures noted

areas where extensive weed elimination is

above. Additional measures shall be as follows: 1. Prior to disturbing the area of the planting beds, a pre-emergent herbicide shall be applied to all areas per the

manufacturer's instructions. Prior to disturbing the area of the planting beds, a frill or injection method application of a post-emergent herbicide shall be applied to all woody vegetation of a size larger than one inch (1") caliper per manufacturer's instructions. This application shall be made to all woody stumps remaining from previous clearing operation by others. The frill application shall be painted on a fresh cut stump

Prior to disturbing the area of the planting beds, a spray application of a post-emergent herbicide shall be applied to all proposed plant bed area per manufacturer's instructions. Care must be taken so that overspray does not extend beyond the bed areas. Plants to be eliminated must be in an active

growing state. After a seven (7) day waiting period beyond the final post-emergent herbicide application woody plant stumps of a size larger than one inch (1") caliper shall be dug out, including roots, and disposed of off-site.

Any existing vegetation which was not killed by the herbicide applications shall be removed by hand—digging methods and removed off-site. The beds shall be cultivated as specified

3.4 PREPARATION OF PLANT PITS

A. Pits for planting shrubs shall be dug large enough to accommodate the roots and plants without crowding and shall be of correct depth to allow placement of plant at proper depth on subgrade before backfillind

B. The diameter of the plant pit shall be at least twice the diameter of the plant root ball with at least six inches (6") of open excavation between the root ball and the vertical wall of the pit in all directions. Refer to the planting details for further information.

C. Pits for larger plants, such as deciduous shade trees and evergreens, shall be of sufficient depth to allow the placing of root ball on subarade prior to backfilling. Further, the diameter of the plant pit shall be at least twice the diameter of the plant root ball with at least twelve inches (12") of open excavation between the root ball and the vertical wall of the pit in all directions. Refer to planting details for further information.

D. Digging operations, particularly on slopes, shall

operations will follow within twenty—four (24)

VP 87 Viburnum x pragense

be planned in order that actual planting

3.6 TOPSOIL PLACEMENT

3.8 BACKFILLING

A. Planting areas except for the beds with groundcover, bulbs, perennials or seasonal color shall be considered to have sufficient topsoil for the bed preparation. However, topsoil required within each plant pit for the backfill mix shall be furnished and placed by the Contractor.

3.7 PLACING PLANTS A. Plants shall be set no shallower or deeper than they stood in the nursery, with excavation for

pits to correct depth as previously outlined to

set the plants at their proper height. B. Balled and burlapped plants shall be handled by the earth ball and not by the plant itself and shall be placed in the pits without removing the burlap, after which the burlap shall be laid back from the ball. Planting operations shall conform to planting details set forth on appropriate accompanying Drawings.

A. Backfill mix, (2.6 A), shall be mixed in bulk and shall not be mixed in the individual plant pit. The backfill mix shall be worked around the ball and be firmly tamped and/or puddled as backfilling progresses to fill all voids and to eliminate air pockets. Excess excavation from plant pit, sticks, sod, clods or other material that would decompose and form air pockets in the planting media shall be removed. Place backfill in six—inch (6") increments of depth.

B. On level ground and on relatively gentle slopes, a shallow basin, the diameter of the plant pit. shall be let around each plant. On steep slopes, sufficient soil shall be pulled to the lower side of the plant to form a shallow basin to catch and hold water. Excavated materials from plant pits may be used for four inch (4") high berms to create basins around each tree pit or shrub. Shrubs in bed areas shall not have individual saucers of basins.

3.9 FERTILIZATION OF TREES AND SHRUBS

After placing backfill, prior to final watering and before mulching, apply fertilizer to all plants at the following rates. Apply fertilizer evenly over entire plant pit to avoid fertilizer burn.

A. EVERGREEN TREE One-eighth (1/8) pound per foot of height

B. SHADE TREE inch of caliper

C. DECIDUOUS SHRUB One-fourth (1/4) pound per foot of height D. EVERGREEN SHRUB One-eighth (1/8)

pound per foot of height E. FLOWERING TREE One (1) pound per inch of caliper. ORNAMENTAL GRASS One (1) pound

square feet.

PERENNIALS

per 100 square feet G. BULBS Two (2) pounds per 100 sauare feet H. GROUND COVER 20 pounds per 1000

One (1) pound per 100 square feet 3.10 ROOT PRUNING OF NEW PLANT MATERIALS

Only damaged or broken main roots shall be pruned with a clean oblique cut immediately above the point of damage.

3.11 GROUND COVER, BULB AND PERENNIAL

A. Beds shall have vegetation removed as described under 3.3 "Shrub Bed Preparation"

B. Contractor shall spread two inches (2") of new topsoil and one inch (1") of peat moss over entire bed. Plant beds shall be tilled to a minimum depth of eight inches (8") and raked smooth prior to planting.

3.12 GUYING

A. All deciduous and evergreen trees shall be staked and guyed immediately after backfilling as shown on the accompanying Drawings.

3.13 FOLIAGE PRUNING OF NEW PLANT MATERIALS

The tops of all deciduous stock shall be pruned at the time of planting or immediately thereafter to the best horticultural practices with respect to natural form of the individual species. A single terminal leader shall be preserved when pruning deciduous shade trees Unless otherwise directed by the Owner's Representative, all deciduous plants shall have one—third (1/3) of the potential leaf—bearing surface removed.

3.14 WATERING

A. All plants shall be thoroughly watered bi-weekly (at a minimum) in a manner satisfactory to the Owner's representative during the construction period and until final acceptance. All necessary tank trucks, hoses. and appurtenances shall be provided by the Contractor.

REMAIN THE PROPERTY OF

H. EDWARD BLACK AND

ON PROJECT EXTENSIONS

ALTERATIONS OR ADDITION:

ANY OTHER PROJECT OF

TO THIS PROJECT SHALL BE

AT USER'S SOLE RISK AND

H. EDWARD BLACK AND

ASSOCIATES, Ltd.

ASSOCIATES, Ltd. ANY REU

3.15 BARK MULCH APPLICATION

A. All plants shall be mulched with specified mulch to a uniform depth of three inches (3"), placed after planting. Tree pits shall be mulched to the outer edge of the earth berm. Apply mulch within two (2) days after planting, except in the case of winter planting when mulch shall be placed immediately.

B. Remove of all weeds and deleterious materials from the area before mulch is spread.

3.16 PLANT GUARANTEE

A. The Contractor shall guarantee all plants for a period of one (1) year from date of final acceptance. Date of final acceptance is defined as the date of completion and acceptance of all punch list items from the inspection requested by the Contractor after the last of the total planting is installed and mulched, and at which time all conditions are acceptable to the Owner and the Owner's Representative.

B. If a plant dies after final acceptance, it shall be removed and replaced immediately or, in the case of plants requiring proper seasonal planting, replacement in the next appropriate season, even if that season falls beyond the one—year guarantee period.

C. Where a large portion of a plant dies back causing a permanent or long—term deformity, it shall be replaced.

D. Any delay on the part of the Contractor to remove and replace unsatisfactory materials shall cause the Owner to have such work performed and the Contractor shall be backcharged for that work.

E. Plant replacement shall be performed as many times as necessary in a single location; the guarantee does not limit replacement to "one

F. Replacement shall be of exact type, species and size as originally specified.

G. The Contractor shall, in addition to replacement of unsatisfactory plant materials make good all damage to the structures and grounds or equipment and contents thereof if such unsatisfactory condition or damage develops within the stipulated period due to the materials or workmanship which are inferior defective or not in accordance with this Contract, and must make good any work or materials or grounds which are disturbed in fulfilling the requirements of this guarantee.

H. At the end of the one—year guarantee period, the Contractor shall remove all guying materials.

3.17 CLEAN UP

A. During the contract and at intervals as directed by the Owner's Representative and as the Landscape Work is completed, clear the site of all extraneous materials including quantities of subsoil, rock, other spoils remaining from excavation after planting, rubbish or debris, and leave all planting sites in a clean, safe, neat, condition.

3.18 MAINTENANCE

the work.

A. Maintain all planting from time of arrival on site until inspection at time of final acceptance.

B. ALTERNATE — Maintain completely all planting for one (1) year from date of final acceptance. This work shall include but is not limited to watering, weeding, fertilizing, pruning, edging of beds, mulching to maintain 3" level of mulch, and the rescuing and replacement of mulch that has sloughed off beds or tree pits. Also included shall be all requirements for pest and disease control including preventive maintenance. Maintenance shall include the supply of all necessary personnel and equipment to complete

Roundabout Plant List Symbol Quant **Botanical Name** Caliper | Height | Spread | Root | **Notes** Common Name SHRUBS 24 | Ilex glabra 'Shamrock' Shamrock Compact Inkberry 25 Rosa 'Meigalpio Red Drift Rose 15-18" 15-18" Plant List Symbol Quant Caliper | Height | Spread | Root | **Note**s Botanical Name Common Name SHADE TREES Red Sunset' Red Maple BNH 21 Betula nigra 'Heritage' 2-2.5" cal 7-8' 4-5' B/B Heritage River Birch Multi-stem(3)/ Full

DIVIT	21	Betula nigra mentage	mentage raver birch	2-2.5 cal	/-0	4-5	b/b	I∨lulti-stem(3)/ Fu
GBAG	72	Ginko bilboa 'Autumn Gold'	Autumn Gold Ginkgo	2-2.5" cal	8-10'	4-5'	B/B	6' Br./Full heads
NS	40	Nyssa sylvatica	Black Gum	2.5-3" cal	10-12'	4-5'	B/B	6' Branching
PCC	4	Platanus occidentalis	American Sycamore	2.5-3" cal	14-16'	5-6'	B/B	6' Br./Full heads
PSC	119	Prunus sargentii 'Columnaris'	Columnar Sargent Cherry	2-2.5" cal	12-14'		B/B	6' Branching
QR	35	Quercus rubra	Red Oak	2.5-3" cal	10-12'	5-6'	B/B	6' Br./Full heads
QVVL	158	Quercus × warei 'Long' REGAL PRINCE	Regal Prince Oak	2-2.5" cal.	10-12'	4-5'	B&B	6' Branching
								6' Br./Full heads/Uni
ZSGV	34	Zelkova serrata 'Green Vase'	Green Vase Zelkova	2-2.5" cal	12-14'	5-6'	B/B	Branching Patter
EVERGRE	<b>BN</b>							
Ю	35	llex opaca	American Holly	2-2.5'cal	8-10'	4-5'	B/B	
PA	39	Picea abies	Norway Spruce		6-7'	4-5'	B/B	Park Quality
PPG	31	Picea pungens 'Glauca'	Colorado Blue Spruce		6-7'	3-4'	B/B	
POM	42	Picea omorika	Serbian Spruce		7-8'	3-4'	B/B	
XOL	84	X Cupressocyparis leylandii	Leyland Cypress		5-6'	1.5-2	B/B	
FLOWERIN	NG TREES	8		•				
AAB	47	Amelanchier x grandiflora 'Autumn Brilliance	Autumn Brilliance Serviceberry		6-8'	4-5'	B/B	Multi-stem
ALC	59	Amelanchier laevis 'Cumulus'	Cumulus Allegheny Serviceberry		6-8'	4-5'	B/B	Multi-stem
$\infty$	39	Cercis canadensis	Eastern Redbud		6-7'	3-4'	B/B	Multi-stem(3)/ Fu
CK	51	Cornus kousa	Kousa Dogwood	2-2.5'cal	7-8'	4-5'	B/B	Multi-stem(3)/ Fu
SHRUBS	•					•		•
BS	82	Buxus sinica var. insularis 'Wintergreen'	Wintergreen Boxwood		24-30"	24-30"	#5	
CAR	30	Clethra alnifolia 'Ruby Spice'	Ruby Spice Summersweet		24-30"	24-30"	#5	
FG	193	Fothergilla gardenii	Dwarf Fothergilla		18-24"	18-24"	#3	
ICH	18	Ilex crenata 'Hetzii'	Hetzii Holly		18-24"	18-24"	#3	Full
ICS	49	Ilex crenata 'Steeds'	Steeds Upright Holly		30-36"	24-30'	#7	Spiral Form
IVJ	12	llex verticillata 'Jim Dandy'	Jim Dandy Winterberry		24-30"	18-24"	5 gal	
IVN	90	llex verticillata 'Nana' RED SPRITE	Red Sprite Winterberry		24-30'	18-24"	#5	
ITV	48	Itea virginica 'Henry's Garnet'	Garnet Virginia Sweetspire		18-24"	18-24"	#3	Full
JHP	197	Juniperus horizontalis 'Prince of Wales'	Prince of Wales Creeping Juniper		3-6"	18-24"	#3	Full plants
POS	88	Physocarpus opulifolius 'Seward' Summer \	Summer Wine Ninebark		3-4'	4-6'	#3	
RPJM	69	Rhodendron 'PJM'	PJM Azalea		24-30"	18-24"	#5	
RN	112	Rosa x 'Noamel'	Flower Carpet Appleblossom Rose				#3	
SJ	90	Spiraea japonica 'Gold Mound'	Gold Mound Japanese Spirea		18-24"	18-24"	#3	
TBR	185	Taxus baccata 'Repandens'	Spreading English Yew		18-24"	18-24"	B/B	Full, matching plan
VON	100	Vibumum opulus 'Nanum'	European Cranberry Bush		18-24"	18-24"	#3	
		In the second se	I =					

58 OF 68

\_\_\_\_ 1 \_ lants

4-5' 3-4' B/B Full, matching plants

| & | & |

The Owner shall be responsible for landscape maintenance, including care, grooming and replacement of plants. Lawn — Lawn areas shall be maintained at a grass height in conformance with municipal code.

Shrubs — Shrubs shall be pruned to remove dead and damaged branches back to point of branching a.Evergreen Trees — Corrective pruning only shall be done to maintain the natural shape and characteristics of the variety. Central leaders shall be maintained. Remove all dead and damaged branches back to the point of branching. All limb removals shall be made flush to the trunk or limb from which they originate. b.Deciduous Trees — Sanitation pruning only shall be done to remove dead or diseased parts of trees. All limb removals shall be made flush to the trunk or limb from which they originate. Remove all dead and damaged branches back to the point of branching. The central leader shall be maintained in those varieties normally having them. 4. Plant Replacement

c. Required plants shall be replaced if dead or if a large portion of the plant dies back causing a permanent or long—term deformity. Replacement shall be of the same type, species and size as originally specified, or a substitution of equivalent ultimate size and type.

<u>Detention Basin Turf</u> ERNMX—126 by Ernst Seeds (www.ernstseed.com), or A. Submit tag with content, purity and germination rate to Seeding Rate: 20-40 lb per acre, or 1 lb per 1,000 SF Mix Type Storm Water Management Facility Sites Species List C. Rake seed lightly into top 1/8 inch of soil, roll lightly and 20% Virginia Wildrye, PA Ecotype (Elymus virginicus, PA Ecotype) D. Protect seeded areas with slopes 3:1 or steeper with 20% Alkaligrass, 'Fults' (Puccinellia distans, 'Fults') flexible growth medium per manufacturer's recommendations. ■ 17% Deertongue, 'Tioga' (Panicum clandestinum E. Mulch large seeded areas with 1-1/2 to 2" of straw (Dichanthelium c.), 'Tioga')

> 17% Fox Sedge, PA Ecotype (Carex vulpinoidea, PA Ecotype) • 14% Creeping Bentgrass (Agrostis stolonifera) 4% Ticklegrass (Rough Bentgrass), PA Ecotype

(Agrostis scabra, PA Ecotype) 4% Autumn Bentgrass, PA Ecotype (Agrostis perennans, PA Ecotype)

 3% Soft Rush (Juncus effusus) • 1% Path Rush, PA Ecotype (Juncus tenuis, PA

<u>Low Maintenance Turf</u> — Plant on all slopes steeper Seed Mixture and Nurse Crop: Low Maintenance Mixture by Seedway

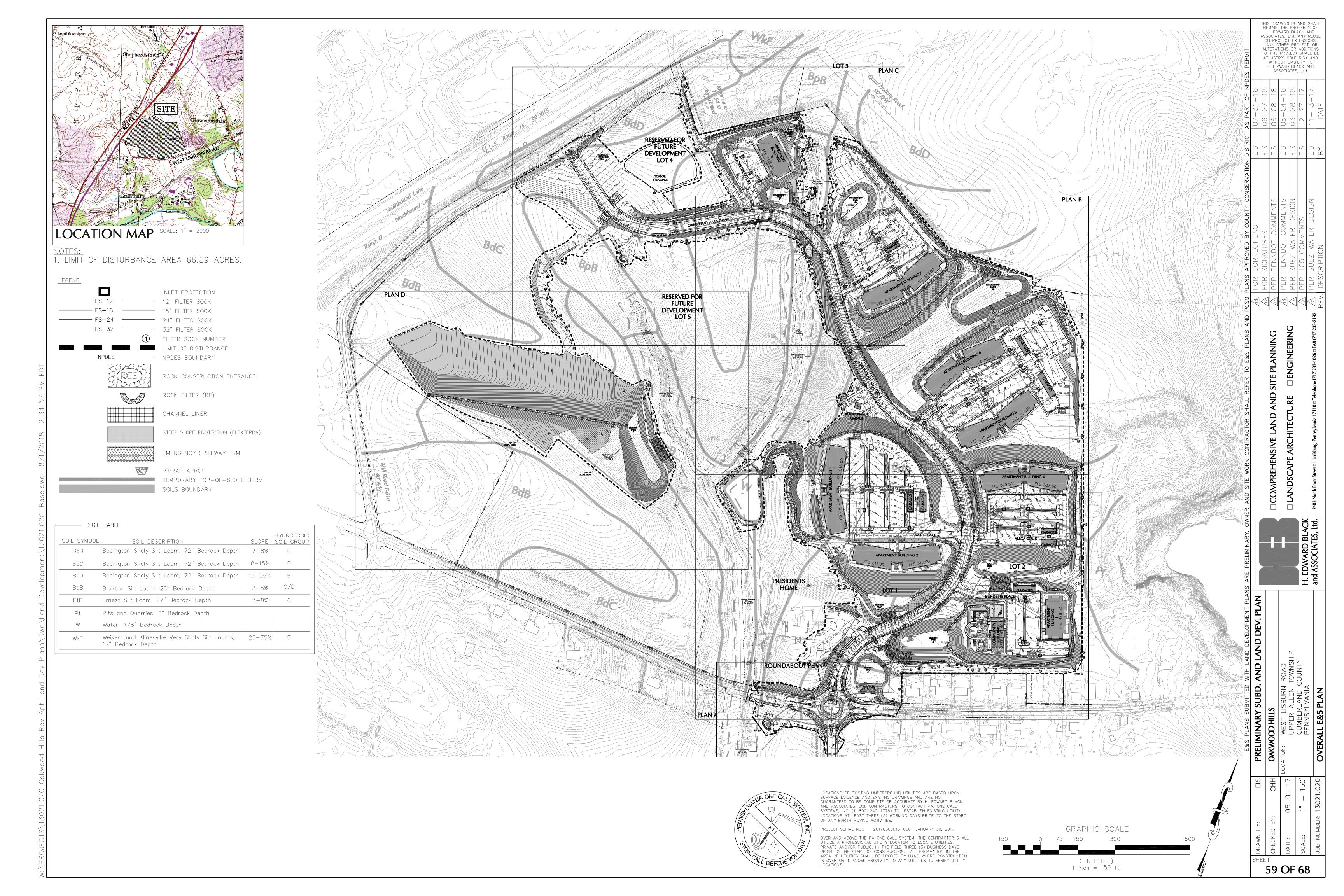
40% Proprietary Hard Fescue 30% Proprietary Sheep Fescue 30% Proprietary Chewings Fescue Nurse crop: Annual Ryegrass @ 8 lbs. Per

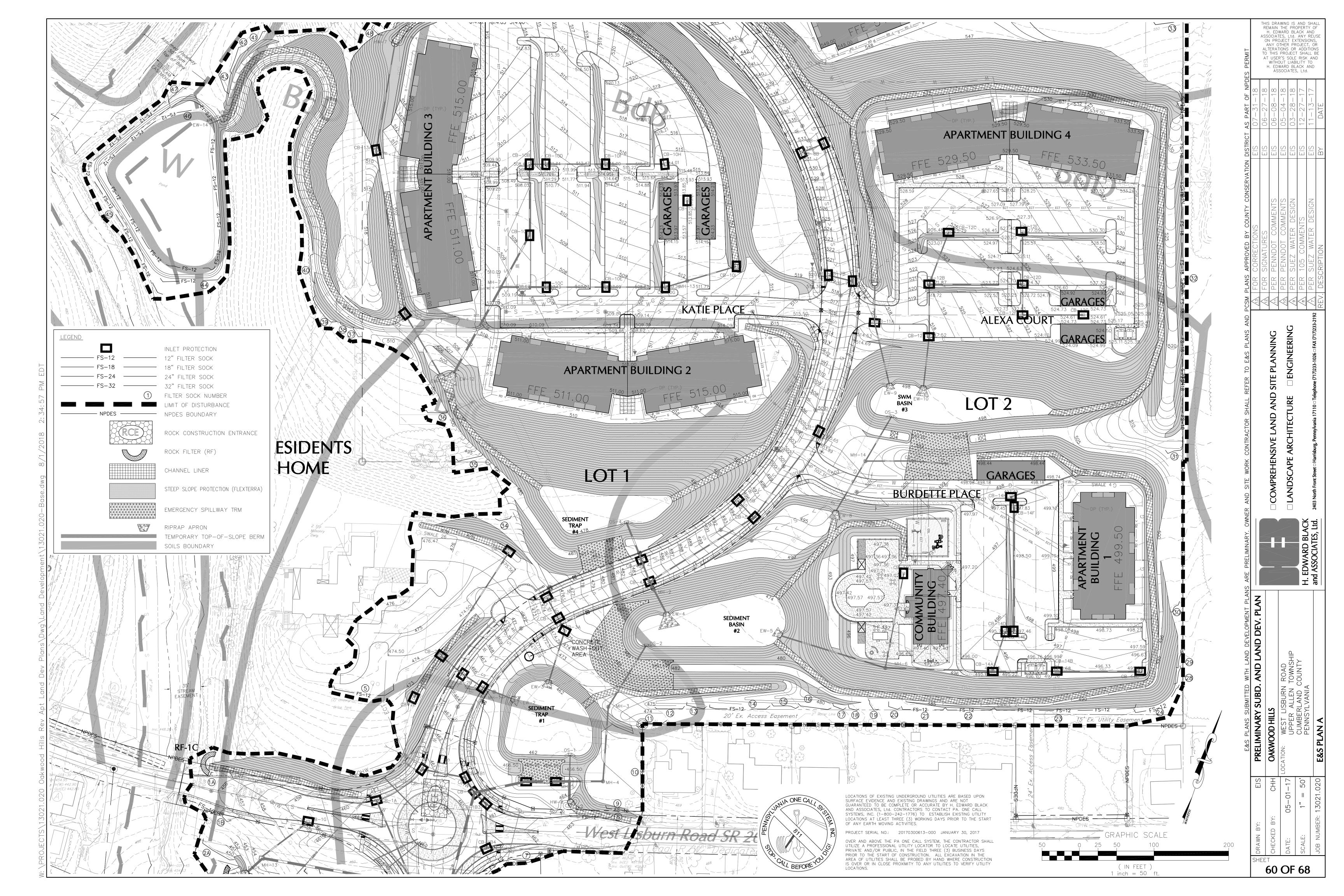
2. There are no bare spots larger than one (1') foot by (www.seedway.com), or approved equal at 8

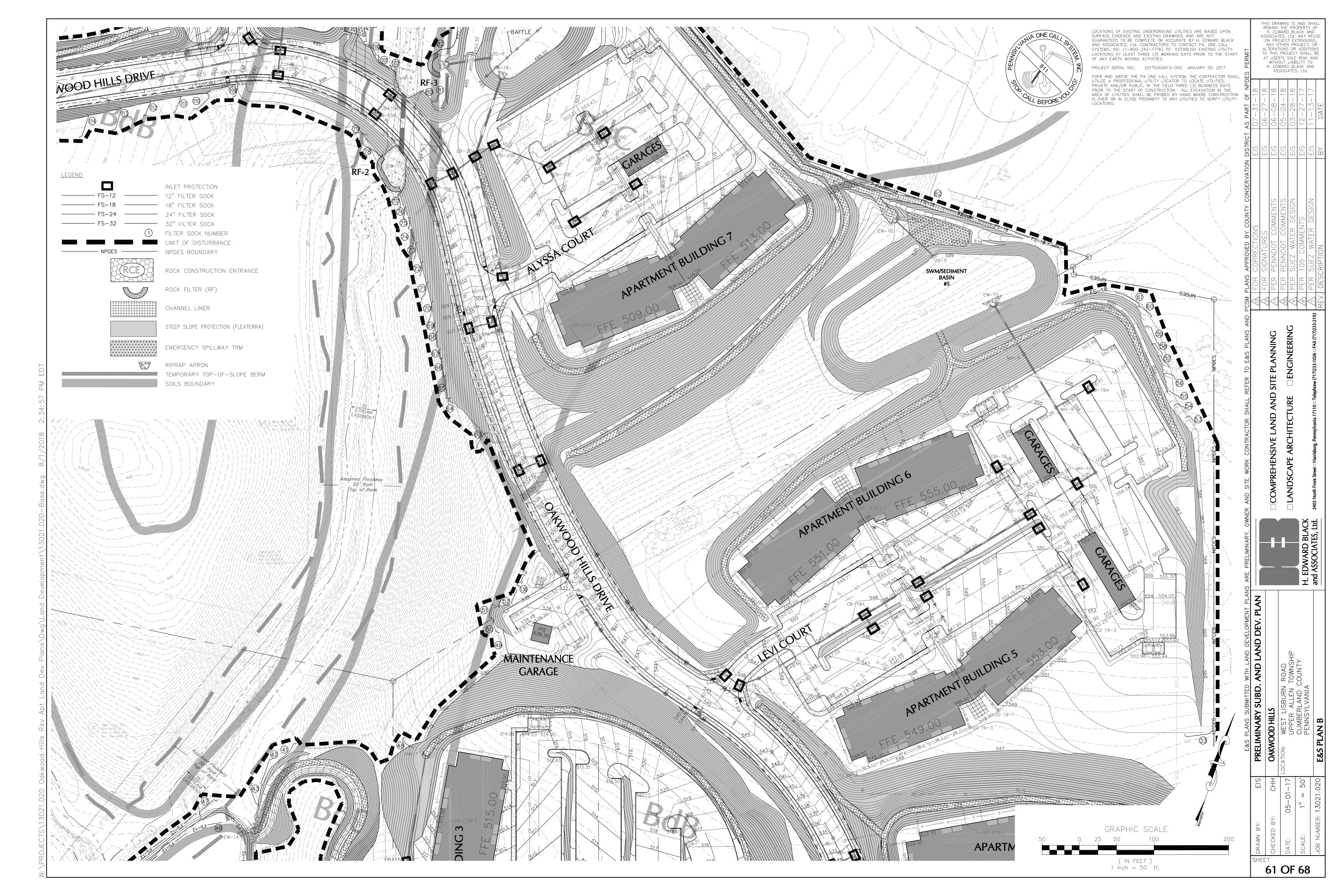
lbs. per 1,000 SF:

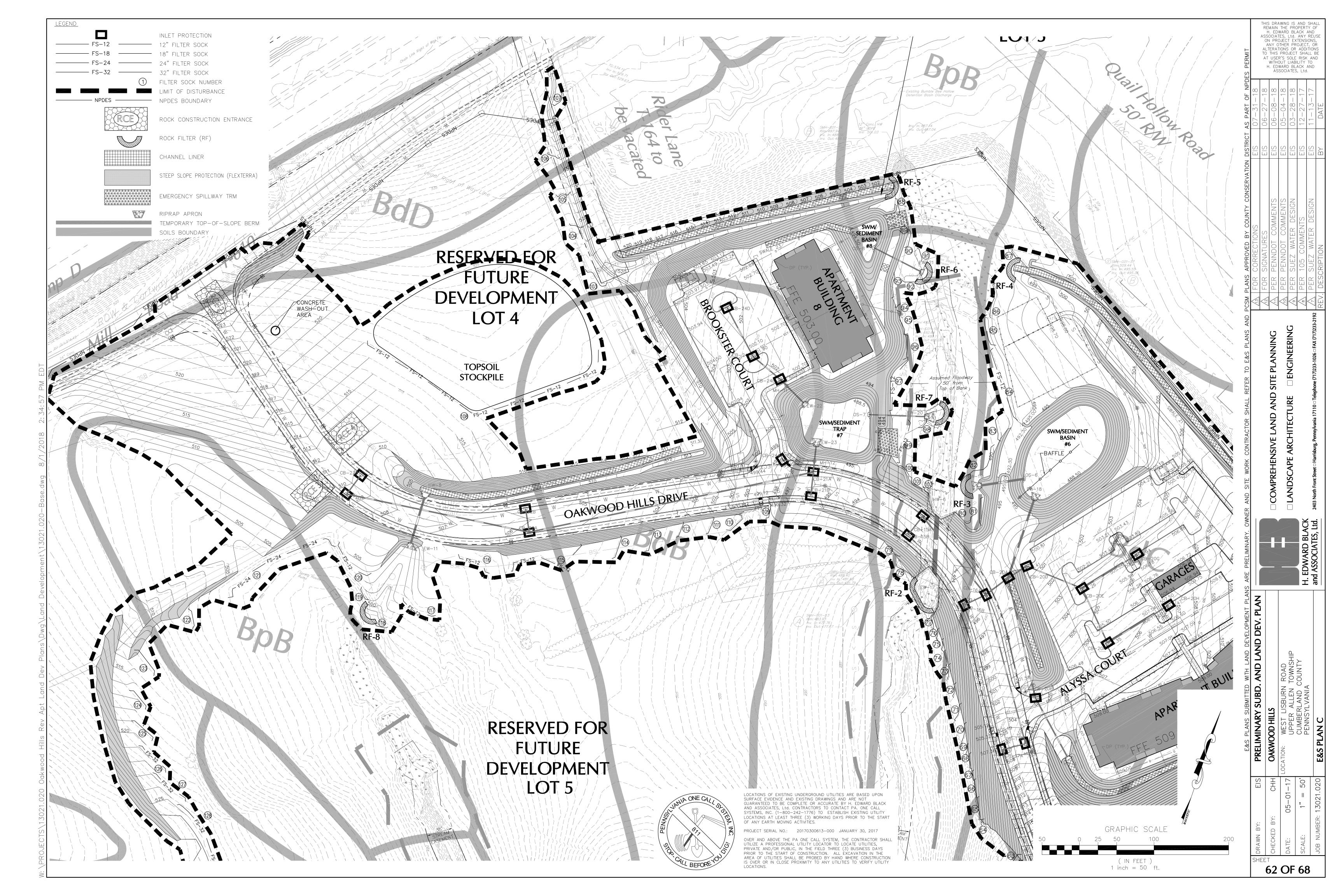
3. The seeded areas have been moved two (2) times

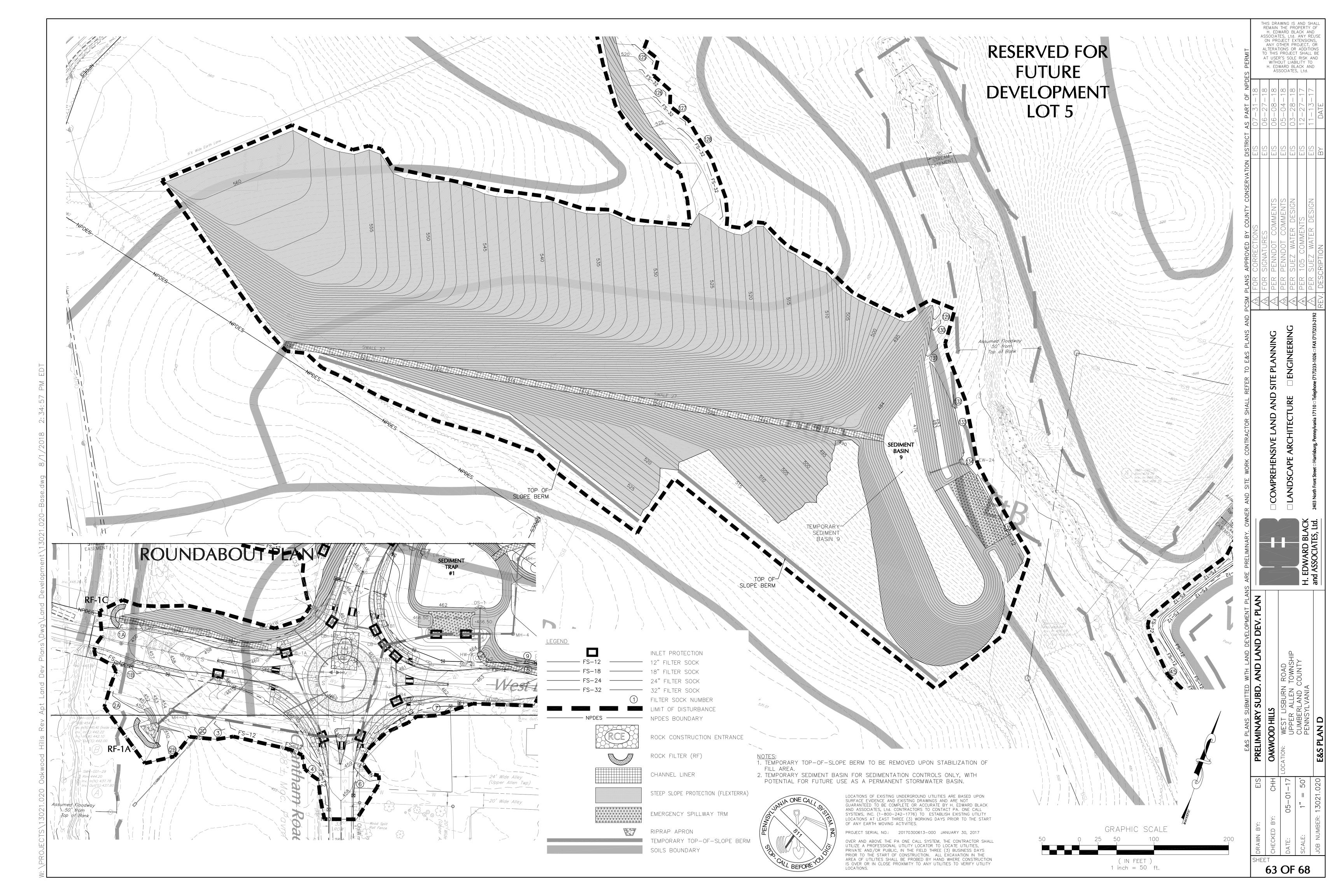
C. Loosen areas that have not aerminated and reseed











5. Areas to be filled are to be cleared, grubbed, and stripped of topsoil to remove trees, vegetation, roots and other objectionable material. 6. Clearing, grubbing, and topsoil stripping shall be limited to those areas described in each stage of the construction sequence. General site clearing, grubbing and topsoil stripping may not commence in any stage or phase of the project until the E&S BMPs specified by the BMP sequence for that stage or phase have been installed and are functioning as described in this E&S

4. All earth disturbance activities shall proceed in accordance with the sequence provided on the plan drawings. Deviation from

that sequence must be approved in writing from the local conservation district or by the Department prior to implementation.

7. At no time shall construction vehicles be allowed to enter areas outside the limit of disturbance boundaries shown on the plan maps. These areas must be clearly marked and fenced off before clearing and grubbing operations begin. 8. Topsoil required for the establishment of vegetation shall be stockpiled at the location(s) shown on the plan maps(s) in the amount necessary to complete the finish grading of all exposed areas that are to be stabilized by vegetation. Each stockpile shall be protected in the manner shown on the plan drawings. Stockpile heights shall not exceed 35 feet. Stockpile slopes shall be 2H:1V or flatter.

. Immediately upon discovering unforeseen circumstances posing the potential for accelerated erosion and/or sediment pollution the operator shall implement appropriate best management practices to minimize the potential for erosion and sediment pollution and notify the local conservation district and/or the regional office of the Department.

10. 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 the site. 11. All off—site waste and borrow areas must have an E&S plan approved by the local conservation district or the Department fully implemented prior to being activated.

12. The contractor is responsible for ensuring that any material brought on site is clean fill. Form FP-001 must be retained by the property owner for any fill material affected by a spill or release of a regulated substance but qualifying as clean fill due to analytical testina. 13. All pumping of water from any work area shall be done according to the procedure described in this plan, over undisturbed vegetated areas.

14. Vehicles and equipment may neither enter directly nor exit directly from existing driveways onto West Lisburn and Mill Road. 15. Until the site is stabilized, all erosion and sediment BMPs shall be maintained properly. Maintenance shall include inspections of all erosion and sediment BMPs after each runoff event and on a weekly basis. All preventative and remedial maintenance work, including clean out, repair, replacement, regrading, reseeding, remulching and renetting must be performed immediately. If the E&S BMPs fail to perform as expected, replacement BMPs, or modifications of those installed will be required. 16. A log showing dates that E&S BMPs were inspected as well as any deficiencies found and the date they were corrected shall be maintained on the site and be made available to regulatory agency officials at the time of inspection.

17. Sediment tracked onto any public roadway or sidewalk shall be returned to the construction site by the end of each work day and disposed in the manner described in this plan. In no case shall the sediment be washed, shoveled, or swept into any roadside ditch, storm sewer, or surface water.

18. All sediment removed from BMPs shall be disposed of in the manner described on the plan drawings 19. Areas which are to be topsoiled shall be scarified to a minimum depth of 3 to 5 inches — 6 to 12 inches on compacted soils —— prior to placement of topsoil. Areas to be vegetated shall have a minimum 6 inches of topsoil in place prior to seeding and mulching. Fill outslopes shall have a minimum of 4 inches of topsoil. 20. All fills shall be compacted as required to reduce erosion, slippage, settlement, subsidence or other related problems. Fill

intended to support buildings, structures and conduits, etc. shall be compacted in accordance with local requirements or codes. 21. All earthen fills shall be placed in compacted layers not to exceed 9 inches in thickness. 22. Fill materials shall be free of frozen particles, brush, roots, sod, or other foreign or objectionable materials that would interfere with or prevent construction of satisfactory fills.

s. Frozen materials or soft, mucky, or highly compressible materials shall not be incorporated into fills. 24. Fill shall not be placed on saturated or frozen surfaces. 25. Seeps or springs encountered during construction shall be handled in accordance with the standard and specification for

subsurface drain or other approved method. 26. All graded areas shall be permanently stabilized immediately upon reaching finished grade. Cut slopes in competent bedrock and rock fills need not be vegetated. Seeded areas within 50 feet of a surface water, or as otherwise shown on the plan drawings, shall be blanketed according to the standards of this plan. 27. Immediately after earth disturbance activities cease in any area or subarea of the project, the operator shall stabilize all disturbed areas. During non—germinating months, mulch or protective blanketing shall be applied as described in the plan. Areas not at finished grade, which will be reactivated within 1 year, may be stabilized in accordance with the temporary

stabilization specifications. Those areas which will not be reactivated within 1 year shall be stabilized in accordance with the 28. Permanent stabilization is defined as a minimum uniform, perennial 70% vegetative cover or other permanent non—vegetative cover with a density sufficient to resist accelerated erosion. Cut and fill slopes shall be capable of resisting failure due to slumping, sliding, or other movements. 29. E&S BMPs shall remain functional as such until all areas tributary to them are permanently stabilized or until they are

replaced by another BMP approved by the local conservation district or the Department. 30. Upon completion of all earth disturbance activities and permanent stabilization of all disturbed areas, the owner and/or operator shall contact the local conservation district for an inspection prior to removal/conversion of the E&S BMPs. . After final site stabilization has been achieved, temporary erosion and sediment BMPs must be removed or converted to permanent post construction stormwater management BMPs. Areas disturbed during removal or conversion of the BMPs shall be stabilized immediately. In order to ensure rapid revegetation of disturbed areas, such removal/conversions are to be done only during the germinating season. 32. Upon completion of all earth disturbance activities and permanent stabilization of all disturbed areas, the owner and/or

operator shall contact the local conservation district to schedule a final inspection. 33. Failure to correctly install E&S BMPs, failure to prevent sediment—laden runoff from leaving the construction site, or failure to take immediate corrective action to resolve failure of E&S BMPs may result in administrative, civil, and/or criminal penalties being instituted by the Department as defined in Section 602 of the Pennsylvania Clean Streams Law. The Clean Streams Law provides for up to \$10,000 per day in civil penalties, up to \$10,000 in summary criminal penalties, and up to \$25,000 in misdemeanor criminal penalties for each violation. 34. Concrete wash water shall be handled in the manner described on the plan drawings. In no case shall it be allowed to enter

35. All channels shall be kept free of obstructions including but not limited to fill, rocks, leaves, woody debris, accumulated sediment, excess vegetation, and construction material/wastes. 36. Underground utilities cutting through any active channel shall be immediately back filled and the channel restored to its original cross—section and protective lining. Any base flow within the channel shall be conveyed past the work area such

estoration is complete. 37. Sediment basins and/or traps shall be kept free of all construction waste, wash water, and other debris having potential to cloa the basin/trap outlet structures and/or pollute the surface waters. Sediment basins shall be protected from unauthorized acts by third parties ). Any damage that occurs in whole or in part as a result of basin or trap discharge shall be immediatel

permittee in a permanent manner satisfactory to the municipality, local conservation district, and the owner of the damaged D. Upon request, the applicant or his contractor shall provide an as—built (record drawing) for any sediment basin or trap to the municipal inspector, local conservation district or the Department 41. Erosion control blanketing shall be installed on all slopes 3H:1V or steeper within 50 feet of a surface water and on all other disturbed areas specified on the plan maps and/or detail sheets

42. Fill material for embankments shall be free of roots, or other woody vegetation, organic material, large stones, and other objectionable materials. The embankment shall be compacted in maximum 6 inch layered lifts at 95% standard proctor

CONSTRUCTION IS ANTICIPATED TO BEGIN PHASE 1A SPRING 2018 AND FINAL STABILIZATION IS EXPECTED TO BE ACCOMPLISHED BY FALL 2019. START OF CONSTRUCTION

THE CONTRACTOR WILL SUBMIT WRITTEN NOTIFICATION TO CUMBERLAND COUNTY CONSERVATION DISTRICT AT LEAST SEVEN (7) DAYS PRIOR TO THE FIELD MARK LIMITS OF DISTURBANC INSTALL ROCK CONSTRUCTION ENTRANCE RCE-1 THROUGH RCE-4

CLEAR AND GRUB AREAS OF ALL SEDIMENT TRAPS & SEDIMENT BASINS: STRIP AND STOCKPILE TOPSOIL, SEED AND MULCH TOPSOIL STOCKPILE \*\*INSTALL SEDIMENT TRAP 1 INCLUDING PIPED OUTLET TO EW-1 WITH ROCK FILTER (TEMPORARY CONNECT EXISTING LISBURN & GRANTHAM ROAD STORM SEWER TO NEW BASIN OUTLET/ROUNDABOUT STORM SEWER PIPE) AND INSTALL SEDIMENT TRAPS 7 & 8 WITH OUTLET STRUCTURE AND ROCK FILTER, IMMEDIATELY STABILIZE BASIN EMBANKMENT AND INSTALL OUTLET PROTECTION. UTILIZE LIGHT WEIGHT TRACK EQUIPMENT ONLY. \*\*INSTALL SEDIMENT BASINS 2, 3, 4, 5, 6 & 9, INCLUDING ALL APPURTENANCES AND INCLUDING BAFFLE IN BASIN 6. IMMEDIATELY STABILIZE BASIN EMBANKMENTS AND INSTALL OUTLET PROTECTION. UTILIZE LIGHT WEIGHT TRACK EQUIPMENT ONLY. \*\*REMOVE AN ADDITIONAL 2 FOOT DEPTH IN SEDIMENT TRAPS & SEDIMENT BASINS AS SHOWN IN DETAILS ON DRAWINGS. UTILIZE LIGHT WEIGHT TRACK

INSTALL HAULROAD F&S CONTROLS: CONSTRUCT HAULROAD, REMOVE & STOCKPILE TOPSOL PREPARE VALLEY FILL AREA; CLEAR AND GRUB AREA, INSTALL DIVERSION BERM, REMOVE & STOCKPILE TOPSOIL, SEED AND MULCH TOPSOIL STOCKPILE. CLEAR AND GRUB SITE; STRIP AND STOCKPILE TOPSOIL, SEED AND MULCH TOPSOIL. BEGIN MASS GRADING; ROUGH GRADE TOTAL SITE AS SHOWN ON THE DRAWINGS. HAUL EXCESS SOILS TO VALLEY FILL AREA AND PLACE IN LIFTS. INSTALL SWALES: INSTALL SWALE LINERS, TOPSOIL, SEED AND MULCH

FINAL GRADE OAKWOOD HILLS DRIVE, ACCESS DRIVES, SIDEWALKS AND PARKING LOTS.
INSTALL SANITARY SEWERS EXCEPT FOR CONNECTION TO LISBURN ROAD MANHOLE. INSTALL STORM SEWER IN STREET. START AT DOWNSTREAM ENDS. IMMEDIATELY INSTALL INLET PROTECTION. INSTALL PAVEMENT BASE DRAINS. INSTALL UTILITIES EXCEPT FOR LISBURN ROAD PUBLIC WATER CONNECTION.

0. INSTALL CURBS.
1. REMOVE RCE-1 & RCE-2, INSTALL STONE SUBBASE IN OAKWOOD HILLS DRIVE AND PHASE 1A ACCESS DRIVES, PARKING AREAS, SIDEWALKS AND 22. INSPECT PREVIOUS INSTALLED PERIMETER SILT SOCK AT ROUNDABOUT CONSTRUCTION AREA, REGRADE ROUNDABOUT INTERSECTION, GRADE ROADWAY SWALES & INSTALL SWALE LINERS & ROCK FILTERS, INSTALL SANITARY SEWER REPLACEMENT IN LISBURN ROAD, PUBLIC WATER MAIN CONNECTION, INSTALL REMAINING STORM SEWER & BASE DRAINS, IMMEDIATELY STABILIZE WITH STONE SUBGRADE, PLACE BASE PAVEMENT AND WEARING COURSE 3. FINAL GRADE VALLEY FILL SITE, SCARIFY SUBSOIL 6" PRIOR TO TOPSOIL PLACEMENT AND IMMEDIATELY STABILIZE ANY DISTURBED AREA WITH SIX (6)

INCHES OF TOPSOIL, SEED AND MULCH, AND STABILIZE HAULROAD (MAY BE USED AGAIN IN PHASE 1B & 1C CONSTRUCTION).
FINAL GRADE SITE, SCARIFY SUBSOIL 6" PRIOR TO TOPSOIL PLACEMENT, IMMEDIATELY STABILIZED STEEP SLOPE AREAS AND IMMEDIATELY STABILIZE ANY DISTURBED AREA WITH SIX (6) INCHES OF TOPSOIL, SEED AND MULCH. BEGIN BUILDING CONSTRUCTION. PLACE BASE PAVEMENT

27. COMPLETE THE WEARING COURSE PAVING ON PARKING LOTS AND ACCESS DRIVES.
28. MEET WITH CUMBERLAND COUNTY CONSERVATION DISTRICT TO EVALUATE THE PERMANENT STABILIZATION OF THE SITE. CUMBERLAND COUNTY CONSERVATION DISTRICT SHALL APPROVE THE STABILIZATION OF THE SITE.
29. PERMANENTLY STABILIZE ANY AREAS DISTURBED BY CORRECTIONS OF THAT HAVE NOT BECOME STABILIZED. . MEET WITH CUMBERLAND COUNTY CONSERVATION DISTRICT FOR FINAL SITE INSPECTION.

AFTER APPROVAL OF STABILIZATION, REMOVE TEMPORARY DIVERSION BERM AND GRADE THAT AREA, SEED AND MULCH.

2. \*\*CONVERT SEDIMENT BASIN 4 & SEDIMENT TRAP 1 TO DETENTION/INFILTRATION BASIN. UTILIZE LIGHT WEIGHT TRACK EQUIPMENT ONLY, REMOVE ALI

SEDIMENT AND SEDIMENT CONTROL DEVISES, SCARIFY BASIN BOTTOM 12" DEEP (WHEN SOIL IS MOIST), SPREAD TOPSOIL (BASIN BOTTOM TO RECEIVE 2' OF TOPSOIL), SEED AND MULCH. 33. \*\*INSTALL SNOUT IN CATCH BASINS/MANHOLES TO BASINS 1 & 4 AS SHOWN ON THE PLANS.
34. AFTER APPROVAL OF THE REMAINING STABILIZATION, REMOVE REMAINING TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES WHICH CONSISTS OF ALL INLET PROTECTION EXCEPT FOR INLET PROTECTION ON OAKWOOD HILLS DRIVE NORTH OF BURDETTE PLACE, REMOVE ALL ROCK FILTERS, REMOVE FILTER SILT SOCKS 1-32, 34-52, 63-79, 103-107, 109-120 & 136.

\*\* DENOTES CRITICAL STAGE OF CONSTRUCTION THAT MUST BE OBSERVED AND INSPECTED BY A LICENSED PROFESSIONAL (OR DESIGNEE). CONSTRUCTION IS ANTICIPATED TO BEGIN PHASE 1B SPRING 2023 AND FINAL STABILIZATION IS EXPECTED TO BE ACCOMPLISHED BY FALL 2024

THE CONTRACTOR WILL SUBMIT WRITTEN NOTIFICATION TO CUMBERLAND COUNTY CONSERVATION DISTRICT AT LEAST SEVEN (7) DAYS PRIOR TO THE FIELD MARK LIMITS OF DISTURBANCE.
INSTALL ROCK CONSTRUCTION ENTRANCE RCE-5 & RCE-6 AND CHECK EXISTING RCE-3 & RCE-4 AND PROVIDE REPAIRS AS NECESSARY. INSTALL PHASE 1B PERIMETER SILT SOCK.

CHECK CONDITION OF ALL EXISTING SEDIMENT TRAPS, AND ALL SEDIMENT BASINS; REMOVE ANY SEDIMENT AND PROVIDE REPAIRS AS NECESSARY.

CHECK CONDITION OF ALL EXISTING PERIMETER EROSION AND SEDIMENT CONTROLS AND PROVIDE REPAIRS OR REPLACEMENT AS NECESSARY. RE-OPEN HAULROAD IF REQUIRED, INSPECT E&S CONTROLS AND REPLACE IF NECESSARY. PREPARE VALLEY FILL AREA FOR CONTINUED FILLING OPERATIONS, IF NECESSARY. ROUGH GRADE PHASE 1B AREAS.

GRADE IN EXCESS SOIL IN VALLEY FILL AREA AS SHOWN ON PLANS, IF NECESSARY. CONSTRUCT SWALES. INSTALL SWALE LINER, TOPSOIL, SEED AND MULCH FINAL GRADE BUILDING PADS, ACCESS DRIVES, SIDEWALKS AND PARKING LOTS. INSTALL SANITARY SEWERS.

35. PERMANENTLY STABILIZE ALL AREAS DISTURBED BY REMOVAL OF THE EROSION CONTROL MEASURES

14. INSTALL STORM SEWER, START AT DOWNSTREAM ENDS. IMMEDIATELY INSTALL INLET PROTECTION. 15. INSTALL UTILITIES. 17. REMOVE RCE-5 & RCE-6, INSTALL STONE SUBBASE IN ACCESS DRIVES, PARKING AREAS, SIDEWALKS AND BUILDING SLAB AREAS.

18. FINAL GRADE SITE, SCARIFY SUBSOIL 6" PRIOR TO TOPSOIL PLACEMENT, IMMEDIATELY STABILIZED STEEP SLOPE AREAS AND IMMEDIATELY STABILIZE ANY DISTURBED AREA WITH SIX (6) INCHES OF TOPSOIL, SEED AND MULCH. BEGIN BUILDING CONSTRUCTION.

ON PLACE BASE PAVEMENT THEN WEARING COURSE ON ACCESS DRIVES AND PARKING LOTS.

MEET WITH CUMBERLAND COUNTY CONSERVATION DISTRICT TO EVALUATE THE PERMANENT STABILIZATION OF THE SITE. CUMBERLAND COUNTY CONSERVATION DISTRICT SHALL APPROVE THE STABILIZATION OF THE SITE.

PERMANENTLY STABILIZE ANY AREAS DISTURBED BY CORRECTIONS OF THAT HAVE NOT BECOME STABILIZED. 23. COMPLETE THE WEARING COURSE PAVING ON OAKWOOD HILLS DRIVE UP TO THE AREA OF PHASE 1C CONSTRUCTION AND ON ALL COMPLETED PARKING

24. MEET WITH CUMBERLAND COUNTY CONSERVATION DISTRICT FOR FINAL SITE INSPECTION. \*\*CONVERT SEDIMENT BASIN 2, 3 & 5 TO DETENTION/INFILTRATION BASINS. UTILIZE LIGHT WEIGHT TRACK EQUIPMENT ONLY, REMOVE ALL SEDIMENT AND SEDIMENT CONTROL DEVISES, SCARIFY BASIN BOTTOM 12" DEEP (WHEN SOIL IS MOIST), SPREAD TOPSOIL (BASIN BOTTOM TO RECEIVE 2' OF TOPSOIL), SEED AND MULCH. \*\*INSTALL SNOUTS IN CATCH BASINS/MANHOLES AS SHOWN ON THE PLANS FOR BASINS 2, 3 & 5.

27. AFTER APPROVAL OF THE REMAINING STABILIZATION, REMOVE REMAINING TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES. WHICH CONSISTS OF ALL INLET PROTECTION EXCEPT FOR INLET PROTECTION ON OAKWOOD HILLS DRIVE NORTH OF LEVI COURT, REMOVE FILTER SILT SOCKS 33 AND 53-61.
28. PERMANENTLY STABILIZE ALL AREAS DISTURBED BY REMOVAL OF THE EROSION CONTROL MEASURES. \*\* DENOTES CRITICAL STAGE OF CONSTRUCTION THAT MUST BE OBSERVED AND INSPECTED BY A LICENSED PROFESSIONAL (OR DESIGNEE).

CONSTRUCTION IS ANTICIPATED TO BEGIN PHASE 1C SPRING 2028 AND FINAL STABILIZATION IS EXPECTED TO BE ACCOMPLISHED BY SPRING 2029.

1. THE CONTRACTOR WILL SUBMIT WRITTEN NOTIFICATION TO CUMBERLAND COUNTY CONSERVATION DISTRICT AT LEAST SEVEN (7) DAYS PRIOR TO THE START OF

INSTALL ROCK CONSTRUCTION ENTRANCE RCE-7, RCE-8 AND CHECK EXISTING RCE-3 & RCE-4 AND PROVIDE REPAIRS AS NECESSARY. INSTALL PHASE 1C PERIMETER SILT SOCK CHECK CONDITION OF EXISTING SEDIMENT TRAPS 7 & 8 AND SEDIMENT BASINS 6 & 9, REMOVE ANY SEDIMENT AND PROVIDE REPAIRS AS NECESSARY, INCLUDING

BAFFLE IN BASIN 6.
CHECK CONDITION OF ALL PERIMETER EROSION AND SEDIMENT CONTROLS AND PROVIDE REPAIRS OR REPLACEMENT AS NECESSARY.

RE—OPEN HAULROAD IF REQUIRED, INSPECT E&S CONTROLS AND REPLACE IF NECESSARY. PREPARE VALLEY FILL AREA FOR CONTINUED FILLING OPERATIONS, IF NECESSARY. ROUGH GRADE PHASE 1C AREAS. GRADE IN EXCESS SOIL IN VALLEY FILL AREA AS SHOWN ON PLANS, IF NECESSARY.

CONSTRUCT SWALES. INSTALL SWALE LINER, TOPSOIL, SEED AND MULCH FINAL GRADE ACCESS DRIVES, SIDEWALKS AND PARKING LOTS. INSTALL SANITARY SEWERS. INSTALL STORM SEWERS. START AT DOWNSTREAM ENDS. IMMEDIATELY INSTALL INLET PROTECTION.

17. REMOVE RCE-7 & RCE-8, INSTALL STONE SUBBASE IN ACCESS DRIVES, PARKING AREAS, SIDEWALKS AND BUILDING SLAB AREAS.
18. FINAL GRADE SITE, SCARIFY SUBSOIL 6" PRIOR TO TOPSOIL PLACEMENT, IMMEDIATELY STABILIZED STEEP SLOPE AREAS AND IMMEDIATELY STABILIZE ANY DISTURBED AREA WITH SIX (6) INCHES OF TOPSOIL, SEED AND MULCH.

19. FINAL GRADE VALLEY FILL SITE, SCARIFY SUBSOIL 6" PRIOR TO TOPSOIL PLACEMENT AND IMMEDIATELY STABILIZE ANY DISTURBED AREA WITH SIX (6) INCHES OF TOPSOIL, SEED AND MULCH, AND REMOVE RCE-4 & STABILIZE HAULROAD.

. MEET WITH CUMBERLAND COUNTY CONSERVATION DISTRICT TO EVALUATE THE PERMANENT STABILIZATION OF THE SITE. CUMBERLAND COUNTY CONSERVATION DISTRICT SHALL APPROVE THE STABILIZATION OF THE SITE.

PERMANENTLY STABILIZE ANY AREAS DISTURBED BY CORRECTIONS OF THAT HAVE NOT BECOME STABILIZED. . COMPLETE THE WEARING COURSE PAVING ON OAKWOOD HILLS DRIVE AND ON ALL COMPLETED PARKING LOTS AND ACCESS DRIVES . MEET WITH CUMBERLAND COUNTY CONSERVATION DISTRICT FOR FINAL SITE INSPECTION.

\*\*CONVERT SEDIMENT BASIN 6 AND SEDIMENT TRAPS 7 & 8 TO DETENTION/INFILTRATION BASINS REMOVE BAFFLE FROM BASIN 6. UTILIZE LIGHT WEIGHT TRACK EQUIPMENT ONLY, REMOVE ALL SEDIMENT AND SEDIMENT CONTROL DEVISES, SCARIFY BASIN BOTTOM 12" DEEP (WHEN SOIL IS MOIST), SPREAD TOPSOIL (BASIN BOTTOM 2. TO RECEIVE 2' OF TOPSOIL), SEED AND MULCH.

27. \*\*INSTALL SNOUTS IN CATCH BASINS/MANHOLES AS SHOWN ON THE PLANS.
28. AFTER APPROVAL OF THE REMAINING STABILIZATION, REMOVE REMAINING TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES WHICH CONSISTS OF ALL REMAINING INLET PROTECTION, REMOVE ALL REMAINING FILTER SILT SOCKS AND REMOVE RCE-4. 29. PERMANENTLY STABILIZE ALL AREAS DISTURBED BY REMOVAL OF THE EROSION CONTROL MEASURES.

\*\* PRIOR TO CONSTRUCTING THE CRITICAL STAGES OF CONSTRUCTION THAT REQUIRE OBSERVATION AND INSPECTION BY A LICENSED PROFESSIONAL OR DESIGNEE, THE CONTRACTOR SHALL SUPPLY A 3-DAY NOTIFICATION TO THE DESIGN ENGINEER OR A LICENSED PROFESSIONAL THAT WILL CERTIFY THE NPDES PERMIT NOTICE OF TERMINATION AND AS-BUILT DRAWNGS. THE CRITICAL STAGES OF CONSTRUCTION SHALL INCLUDE BUT NOT LIMITED TO THE FOLLOWING:

 BASIN BOTTOM GRADING OF STORMWATER/SEDIMENT BASINS AND TRAPS. CONSTRUCTION OF STORMWATER/SEDIMENT BASINS & TRAPS EMBANKMENTS AND APPURTENANCES INCLUDING EMBANKMENT SUBGRADE, KEYWAY EXCAVATION, CLAY CORE AND EMERGENCY SPILLWAY. CONSTRUCTION OF STORMWATER/SEDIMENT BASINS & TRAPS OUTLET STRUCTURES AND APPURTENANCES INCLUDING ANTI-SEEP COLLARS, CONCRETE CRADLE, OUTLET PIPE, OUTLET PROTECTION AND OUTLET STRUCTURE.

CONVERSION OF STORMWATER/SEDIMENT BASINS & TRAPS TO STORMWATER/INFILTRATION BASINS INCLUDING REMOVAL OF SEDIMENT, REMOVAL OF SEDIMENT CONTROL DEVICES, SCARIFY BASIN BOTTOM, INSTALLATION OF 2 FEET OF TOPSOIL TO RAISE BASIN BOTTOM TO STORMWATER/INFILTRATION HEIGHT, SEEDING AND INSTALLATION OF SNOUTS IN DESIGNATED MANHOLES AND CATCH BASINS. PERMANENT SITE STABILIZATION.

TEMPORARY CONTROL MEASURES AND FACILITIES FOR USE DURING EARTH MOVING

THE TEMPORARY CONTROL MEASURES AND FACILITIES PROPOSED FOR THIS PROJECT INCLUDE COMPOST FILTER SOCK OR FILTER FENCE, INLET PROTECTION, ROCK FILTER OUTLETS, STEEP SLOPE PROTECTION, TEMPORARY SEEDING AND ROCK CONSTRUCTION ENTRANCE. FOR LOCATIONS AND DIMENSIONS OF THESE TEMPORARY CONTROL MEASURES, SEE THE EROSION CONTROL PLAN AND DETAILS. PERMANENT CONTROL MEASURES AND FACILITIES FOR LONG TERM PROTECTION:

THE PERMANENT CONTROL MEASURES AND FACILITIES PROPOSED FOR THIS PROJECT ARE PAVEMENT, OUTLET PROTECTION AND PERMANENT SEEDING. FOR LOCATIONS AND DIMENSIONS OF THESE PERMANENT CONTROL MEASURES SEE EROSION CONTROL PLAN AND DETAILS. THE FOLLOWING APPLIES TO ALL STAGES OF CONSTRUCTION:

A) UPON COMPLETION OF AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OR PHASE OF AN ACTIVITY, THE SITE SHALL BE IMMEDIATELY SÉEDED, MULCHED OR OTHERWISE PROTECTED FROM ACCELERATED EROSION AND SEDIMENTATION. B) EROSION AND SEDIMENT CONTROL BMP'S SHALL BE IMPLEMENTED AND MAINTAIN UNTIL THE PERMANENT STABILIZATION IS COMPLETED. C) FOR AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OR PHASE OF AN ACTIVITY TO BE CONSIDERED PERMANENTLY STABILIZED, THE DISTURBED AREAS SHALL BE COVERED WITH ONE OF THE FOLLOWING: (1) A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER, WITH A DENSITY CAPABLE OF RESISTING ACCELERATED EROSION AND SEDIMENTATION. (2) AN ACCEPTABLE BMP WHICH PERMANENTLY MINIMIZES ACCELERATED EROSION AND SEDIMENTATION. D)THE CONTRACTOR SHALL, TO THE MAXIMUM EXTENT POSSIBLE, MINIMIZE THE EXTENT AND DURATION OF EARTH DISTURBANCE. E)THE CONTRACTOR SHALL MAXIMIZE THE PROTECTION OF ALL EXISTING DRAINAGE FEATURES AND VEGETATION.

F) THE CONTRACTOR SHALL MINIMIZE SOIL COMPACTION WHEREVER POSSIBLE. G) THE CONTRACTOR SHALL UTILIZE ALL POSSIBLE MEASURES AND CONTROLS TO PREVENT OR MINIMIZE GENERATION OF INCREASED STORMWATER RUNOFF

MAINTENANCE BMP'S

TEMPORARY CONTROLS:

THE CONTRACTOR WILL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL THE TEMPORARY EROSION AND SEDIMENTATION MEASURES TO BE IMPLEMENTED AS PART OF CONSTRUCTION AS FOLLOWS, BUT NOT LIMITED TO:

1. UNTIL THE SITE HAS ACHIEVED FINAL STABILIZATION THE OWNER AND/OR CONTRACTOR SHALL PROPERLY IMPLEMENT, OPERATE AND MAINTAIN ALL THE BEST MANAGEMENT PRACTICES. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENTATION CONTROLS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING, AND RENETTING, MUST BE PERFORMED IMMEDIATELY. STOCKPILE HEIGHTS MUST NOT EXCEED 35 FEET. STOCKPILE SLOPES MUST BE 2:1 OR FLATTER. STOCKPILES MUST BE STABILIZED IMMEDIATELY.

4. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM OF 70% UNIFORM PERENNIAL VEGETATIVE BEEN PROCESSED FOR RE-USE.) COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING OR OTHER MOVEMENTS.

PUMPED WATER FILTER BAGS AREA TO BE USED FOR ALL INCIDENTAL DEWATERING OPERATIONS

1. FILTER BAG INLET PROTECTION TO BE USED AT STORMWATER CATCH BASINS FOR SEDIMENT CONTROL. FILTER BAG TO BE PLACED IN ALL INLETS AS SHOWN ON THE PLAN. SEE ATTACHED DETAILS FOR CONSTRUCTION PROCEDURES AND SPECIFICATIONS. STORMWATER INLETS MUST BE PROTECTED UNTIL THE TRIBUTARY AREAS ARE STABILIZED SEDIMENT MUST BE REMOVED FROM INLET PROTECTION AFTER EACH STORM EVENT, OR WHEN THE DISTANCE BETWEEN THE GRATE AND THE

SEDIMENT LEVEL IS REDUCED TO 18 INCHES. 1. COMPOST FILTER SOCK MUST BE INSTALLED AT GRADE LEVEL. BOTH ENDS OF EACH BARRIER MUST EXTEND AT LEAST 8 FEET UPSLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. . COMPOST FILTER SOCKS SHALL BE CHECKED WEEKLY AND AFTER EACH PRECIPITATION EVENT. COMPOST FILTER SOCKS SHOULD BE REGULARLY INSPECTED TO MAKE SURE THEY HOLD THEIR SHAPE AND ARE PRODUCING ADEQUATE FLOW THROUGH. IF PONDING BECOMES

EXCESSIVE, AND SEDIMENT REACHES THE TOP OF THE COMPOST FILTER SOCK, ADDITIONAL COMPOST FILTER SOCKS SHOULD BE ADDED IN THE AREAS WITHOUT DISTURBANCE OF SOIL OR COLLECTED SEDIMENT 3. SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH ½ THE ABOVE GROUND HEIGHT OF THE BARRIER. 4. ANY COMPOST FILTER SOCK WHICH HAS BEEN UNDERMINED OR TOPPED MUST BE IMMEDIATELY REPLACED WITH A ROCK FILTER OUTLET. WHEN CONSTRUCTION IS COMPLETED ON SITE, THE COMPOST FILTER SOCKS MAY BE DISPERSED WITH A LOADER, RAKE, BULLDOZER OR OTHER DEVICE TO BE INCORPORATED IN THE SOIL OR LEFT ON TOP OF THE SOIL FOR FINAL SEEDING TO OCCUR. THE MESH NETTING MATERIAL WILL BE COLLECTED AND DISPOSED OF IN NORMAL TRASH CONTAINER OR REMOVED BY THE CONTRACTOR. IN CASES WHERE BIODEGRADABLE OR PHOTODEGRADABLE PRODUCTS ARE USED. THEY MAY BE LEFT ON SITE AT THE DIRECTION OF THE ENGINEER.

1. THE STRUCTURE'S THICKNESS WILL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE OF ROCK

WILL BE MAINTAINED ON THE SITE OR BE READILY ACCESSIBLE FOR THIS PURPOSE. AT THE END OF EACH CONSTRUCTION DAY, ALL SEDIMENT DEPOSITED ON PUBLIC ROADWAYS WILL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE. WASHING OF PUBLIC ROADWAYS WITH WATER

THE DIKE SHALL BE CHECKED PERIODICALLY AND AFTER EACH STORM EVENT. THE DIKE SHALL BE REPAIRED IF WASHOUT OCCURS AND SHALL privately owned and maintained. The owner will be: BE REVEGETATED WHEN NECESSARY.

STORMWATER\SEDIMENTATION BASIN: THE BASIN SHALL BE CHECKED DAILY AND IMMEDIATELY AFTER A STORM EVENT AND SHALL BE CLEANED AND REPAIRED AS NECESSARY. SEDIMENT SHALL BE CLEANED OUT WHEN THE MARKED SEDIMENT LEVEL IS REACHED ON THE TEMPORARY SEDIMENTATION CONTROL STANDPIPE (SEE STANDPIPE MAINTENANCE SECTION). ALL AREAS OF THE BASIN SHALL BE VEGETATED AND SHALL BE RESEEDED AS NECESSARY.

TEMPORARY SEDIMENTATION CONTROL STANDPIPE: THE STRUCTURE SHALL BE CHECKED DAILY AND IMMEDIATELY AFTER A STORM EVENT. ALL SEDIMENT SHALL BE CLEANED OUT OF THE POND WHEN SEDIMENT LEVEL REACHES THE FIRST ROW OF PERFORATIONS ON THE STANDPIPE. WHEN SEDIMENT IS REMOVED FROM THE POND, THE STANDPIPE FILTERING STONE SHALL ALSO BE REPLACED.

THE WATERWAYS SHALL BE CHECKED PERIODICALLY AND AFTER EACH STORM EVENT. THE SWALES SHALL BE REPAIRED IF WASHOUT OCCURS AND SHALL BE REVEGETATED WHEN NECESSARY. IF WASHOUT CONTINUES TO OCCUR, UP SIZE THE EROSION CONTROL MATTING BEFORE

ROCK FILTER OUTLETS: SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/3 THE HEIGHT OF THE OUTLETS.

THE HEIGHT OF THE ROCK FILTER SHOULD EQUAL 5/6 THE HEIGHT OF THE STRAW BALES OR FILTER FABRIC.

ALL CONCRETE WASHOUT FACILITIES SHOULD BE INSPECTED DAILY. DAMAGED OR LEAKING WASHOUTS SHOULD BE DEACTIVATED AND REPAIRED IMMEDIATELY. ACCUMULATED MATERIALS SHOULD BE REMOVED WHEN THEY REACH 75% CAPACITY. PLASTIC LINERS SHOULD BE REPLACED WITH EACH CLEANING OF THE WASHOUT FACILITY. DISPOSAL OF WASHOUT MATERIALS & WASHOUT WATER SHOULD BE RECYCLED. WASH WATER CAN BE LEFT TO EVAPORATE & SOLID MATERIAL CAN BE USED AS FILL MATERIAL. TEMPORARY SEEDING

PLANTING AND SEEDING DATES EXTEND FROM MARCH 15TH TO OCTOBER 15TH. INTERIM STABILIZATION WILL BE ACHIEVED BY MULCHING. AREAS TO BE TEMPORARILY SEEDED WILL BE PLANTED WITH RYEGRASS, LOLIUM SPECIES, (100%) AT A RATE OF 44 LBS. PER ACRE. BEFORE TEMPORARILY SEEDING, FERTILIZE WITH BASIC FERTILIZER (5-5-5) AT A RATE OF 1000 LBS. PER ACRE AND LIME AT A RATE OF ONE (1) TON PER ACRE. TEMPORARILY SEEDED AREAS WILL BE FERTILIZED WITH BASIC FERTILIZER (0-20-20) AT A RATE OF 20 LBS. PER THOUSAND SQUARE FEET (1,000 SQ. FT.) IMMEDIATELY BEFORE SEEDING. AFTER SEEDING, THE TEMPORARILY SEEDED AREAS WILL BE MULCHED WITH WOOD CELLULOSE FIBER AT A RATE OF THREE (3) TONS PER ACRE.

PLANTING AND SEEDING DATES EXTEND FROM MARCH 15 TO JUNE 1 AND AUGUST 1 TO OCTOBER 15, UNLESS OTHERWISE DIRECTED. INTERIM STABILIZATION WILL BE ACHIEVED BY MULCHING. THE OWNER WILL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL PERMANENT EROSION AND SEDIMENTATION CONTROL MEASURES AFTER CONSTRUCTION IS COMPLETED.

1. ALL SEEDS, AS SPECIFIED WILL CONFORM TO THE PENNSYLVANIA SEED ACT OF 1965, AS AMENDED, AND REGULATIONS OF THE PENNSYLVANIA DEPARTMENT OF AGRICULTURE, BUREAU OF PLANT INDUSTRY.

2. THE PERCENTAGE OF PURE SEED PRESENT WILL REPRESENT THE FREEDOM OF SUCH AGRICULTURAL SEEDS FROM INERT MATTER AND FROM OTHER SEEDS DISTINGUISHABLE BY THEIR APPEARANCE. THE PERCENTAGE OF GERMINATION SHOWN WILL BE ACTUAL SPROUTS AND WILL NOT INCLUDE HARD SEEDS, UNLESS SPECIFICALLY PERMITTED. ALL SEEDS PROPOSED UNDER THIS ITEM WILL BE SUBJECT TO ANALYSIS TEST BY THE COMMONWEALTH OF PENNSYLVANIA, DEPARTMENT OF AGRICULTURE, BUREAU OF PLANT INDUSTRY, AND WILL MEET THESE SPECIFICATIONS. NO SEED WILL BE ACCEPTED WITH A TEST DATE OF MORE THAN SIX MONTHS PRIOR TO THE DATE OF SOWING AND WILL BE OF THE MOST RECENT

3. ALL SEEDS WILL BE FURNISHED TO THE PROJECT SITE IN MIX PREPARED BY THE SEED PROCESSOR. THE MIX SHALL HAVE A CERTIFICATION TAG THAT SHALL BE KEPT BY OWNER UNTIL STABILIZATION. SEED MIXTURES WILL BE AS FOLLOWS:

Seed mixtures will be as follows (PennDOT Formula B plus nurse crop of Spring Oats or Winter Rye):

GERMINATION RATE / 1000 SF Perennial Ryegrass Mixture Creeping Red Fescue 6.00 lb. 11.00 lb Kentucky Bluegrass Spring Oats or Winter Rye \*\* 13.00 lb

\*\*Nurse crop added to PennDOT Formula B as follows: Spring Oats for planting March 15—June 1; Winter Rye for planting August 1 — October

1. <u>Low Maintenance Turf</u> — Plant on all slopes steeper than 3:1. Seed Mixture and Nurse Crop:

> Low Maintenance Mixture by Seedway (www.seedway.com), or approved equal at 8 lbs. per 1,000 SF: 40% Proprietary Hard Fescue 30% Proprietary Sheep Fescue

30% Proprietary Chewings Fescue ■ Nurse crop: Annual Ryegrass @ 8 lbs. Per 1,000 SF

Detention Basin Tur ERNMX-126 by Ernst Seeds (www.ernstseed.com), or approved equal Seeding Rate: 20-40 lb per acre, or 1 lb per 1,000 SF Mix Type Storm Water Management Facility Sites

■ 20% Virginia Wildrye, PA Ecotype (Elymus virginicus, PA Ecotype) 20% Alkaligrass, 'Fults' (Puccinellia distans, 'Fults')

■ 4% Autumn Bentgrass, PA Ecotype (Agrostis perennans, PA Ecotype)

■ 17% Deertongue, 'Tioga' (Panicum clandestinum (Dichanthelium c.), 'Tioga') ■ 17% Fox Sedge, PA Ecotype (Carex vulpinoidea, PA Ecotype) ■ 14% Creeping Bentgrass (Agrostis stolonifera)

• 4% Ticklegrass (Rough Bentgrass), PA Ecotype (Agrostis scabra, PA Ecotype)

3% Soft Rush (Juncus effusus) ■ 1% Path Rush, PA Ecotype (Juncus tenuis, PA Ecotype)

STARTER FERTILIZER:

1. IMMEDIATELY BEFORE PERMANENT SEEDING, APPLY A STARTER FERTILIZER BY DISCING DOLOMITIC LIMESTONE AT A RATE OF 4 TONS PER ACRE, RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK BASIC FERTILIZER (10-20-20) AT A RATE OF 1000 LBS PER ACRE AND 25 LBS. OF 10-6-4, 50% ORGANIC NITROGEN PER THOUSAND SQUARE FEET (1,000 SQ. FT.). AT LEAST THIRTY-FIVE PERCENT (35%) OF THE TOTAL NITROGEN WILL BE WATER INSOLUBLE (NITROGEN FROM NATURAL ORGANIC SOURCES SUCH AS UREAFORM).

1. HAY OR STRAW MULCH MUST BE APPLIED AT RATES OF AT LEAST 3.0 TONS PER ACRE. MULCH CONSISTING OF NATIVE OR AGRICULTURAL GRASSES SUCH AS WHEAT OR OATS STRAW WILL BE PLACED OVER ALL LAWN AREAS WITHIN FORTY-FIGHT (48) HOURS AFTER RAKING AND SEEDING OR PLANTING HAS BEEN PERFORMED. SALT HAY OR OTHER SALINE MARSH GRASSES ARE NOT ACCEPTABLE. THE MATERIAL WILL BE APPLIED AT AN AVERAGE MINIMUM DEPTH OF TWO INCHES (2") LOOSE MEASUREMENT. CARE WILL BE TAKEN WHEN PLACING THE MULCH SO AS NOT TO DISTURB THE SEEDED SURFACES. THE MULCH WILL BE SECURED BY ONE OR SEVERAL OF THE FOLLOWING METHODS, DEPENDING ON THE SIZE OF THE AREA, STEEPNESS OF SLOPE, AVAILABILITY OF EQUIPMENT AND COSTS.

2. PEGS AND TWINE MAY BE USED TO SECURE MULCH. DRIVE EIGHT-TO-TEN-INCH (8" - 10") WOODEN PEGS TO WITHIN TWO-TO-THREE INCHES (2" - 3") OF THE SOIL SURFACE EVERY FOUR FEET (4') IN ALL DIRECTIONS BEFORE OR AFTER APPLYING MULCH. SECURE MULCH TO SOIL SURFACE BY STRETCHING TWINE BETWEEN PEGS IN A CRISS-CROSS WITHIN A SQUARE PATTERN. SECURE TWINE AROUND EACH PEG WITH TWO OR MORE ROUND TURNS.

3. EMULSIFIED ASPHALT MAY BE USED TO SECURE MULCH. EMULSION WILL CONFORM TO REQUIREMENTS OF AASHTO GRADE RS-1 OR PENNSYLVANIA DEPARTMENT OF TRANSPORTATION BULLETIN NO. 25 FOR CLASS E-1 OR E-6. EMULSION WILL BE HOMOGENEOUS AND WILL BE MISCIBLE WITH WATER. IT WILL CONTAIN NO SOLVENTS OR OTHER DILATIVE AGENTS TOXIC TO PLANT LIFE AND NOT MORE THAN 0.75 PERCENT OF SAPONIFIABLE ACIDS. APPLY UNIFORMLY AT THE RATE OF TWENTY-EIGHT (28) GALLONS PER ONE THOUSAND SQUARE YARDS (1,000 SQ.

THE CONTRACTOR WILL, DURING THE LIFE OF THE CONTRACT, PROPERLY CARE FOR ALL AREAS AND MULCHES, PERFORMING SUCH REMULCHING AS NECESSARY TO PROVIDE PROTECTION FOR ESTABLISHED GROWTH ON THE TREATED AREA. RECYCLING AND DISPOSAL OF MATERIALS

A SEPARATE EROSION AND SEDIMENTATION CONTROL PLAN MUST BE APPROVED FROM CUMBERLAND COUNTY CONSERVATION DISTRICT BEFORE ANY SOIL MATERIAL FROM THE SITE IS MOVED TO ANOTHER LOCATION. THE RECYCLING OF ALL CONSTRUCTION WASTE WHERE FEASIBLE IS REQUIRED. THIS INCLUDES BUT NOT LIMITED TO SOIL MATERIAL, BUILDING MATERIAL, CONCRETE WASH WATER, SANITARY WASTES, ETC. **CLEAN FILL NOTES:** 

CLEAN FILL: 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

APPLICANTS AND/OR OPERATORS MUST USE ENVIRONMENTAL DUE DILIGENCE TO ENSURE THAT THE FILL MATERIAL ASSOCIATED WITH THIS PROJECT QUALIFIES AS CLEAN FILL. ALL FILL MATERIAL MUST BE IN ACCORDANCE WITH THE DEPARTMENT'S POLICY "MANAGEMENT OF FILL", DOCUMENT NUMBER 258-2182-77

ENVIRONMENTAL DUE DILIGENCE: INVESTIGATIVE TECHNIQUES, INCLUDING, BUT NOT LIMITED TO, VISUAL PROPERTY INSPECTIONS, ELECTRONIC DATA BASED SEARCHES, REVIEW OF PROPERTY OWNERSHIP, REVIEW OF PROPERTY USE HISTORY, SANBORN MAPS, ENVIRONMENTAL QUESTIONNAIRES TRANSACTION SCREENS, ANALYTICAL TESTING, ENVIRONMENTAL ASSESSMENTS OR AUDITS. ANALYTICAL TESTING IS NOT A REQUIRED PART OF DUE DILIGENCE UNLESS VISUAL INSPECTION AND/OR REVIEW OF THE PAST LAND USE OF THE PROPERTY INDICATES THAT THE FILL MAY HAVE BEEN SUBJECTED TO A SPILL OR RELEASE OF REGULATED SUBSTANCE. IF THE FILL MAY HAVE BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE, IT MUST BE TESTED TO DETERMINE IF IT QUALIFIES AS CLEAN FILL. TESTING SHOULD BE PERFORMED IN ACCORDANCE WITH APPENDIX A OF THE DEPARTMENT'S POLICY "MANAGEMENT OF FILL".

CLEAN FILL AFFECTED BY A SPILL OR RELEASE OF REGULATED SUBSTANCE: FILL MATERIALS AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE STILL QUALIFIES 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 ORIGIN 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.

REGULATION AND RESPONSIBILITY

IF THE SITE WILL NEED TO HAVE FILL IMPORTED FROM AN OFFSITE LOCATION, THE RESPONSIBILITY FOR PERFORMING ENVIRONMENTAL DUE DILIGENCE AND THE DETERMINATION OF CLEAN FILL RESIDES WITH OPERATOR

IF THE SITE WILL HAVE EXCESS FILL THAT WILL NEED TO BE EXPORTED TO AN OFFSITE LOCATION, THE RESPONSIBILITY OF CLEAN FILL DETERMINATION AND ENVIRONMENTAL DUE DILIGENCE RESTS ON THE APPLICANT. HOWEVER, THE OPERATOR SHALL BE RESPONSIBLE FOR CERTIFICATION OF CLEAN FILL IF A PREVIOUSLY UNKNOWN SPILL OR RELEASE OF REGULATED SUBSTANCE IS FOUND ON THE SITE DURING

FILL MATERIAL THAT DOES NOT QUALIFY AS CLEAN FILL IS REGULATED FILL. REGULATED FILL IS WASTE AND MUST BE MANAGED IN ACCORDANCE WITH THE DEPARTMENT'S MUNICIPAL OR RESIDUAL WASTE REGULATIONS BASED ON 2 PA. CODE CHAPTERS 287 RESIDUAL WASTE MANAGEMENT OR 271 MUNICIPAL WASTE MANAGEMENT, WHICHEVER IS APPLICABLE.

STORMWATER MANAGEMENT OWNERSHIP, ADMINISTRATION & MAINTENANCE The proposed storm sewers located off public street rights—of—way, swales, outlet protection and stormwater management basins will be

Property Owner: Rider Musser Development, LLC 5 Kacey Court, Suite 203 Address: Mechanicsburg, PA 17055

his representative prior to implementation of the program.

the basin.

adequate channel flow.

The new off road stormwater system will not be dedicated to the Upper Allen Township and will remain under the ownership of Rider Musser Development, LLC or successors and assigns. Upper Allen Township shall have right to inspect the facilities at any time; require the owner to take corrective measures and assign the owner reasonable time period for any necessary action; and authorize maintenance to be done and lien all costs of the work against the

property of the private entity responsible for maintenance, if corrective measures are not taken within the specified time period. WATER QUALITY INLET OPERATION & MAINTENANCE SCHEDULE

• Monitor Monthly for the first year of a new installation after the site has been stabilized, and quarterly thereafter. • Check sediment depth and note any surface pollutants in the structure. The pollutants collected in SNOUT, equipped structures will consist of floatable debris and oils on the surface of the captured water, and grit and sediment in the sumped bottom of the structure. • It is best to schedule maintenance based on the solids collected in the sump. Optimally, the structure should be cleaned when the sump is no more than half full (e.g. when 1 foot of material collects in a 2 foot sump, clean it out).

 Structures should also be cleaned if a spill or other incident causes a larger than normal accumulation of pollutants in a structure. • Maintenance is best done with a vacuum truck. • If oil absorbent hydrophobic booms are being used in the structure to enhance hydrocarbon capture and removals, they should be checked on a monthly basis, and serviced or replaced when more than 2/3 of the boom is submerged, indicating a nearly saturated state. All collected wastes must be handled and disposed of according to local and state environmental requirements. • To maintain the SNOUT hoods themselves, an annual inspection of the antisiphon vent and access hatch are recommended. Flushing of the vent with water or compressed air, or gently rod with a flexible wire. Opening and closing the access hatch once a year.

VEGETATED SWALE OPERATIONS & MAINTENANCE SCHEDULE • The swale shall be inspected twice per year, between March 15th & April 30th and again between October 1st & November 30th to evaluate its health and to remove and replace any dead, diseased or unsalvageable vegetation. Pests and diseases of the vegetation shall be treated as necessary with low—toxic, preventative measures. Program of prevention and treatment shall be approved by the owner or

 Areas of bare soil shall be raked, seeded and mulched immediately. • During times of extended drought, look for physical features of stress. Water in the early morning as needed to maintain one (1") inch of Remove accumulated sediment and debris from the channel on a monthly basis • The soils and organic material shall be tested annually and the pH adjusted per the tests to maintain a pH required for the planting.

• After each rainstorm, inspect surface to insure that drainage paths are clear and that ponding water dissipates over 4-6 hours. (water may pond for longer times during the winter and early spring.) The swale is not a pond. It should not provide a breeding ground for mosquitoes. • Inspect vegetation on side slopes and channel bottom for erosion and formation of rills or gullies, correct as needed to design grade • Inspect for litter; remove prior to mowing • Mow and trim vegetation to ensure safety, aesthetics, proper swale operation, or to suppress weeds and invasive vegetation; dispose of

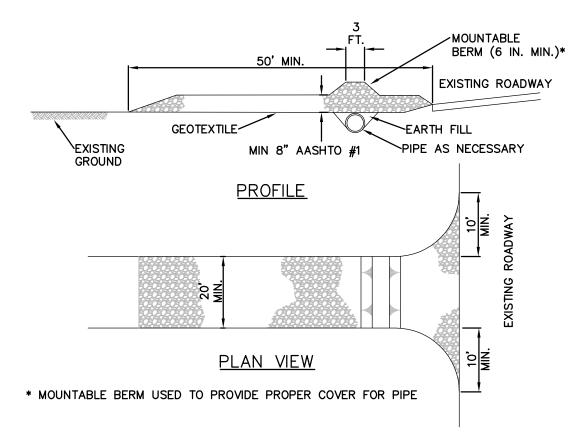
 Mow meadow seed mix area only once per year during dormant season (early spring). DETENTION / INFILTRATION BASIN OPERATION & MAINTENANCE SCHEDULE • All basin structures expected to receive and/or trap debris and sediment should be inspected for clogging and excessive debris and

cutting in a local composting facility; mow only when swale is dry to avoid rutting.

sediment accumulation at least four (4) times per year, as well as after every storm greater than 1 inch. o Structures include basin bottoms, trash racks, outlet structures, riprap or gabion structures, and inlets. • Sediment removal should be conducted when the basin is completely dry. Sediment should be disposed of properly and once sediment is removed, disturbed areas need to be immediately stabilized and revegetated. • Mowing and/or trimming of vegetation should be preformed as necessary to sustain the system, but all detritus should be removed from

• Upon finding any component of the drainage structures not functioning as intended, that portion of the structure shall be immediately

o Vegetated areas should be inspected annually for erosion. o Vegetated areas should be inspected annually for unwanted growth of exotic/invasive species.
o Vegetative cover should be maintained of 95 percent. If vegetative cover has been reduced by 10 percent, vegetation • Grass on the stormwater basin emergency spillway shall be mowed on a regular basis to prevent brush and tree growth and to provide



NOTES:

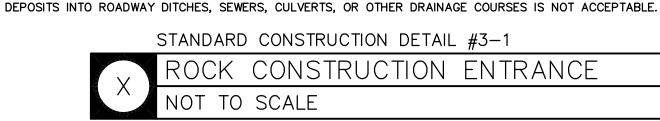
REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF

CONSTRUCTION ENTRANCE. MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS

SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE

AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50

FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE



W: \PROJECTS\14001 Woodland Drive Proposed Exercise Facility - 4 Under, Inc\15-Project Details\2012 E&S Manual\_Page\_283-.JPG



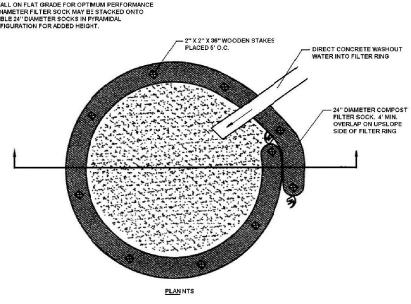
Typical Compost Sock Washout Installation - MAXIMUM DEPTH OF CONCRETE WASHOUT WATER IS 50% OF FILTER RING HEIGHT NOTES:

1. INSTALL ON FLAT GRADE FOR OPTIMUM PERFORMANCE

2. 18" DIAMETER FILTER SOCK MAY BE STACKED ONTO

DOUBLE 22" DIAMETER SOCKS IN PRAMIDAL

CONFIGURATION FOR ADDED HEIGHT.



A suitable impervious geomembrane shall be placed at the location of the washout prior to installing the socks. Adapted from Filtrexx

363-2134-008 / March 31, 2012 / Page 58 CONCRETE WASH-OUT AREA NOT TO SCALE

REMAIN THE PROPERTY OF

ASSOCIATES, Ltd. ANY REUS

ON PROJECT EXTENSIONS,

ANY OTHER PROJECT O

ALTERATIONS OR ADDITION:

AT USER'S SOLE RISK AND

H. EDWARD BLACK AND

ASSOCIATES, Ltd.

O THIS PROJECT SHALL BE

H. FDWARD BLACK AND

| S | G |

		<u>PLAN VIEW</u>	CENTER			
SOCK NO.	DIA (IN)	LOCATION	SLOPE PERCENT	SLOPE LENGTH ABOVE BARRIE		
1	12"		7.92%	265'		
1A	12"		4.44%	45'		
2A	12"		12.50%	40'		
2B	12"		13.33%	75'		
2C 3	12" 12"		12.30% 7.69%	65'		
4	12"		6.55%	65' 61'		
5	12"		3.25%	123'		
6	12"		2.50%	80'		
7	12"		1.87%	80'		
8	12"		7.00%	150'		
9	12"		5.15%	126'		
10	18"		12.85%	35'		
11	12"		6.52%	23'		
12	12"		13.63%	11'		
13	12"		8.33%	12'		
14	12"		9.52%	21'		
15	12"		10.71%	42'		
16 17	12" 12"		15.00% 23.33%	30'		
18	12"		10.00%	15' 15'		
19	12"		2.63%	19'		
20	12"		9.09%	11'		
21	12"		8.33%	12'		
22	12"		9.61%	26'		
23	18"		6.00%	100'		
24	18"		6.00%	100'		
25	12"		16.67%	27'		
26	12"		18.18%	44'		
27	12"		17.27%	55'		
28	12"		27.58%	29'		
29	12"		27.58%	29'		
30	12"		6.49%	77'		
31 32	12" 18"		11.18% 15.00%	76'		
33	12"		2.41%	30'		
34	12"		11.38%	124' 101'		
35	12"		7.57%	66'		
36	12"		5.31%	47'		
37	12"		10.52%	19'		
38	12"		15.62%	16'		
39	12"		16.66%	21'		
40	12"		25.00%	6'		
41	32"		22.92%	199'		
42	12"		18.75%	16'		
43 44	12"		12.50% 3.57%	20'		
44 45	12" 12"		4.16%	7'		
<del>45</del> 46	12"		18.18%	12' 22'		
<del>47</del>	12"		14.28%	7'		
48	18"		15.62%	160'		
49	12"		5.10%	46'		
50	12"		21.73%	23'		
51	12"		22.22%	27'		
52	12"		7.14%	35'		
53	12"		6.97%	43'		
54	12"		13.33%	15'		
55	12"		10.00%	20'		
56 57	12"		13.63%	22'		
57 58	12" 12"		18.18% 20.00%	22'		
58 	12"		15.00%	20' 20'		
60	12"		16.00%	25'		
61	18"		20.00%	20'		
62	18"		16.67%	12'		
63	12"		19.04%	42'		
64	18"		20.51%	78'		
65	18"		32.50%	40'		
66	18"		31.70%	41'		
67	18"		31.57%	38'		
68	18"		32.35%	34'		
69	18"		31.81%	33'		
70	18"		26.82%	41'		
71	18"		25.00%	42'		
72 73	18" 18"		26.19% 26.13%	42'		
73 74	18"		30.30%	44'		
74 75	18"		30.30%	33'		
	18"		30.30%	33' 33'		
	18"		33.33%	30'		
	12"		32.00%	25'		
<del>70</del> 79	12"		6.13%	163'		
80	12"		11.68%	107'		

13.04%

17.14%

6.75%

5.11%

SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE

COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED

COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT

LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER

BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL

UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE

ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND

SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY AREA.

STANDARD CONSTRUCTION DETAIL #4-1

ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.

COMPOST SILT SOCK

STANDARDS OF TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.

TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.

NOT TO SCALE

DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.

172**'** 

SOCK NO.	STATIONS	LOCATION	SLOPE PERCENT	SLOPE LENGTH ABOVE BARRIER	SOCK NO.	STATIONS	LOCATION	SLOPE PERCENT	SLOPE LEN ABOVE BAF
86	12"		5.00%	100'	111	12"		5.71%	35'
87	18"		20.83%	48'	112	12"		5.88%	34'
88	12"		9.45%	37'	113	12"		5.00%	40'
89	12"		20.00%	15'	114	12"		4.25%	47'
90	12"		15.00%	20'	115	12"		4.00%	25'
91	12"		10.00%	45'	116	12"		6.45%	31'
92	12"		7.27%	55'	117	12"		5.71%	105'
93	12"		12.50%	48'	118	12"		7.79%	154'
94	12"		14.03%	57	119	12"		9.17%	109'
95	12"		19.56%	46'	120	12"		8.33%	72'
96	12"		17.85%	56'	121	24"		4.47%	380'
97	12"		18.64%	59'	122	12"		8.24%	97'
98	12"		6.94%	72'	123	12"		7.31%	41'
99	12"		10.52%	38'	124	12"		7.50%	40'
100	12"		13.33%	30'	125	32"		8.02%	411'
101	12"		32.35%	17'	126	32"		8.39%	393'
102	12"		33.33%	18'	127	32"		6.98%	415'
103	12"		6.25%	64'	128	32"		5.96%	569'
104	12"		6.12%	49'	129	12"		9.25%	54'
105	12"		7.01%	57'	130	12"		25.00%	22'
106	18"		10.00%	160'	131	12"		25.00%	26'
107	12"		7.01%	57'	132	12"		25.86%	29'
108	12"		5.00%	140'	133	12"		26.56%	32'
109	12"		12.50%	40'	134	12"		26.47%	34'
110	12"		3.70%	27'	135	12"		27.02%	37'
					136	12"		17.65%	17'

NOT TO SCALE -SOIL BACKFILL 6 IN. MIN. EXCAVATE CHANNEL TO DESIGN GRADE AND CROSS SECTION OVERCUT CHANNEL 2 IN. TO--LONGITUDINAL ALLOW BULKING DURING SEED ANCHOR TRENCH BED PREPARATION LONGITUDINAL ANCHOR TRENCH INTERMITTENT CHECK SLOT -SHINGLE-LAP SPLICED ENDS OR BEGIN NEW ROLL IN AN INTERMITTENT CHECK SLOT

PREPARE SOIL AND APPLY SEED BEFORE INSTALLING BLANKETS, MATS, OR OTHER TEMPORARY CHANNEL LINER SYSTEM.

MIN. SHINGLE LAP=6 IN.

LONGITUDINAL ANCHOR TRENCH (LOOKING DOWNSTREAM) CHANNEL CROSS-SECTION

\* SEE MANUFACTURER'S LINING INSTALLATION DETAIL FOR STAPLE PATTERNS, VEGETATIVE STABILIZATION

CHANNEL NO.	STATIONS	BOTTOM WIDTH B (FT)	DEPTH D* (FT)	TOP WIDTH W (FT)	Z1 (FT)	Z2 (FT)	LINING *
SWALE 1.1	ALL	0.92'	1.08'	7.96'	3	3	ROCK RIPRAP/R6 ROCK
SWALE 1.2	ALL	2.00'	1.36'	10.16'	3	3	NAG DS75/VEGETATION
SWALE 2.1	ALL	2.00'	1.19'	9.86'	3	3	ROCK RIPRAP/R7 ROCK
SWALE 2.2	ALL	3.00'	1.37'	11.22'	3	3	NAG S75BN/VEGETATION
SWALE 2.3	ALL	3.00'	1.54'	12.24'	3	3	NAG S75BN/VEGETATION
SWALE 2.4	ALL	0.00'	1.88'	7.52'	2	2	NAG S75BN/VEGETATION
SWALE 3.1	ALL	0.00'	1.74'	6.96'	2	2	NAG S75BN/VEGETATION
SWALE 3.2	ALL	2.00'	1.41'	10.46'	3	3	NAG S75BN/VEGETATION
SWALE 4	ALL	2.00'	1.60'	11.60'	3	3	NAG S75BN/VEGETATION
SWALE 5.1	ALL	2.00'	1.37'	10.22'	3	3	NAG SC250/VEGETATION
SWALE 5.2	ALL	2.00'	1.45'	10.70	3	3	NAG S75BN/VEGETATION
SWALE 6.1	ALL	3.00'	1.25'	8.28'	2	2	ROCK RIPRAP/R8 ROCK
SWALE 6.2	ALL	3.00'	1.45'	8.80'	2	2	NAG SC250/VEGETATION
SWALE 6.3	ALL	3.00'	1.50'	12.00'	3	3	NAG SC150BN/VEGETATION
SWALE 7.1	ALL	2.00'	1.39'	10.34	3	3	NAG SC150BN/VEGETATION
SWALE 7.2	ALL	2.00'	1.46'	10.76	3	3	NAG SC150BN/VEGETATION
SWALE 8.1	ALL	2.00'	1.34'	10.04	3	3	NAG SC250/VEGETATION
SWALE 8.2	ALL	2.00'	1.36'	10.16'	3	3	NAG SC250/VEGETATION
SWALE 9	ALL	2.00'	1.56'	11.36'	3	3	NAG S75BN/VEGETATION
SWALE 10	ALL	2.00'	1.34'	10.04	3	3	NAG SC250/VEGETATION
SWALE 11.1	ALL	2.00'	1.57'	11.42'	3	3	NAG S75BN/VEGETATION
SWALE 11.2	ALL	2.00'	1.37'	7.48'	2	2	NAG S75BN/VEGETATION
SWALE 12.1	ALL	2.00'	1.60'	11.60'	3	3	NAG S75BN/VEGETATION
SWALE 12.2	ALL	2.00'	1.42'	7.68'	2	2	NAG S75BN/VEGETATION
SWALE 13.1	ALL	2.00'	1.69'	11.98'	3	3	NAG SC250/VEGETATION
SWALE 13.2	ALL	2.00'	1.80'	12.80'	3	3	NAG S75BN/VEGETATION
SWALE 13.3	ALL	2.00'	1.50'	11.00'	3	3	NAG S75BN/VEGETATION
SWALE 14.1	ALL	2.00'	1.21'	8.05'	2	3	NAG S75BN/VEGETATION
SWALE 14.2	ALL	2.00'	1.25'	9.50'	3	3	NAG S75BN/VEGETATION
SWALE 15	ALL	0.50'	1.89'	11.84	3	3	NAG S75BN/VEGETATION
SWALE 16.1	ALL	3.50'	1.19'	8.83'	3	3	ROCK RIPRAP/R8 ROCK
SWALE 16.2	ALL	0.50'	1.63'	10.28	3	3	NAG S75BN/VEGETATION
SWALE 16.3	ALL	0.50'	1.41'	8.98'	3	3	NAG S75BN/VEGETATION
SWALE 17	ALL	0.50'	1.25'	8.00'	3	3	NAG S75BN/VEGETATION
SWALE 18	ALL	2.00'	1.76'	12.56	3	3	NAG S75BN/VEGETATION
SWALE 19	ALL	0.50'	1.98'	12.38'	3	3	NAG S75BN/VEGETATION
SWALE 20	ALL	0.50'	1.49'	9.44	3	3	NAG S75BN/VEGETATION
SWALE 21.1	ALL	4.00'	1.69'	12.45'	3	2	NAG S75BN/VEGETATION
SWALE 21.2	ALL	4.00'	1.50'	11.50'	3	2	NAG S75BN/VEGETATION
SWALE 22	ALL	4.00'	1.53'	11.65	2	3	NAG SC150BN/VEGETATION
SWALE 23.1	ALL	0.50'	1.35'	8.60'	3	3	NAG P550/VEGETATION
SWALE 23.2	ALL	0.50'	1.65'	10.40'	3	3	NAG S75BN/VEGETATION
SWALE 24	ALL	4.00'	2.02'	12.08	2	2	NAG S75BN/VEGETATION
SWALE 25	ALL	2.00'	1.67'	12.08	3	3	NAG S75BN/VEGETATION
SWALE 25	ALL	3.00'	1.54'	12.02	3	3	NAG S75BN/VEGETATION
SWALE 20	ALL				3	3	NAG SC250/VEGETATION
SWALE 27	ALL	3.00' 2.00'	1.56' 1.53'	12.36' 11.18'	1 -	3	NAG S75BN/VEGETATION

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.

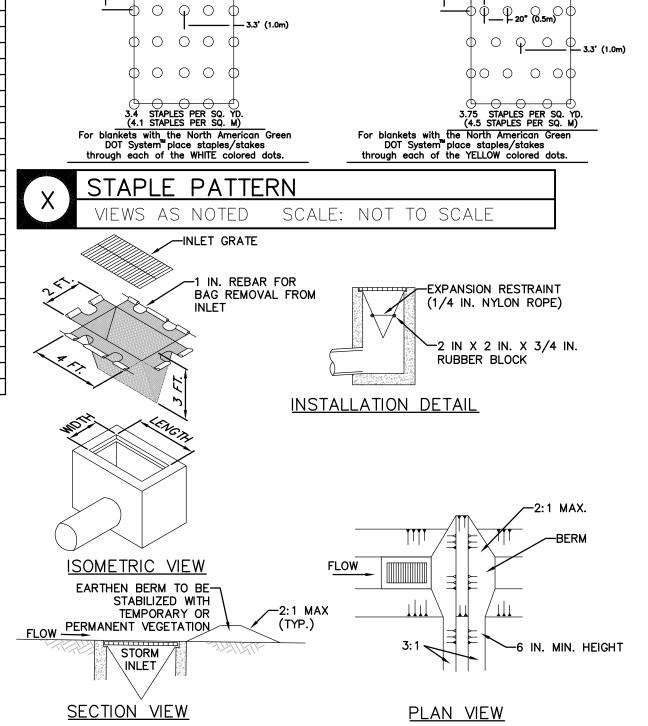
\*INCLUDES FREEBOARD STANDARD CONSTRUCTION DETAIL #6-1



EGETATED CHANNEL NOT TO SCALE

ANCHOR TRENCHES SHALL BE INSTALLED AT BEGINNING AND END OF CHANNEL IN THE SAME MANNER AS

STANDARD CONSTRUCTION DETAIL #4-15 TER BAG INLET PROTECTION - TYPE C INLET



| - 10" (0.25m)

NOTES: MAXIMUM DRAINAGE AREA = 1/2 ACRE.

4' (1.2m) ()—()

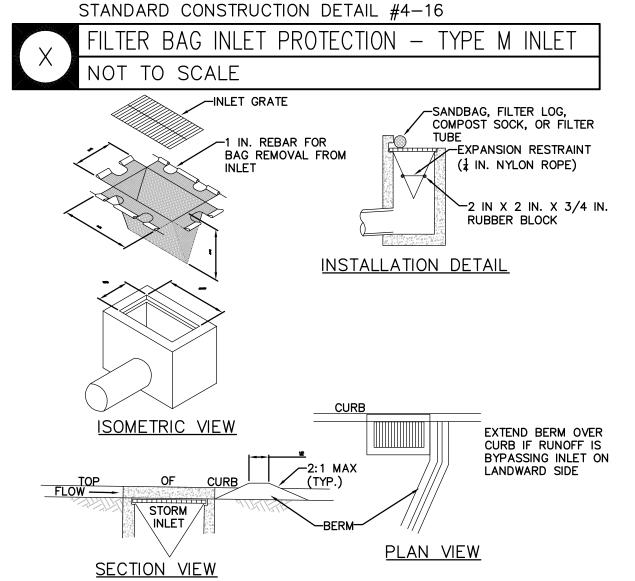
INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.

ROLLED EARTHEN BERM IN ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM ON ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. EARTHEN BERM IN CHANNEL SHALL BE MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED OR REMAIN PERMANENTLY.

AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS., A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40

INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT OF BAGS. ALL NEEDED REPAIRS SHALL BE INITIATED IMMEDIATELY AFTER THE INSPECTION. DISPOSE ACCUMULATED SEDIMENT AS WELL AS ALL USED BAGS ACCORDING TO THE PLAN NOTES.

DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.



MAXIMUM DRAINAGE AREA = 1/2 ACRE.

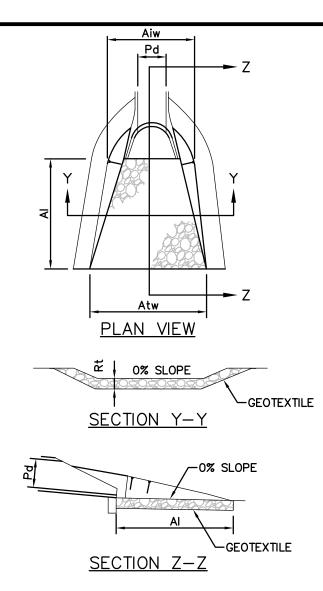
INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.

ROLLED EARTHEN BERM SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. SIX INCH MINIMUM HEIGHT ASPHALT BERM SHALL BE MAINTAINED UNTIL ROADWAY SURFACE RECEIVES FINAL COAT. AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS, A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40

INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT OF BAGS. ALL NEEDED REPAIRS SHALL BE INITIATED IMMEDIATELY AFTER THE INSPECTION. DISPOSE OF ACCUMULATED SEDIMENT AS WELL AS ALL USED BAGS ACCORDING TO THE PLAN NOTES.

DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.





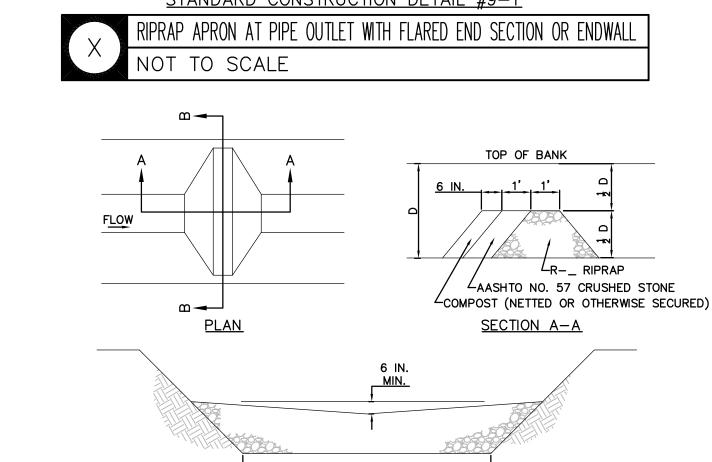
		RIPI	RAP		APRON	
OUTLET NO.	PIPE DIA Pd (IN)	SIZE R	THICK. Rt (IN)	LENGTH AI (FT)	INITIAL WIDTH Aiw (FT)	TERMI WID At (F1
EW-1	36"	R-4	18"	19'	9'	28
EW-2	15"	R-3	9"	8'	3.75'	11.7
EW-3	15"	R-3	9"	6'	3.75'	9.7
EW-4	24"	R-4	18"	11'	6'	17
EW-5	18"	R-4	27"	11'	4.50'	15.5
EW-6	15"	R-3	9"	4'	3.75'	7.7
EW-8	15"	R-4	18"	11'	3.75'	14.7
EW-9	15"	R-3	9"	8'	3.75'	11.7
EW-10	15"	R-5	27"	13'	3.75	16.7
EW-12	30"	R-4	18"	14'	7.5'	21.5
EW-13	15"	R-3	9"	6'	3.75	9.7
EW-14	15"	N/A C	IRECT D	ISCHARG	E TO P	OND
EW-15	30"	R-4	18"	12'	7.5'	19.5
EW-16	15"	R-3	9"	4'	3.75	7.7
EW-17	72"	SEE S	HOREMA		RT DETA	AIL
EW-18	36"	R-4	18"	16'	9	25
EW-19	15 <b>"</b>	R-5	27"	14'	3.75	17.2
EW-20	15 <b>"</b>	R-4	18"	12'	3.75	15.7
EW-21	15 <b>"</b>	N/A L	ESS TH	AN 1 FPS	S VELOC	ITY
EW-22	15 <b>"</b>	R-3	9"	8'	3.75	11.7
EW-23	15"	R-4	18"	10'	3.75	13.7
EW-24	15 <b>"</b>	R-5	27"	15'	3.75	18.7

ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.

STANDARD CONSTRUCTION DETAIL #9-1

RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.

ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED



SECTION B-B

FULL CHANNEL WIDTH (1 FT. MIN.)

ROCK FILTER NO.	LOCATION	D (FT)	RIPRAP SIZE (R)	FOR D $\geq$ 3 FT. — USE R-4 FOR D $\geq$ 2 FT. TO D < 3 FT. — L NOT APPLICABLE FOR D < 2 FT.
RF-1A	EW-1	3	R-3	
RF-1B	SWALE 29	2	R-3	
RF-1C	SWALE 28	2	R-3	
RF-2	ROAD CULVERT 1	6	R-4	
RF-3	SWALE 19	2	R-3	
RF-4	SWALE 21	2	R-3	
RF-5	SWALE 22	2	R-3	
RF-6	EW-21	2	R-3	
RF-7	EW-20	2	R-3	
RF-8	EW-11	2.5	R-3	

SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE HEIGHT OF THE FILTERS. IMMEDIATELY UPON STABILIZATION OF EACH CHANNEL, REMOVE ACCUMULATED SEDIMENT, REMOVE ROCK FILTER, AND STABILIZE DISTURBED AREAS.

STANDARD CONSTRUCTION DETAIL #4-14



NOT TO SCALE

| S | S |

REMAIN THE PROPERTY OF

H. EDWARD BLACK AND

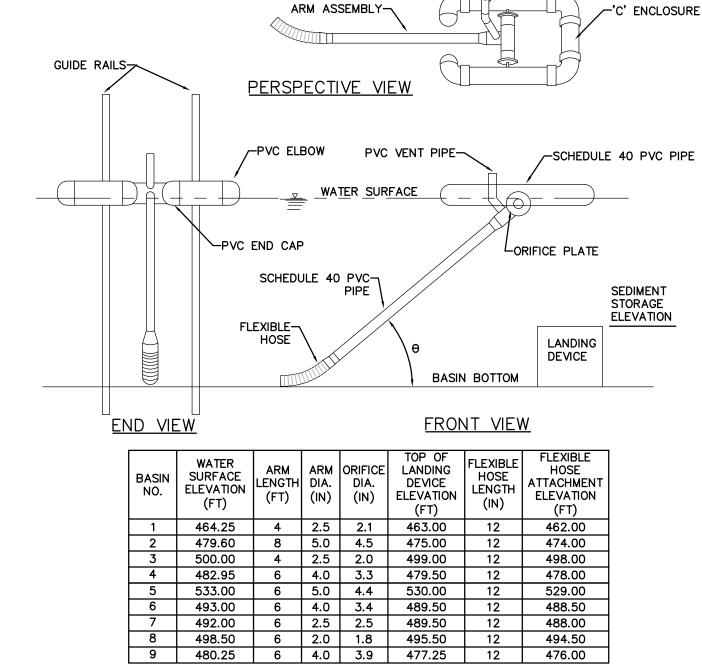
ANY OTHER PROJECT, OF

AT USER'S SOLE RISK AND H. EDWARD BLACK AND

ASSOCIATES, Ltd.

ALTERATIONS OR ADDITION: TO THIS PROJECT SHALL BE

ASSOCIATES, Ltd. ANY REUS



ORIFICE DIAMETER MUST BE EQUAL TO OR LESS THAN ARM DIAMETER

SKIMMER SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT

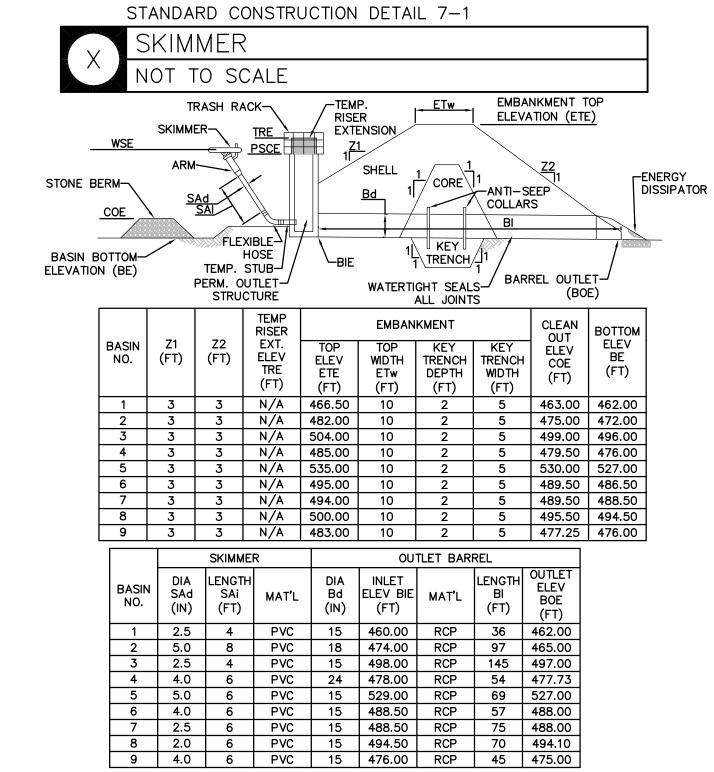
A ROPE SHALL BE ATTACHED TO THE SKIMMER ARM TO FACILITATE ACCESS TO THE SKIMMER ONCE INSTALLED.

ANY MALFUNCTIONING SKIMMER SHALL BE REPAIRED OR REPLACED WITHIN 24 HOURS OF INSPECTION. ICE OR SEDIMENT BUILDUP AROUND THE PRINCIPAL SPILLWAY SHALL BE REMOVED SO AS TO ALLOW THE SKIMMER TO

RESPOND TO FLUCTUATING WATER ELEVATIONS. SEDIMENT SHALL BE REMOVED FROM THE BASIN WHEN IT REACHES THE LEVEL MARKED ON THE SEDIMENT CLEAN-OUT

STAKE OR THE TOP OF THE LANDING DEVICE.

A SEMI-CIRCULAR LANDING ZONE MAY BE SUBSTITUTED FOR THE GUIDE RAILS (STANDARD CONSTRUCTION DETAIL # 7-3).



SEDIMENT BASINS, INCLUDING ALL APPURTENANT WORKS, SHALL BE CONSTRUCTED TO THE DETAIL AND DIMENSIONS SHOWN ON THE E&S PLAN DRAWINGS.

AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO A DEPTH OF TWO FEET PRIOR TO ANY PLACEMENT AND COMPACTION OF EARTHEN FILL. IN ORDER TO FACILITATE MAINTENANCE AND RESTORATION, THE POOL AREA SHALL BE CLEARED OF ALL BRUSH, TREES, AND OBJECTIONABLE MATERIAL. FILL MATERIAL FOR THE EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS. THE EMBANKMENT SHALL BE COMPACTED IN LAYERED LIFTS OF NOT MORE THAN 6 TO 9 IN. THE MAXIMUM ROCK SIZE SHALL BE NO GREATER THAN 2/3 THE LIFT THICKNESS.

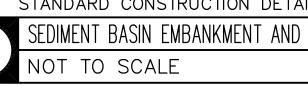
UPON COMPLETION, THE EMBANKMENT SHALL BE SEEDED, MULCHED, BLANKETED OR OTHERWISE STABILIZED ACCORDING TO THE SPECIFICATIONS OF THE E&S PLAN DRAWINGS. TREES SHALL NOT BE PLANTED ON THE EMBANKMENT.

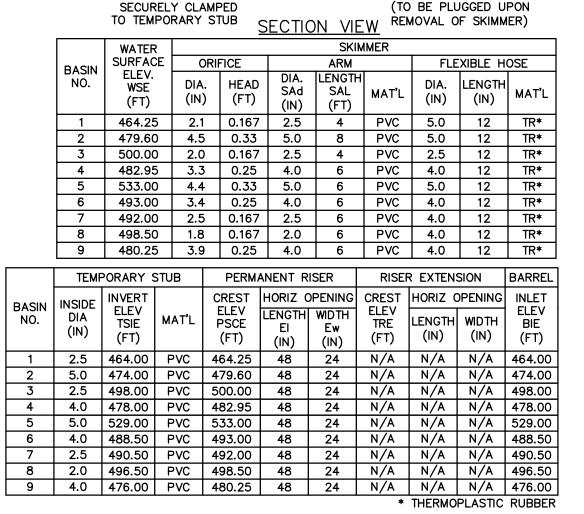
INSPECT ALL SEDIMENT BASINS ON AT LEAST A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. PROVIDE ACCESS FOR SEDIMENT REMOVAL AND OTHER REQUIRED MAINTENANCE ACTIVITIES. A CLEAN OUT STAKE SHALL BE PLACED NEAR THE CENTER OF EACH BASIN. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED THE CLEAN OUT ELEVATION ON THE STAKE AND THE BASIN RESTORED TO ITS ORIGINAL DIMENSIONS. DISPOSE OF MATERIALS REMOVED FROM THE BASIN IN THE MANNER DESCRIBED IN THE E&S PLAN.

BASIN EMBANKMENTS, SPILLWAYS, AND OUTLETS SHALL BE INSPECTED FOR EROSION, PIPING AND SETTLEMENT. NECESSARY REPAIRS SHALL BE IMMEDIATELY. DISPLACED RIPRAP WITHIN THE OUTLET ENERGY DISSIPATER SHALL BE

ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISTURBED AREAS SHALL BE STABILIZED INSIDE THE BASIN BEFORE CONVERSION TO A STORMWATER MANAGEMENT FACILITY. THE DEVICE SHOWN IN STANDARD CONSTRUCTION DETAIL #7-16 MAY BE USED TO DEWATER SATURATED SEDIMENT PRIOR TO ITS REMOVAL. ROCK FILTERS SHALL BE ADDED AS

STANDARD CONSTRUCTION DETAIL 7-4





PERMANENT-

STRUCTURE

FI FVATION

WATER SURFACE-

WATER ENTRY UNIT-

ARM (DEWATERING TUBE)-

AASHTO NO. 57

STONE

SKIMMER ARM-DIAMETER (SAd)

FLEXIBLE HOSE-

ELEVATION (WSE) AT

TOP OF DEWATERING

CLEAN-OUT ELEVATION (COE)

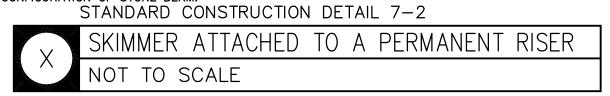
STONE BERM-

ALL ORIFICES ON PERMANENT RISER BELOW TEMPORARY RISER EXTENSION SHALL HAVE WATER—TIGHT TEMPORARY SEALS PROVIDED. TEMPORARY STUB INVERT ELEVATION SHALL BE SET AT OR BELOW SEDIMENT CLEAN-OUT ELEVATION.

A ROPE SHALL BE ATTACHED TO THE SKIMMER ARM TO FACILITATE ACCESS TO THE SKIMMER ONCE

SKIMMER SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. ANY MALFUNCTIONING SKIMMER SHALL BE REPAIRED OR REPLACED WITHIN 24 HOURS OF INSPECTION. ICE OR SEDIMENT BUILDUP AROUND THE PRINCIPAL SPILLWAY SHALL BE REMOVED SO AS TO ALLOW THE SKIMMER TO RESPOND TO FLUCTUATING WATER ELEVATIONS.

SEDIMENT SHALL BE REMOVED FROM THE BASIN WHEN IT REACHES THE LEVEL MARKED ON THE SEDIMENT CLEAN-OUT STAKE OR THE TOP OF THE STONE BERM. SEE STANDARD CONSTRUCTION DETAIL #7-3 FOR CONFIGURATION OF STONE BERM.



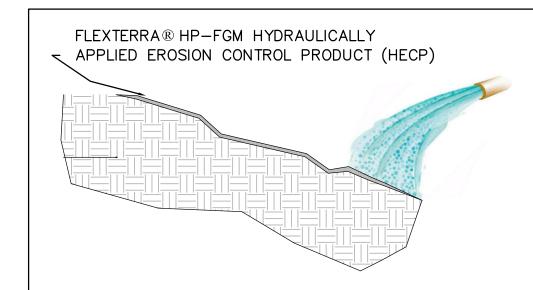
-TRASH RACK PERMANENT OUTLET-STRUCTURE -TEMPORARY RISER EXTENSION FLEXIBLE-HOSE AASHTO NO. 57 STONE FACILITY WATER ENTRY UNIT-PLAN VIEW

OUTLET BARREL-

NO GUIDE RAILS SHALL BE REQUIRED FOR THIS INSTALLATION.

THIS DETAIL SHALL BE USED IN CONJUNCTION WITH STANDARD CONSTRUCTION DETAILS #7-2 AND #7-4.





SPECIFICATION: 31 25 14.13 - High Performance-Flexible Growth Medium

This section specifies a hydraulically—applied, 100% biodegradable, High Performance—Flexible Growth Medium (HP-FGM) that is manufactured in the United States and is composed of 100% recycled thermally refined (within a pressure vessel) wood fibers, crimped interlocking man—made biodegradable fibers, micro—pore granules, naturally derived crosslinked biopolymers and water absorbents. The HP-FGM is phytosanitized, free from plastic netting, requires no curing period and upon application forms an intimate bond with the soil surface to create a continuous, porous, absorbent and flexible erosion resistant blanket that allows for rapid germination and accelerated plant growth. All components of the FGM shall be pre-packaged by the Manufacturer to assure both material performance and compliance with the following values. No chemical additives with the exception of fertilizer, liming and biostimulant materials should be added to this product.

1. Thermally Processed (within a pressure vessel) Wood Fiber  $-80\% \pm 3\%$ • Heated to a temperature greater than 380 degrees Fahrenheit (193 degrees Celsius) for 5 minutes at a pressure greater than 50 psi (345 kPa)

Crosslinked Biopolymers and Water Absorbents - 10%  $\pm$  1% Crimped, Man-made Biodegradable Interlocking Fibers  $-5\% \pm 1\%$ Micro-Pore Granules - 5 % ± 1%

## INSTALLATION

Strictly comply with equipment manufacturer's installation instructions and recommendations. Use approved hydro—spraying machines with fan—type nozzle (50—degree tip). To achieve optimum soil surface coverage, apply HP-FGM from opposing directions to soil surface. Rough surfaces (rocky terrain, cat tracks and ripped soils) may require higher application rates to achieve 100% cover. Slope interruption devices or water diversion techniques are recommended when slope lengths exceed 100 feet (30 m). Maximum slope length is for product applications on a 3H:1V slope. For application on steeper slopes, slope interruption lengths may need to be decreased based on actual site conditions. Not recommended for channels or areas with concentrated water flow. No chemical additives with the exception of fertilizer, liming and biostimulant materials should be added to this product: To ensure proper application rates, measure and stake area. For maximum performance, apply HP-FGM in a two-step process as follows:

1. Step One: Apply fertilizer with specified prescriptive agronomic formulations and 50% of seed with a small amount of HP—FGM for visual metering. 2. Step Two: Mix balance of seed and apply HP-FGM at a rate of 50 lb per 125 gallons (23 kg/475 liters) of water over freshly seeded surfaces. Confirm loading rates with equipment

manufacturer. Do not leave seeded surfaces unprotected, especially if precipitation is imminent.

APPLICATION RATES: These application rates are for standard conditions. Designers may wish to reduce rates to encourage faster vegetation establishment or may need to increase application rates on rough surfaces. Consult application and loading charts to determine number of bags to be added for desired area and application rate.

Slope Gradient / Condition	English	SI
≤ 4H to 1V	2500 lb/ac	2800 kg/ha
> 4H to 1V and ≤ 3H to 1V	3000 lb/ac	3400 kg/ha
≥ 3H to 1V and ≤ 2H to 1V	3500 lb/ac	3900 kg/ha
> 2H to 1V and ≤ 1H to 1V	4000 lb/ac	4500 kg/ha
> 1H to 1V	4500 lb/ac	5100 kg/ha
Below ECB or TRM	1500 lb/ac	1700 kg/ha
As infill for TRM	3500 lb/ac	3900 kg/ha
	•	•

-TEMP RISER EXTENSION ELEVATION (TRE)

WATER TIGHT SEALS ALL JOINTS

(NOT REQUIRED FOR THIS PROJECT)

WATER SURFACE

PERMANENT RISER STRUCTURE

STUB INLET ELEV. (TSIE)

∕BARREL INLET ⊈LEV. (BIE)

-TEMPORARY STUB

TEMPORARY RISER EXTENSION\*

— (NOT REQUIRED FOR THIS PROJECT)

SEE COMPREHENSIVE CSI FORMATTED SPECIFICATION FOR FURTHER DETAILS

PLEASE NOTE THAT THE INFORMATION PRESENTED HEREIN IS GENERAL INFORMATION ONLY. IT IS FOR CONCEPTUAL USE ONLY AND NOT INTENDED TO BE USED FOR CONSTRUCTION. WHILE EVERY EFFORT HAS BEEN MADE TO ENSURE ITS ACCURACY, THIS INFORMATION SHOULD NOT BE USED FOR A SPECIFIC APPLICATION WITHOUT INDEPENDENT PROFESSIONAL IECA EXAMINATION AND VERIFICATION OF ITS SUITABILITY, APPLICABILITY AND ACCURACY.

**Flexterra** 

FILE NAME: CAD Details Slope -Flexterra HP-FGM.dwg CONTACT NUMBER: 800-508-8681 WEB SITE: www.profileproducts.com

DRAWN BY: MDR

ur Trusted Partner In Soil Soluti

DATE: 06/14/10 SCALE: NOT TO SCALE SHEET 1 OF 1



**FLEXTERRA®** 

HP-FGM CAD

Details Slope

REMAIN THE PROPERTY OF

H. EDWARD BLACK AND

ASSOCIATES, Ltd. ANY REUS

ANY OTHER PROJECT. O

ALTERATIONS OR ADDITION:

TO THIS PROJECT SHALL BE

AT USER'S SOLE RISK AND

H. EDWARD BLACK AND

ASSOCIATES, Ltd.

66 OF 68

NOT TO SCALE

AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

FILL SLOPE TRACKED,

IN CRITICAL AREAS.

SEEDED AND MULCHED IN 15 FT. VERTICAL

INCREMENTS, BLANKETED

WELL VEGETATED, GRASSY AREA

**FOLLOWING STANDARDS:** 

PROPERTY

AVG. WIDE WIDTH STRENGTH

PUNCTURE

MULLEN BURST

UV RESISTANCE

AOS % RETAINED

<u>SECTION VIEW</u>

WELL VEGETATED, GRASSY AREA

HEAVY DUTY LIFTING STRAPS

DISCHARGE HOSE

(RECOMMENDED)

DISCHARGE HOSE

STANDARD CONSTRUCTION DETAIL #6-4

FILTER BAG

<u>PLAN VIEW</u>

FILTER BAG

**ELEVATION VIEW** 

ASTM D-4884

ASTM D-4632

ASTM D-4833

ASTM D-3786

ASTM D-4355

ASTM D-4751

LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH

STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE

TEST METHOD MINIMUM STANDARD

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL

ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.

THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE

MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE

MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.

BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION

NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST

RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEÓTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE

PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%. FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON-ERODIBLE

FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY

BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED

60 LB/IN

205 LB

110 LB

350 PSI

70%

80 SIEVE

TOP—OF—SLOPE BERM

STANDARD CONSTRUCTION DETAIL #3-16 JMPED WATER FILTER BAG

BASIN EMBANKMENT AND SPILLWAY DETAILS—SKIMMER

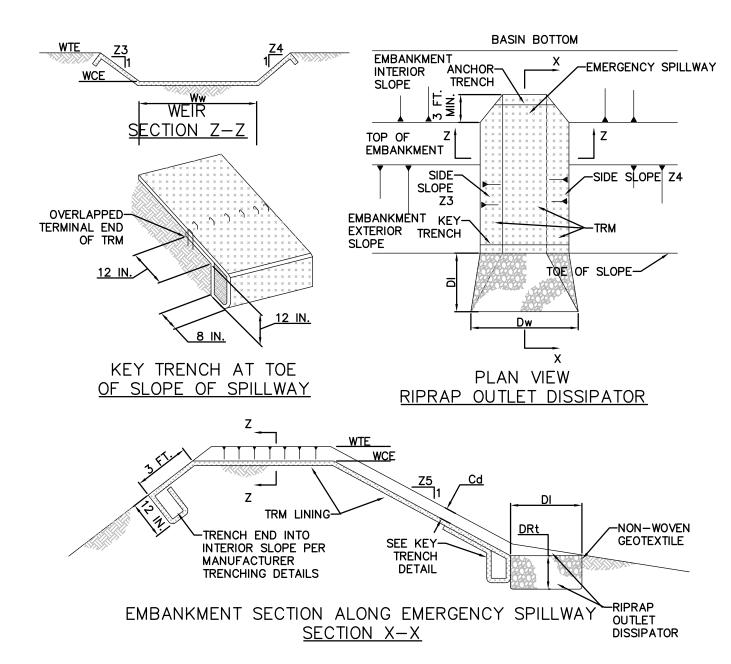
COMPACTED COMPACTED VIRGIN IN PLACE NEAT TO GROUND, 3000 PSI GROUND

CROSS-SECTION AT OUTLET BARREL

A CONCRETE CRADLE MAY BE USED IN CONJUNCTION WITH ANTI-SEEP COLLARS AND/OR FILTER DIAPHRAGM. ANTI-SEEP COLLAR NUMBER, SIZE AND SPACING SHALL BE AS SHOWN ELSEWHERE IN PLAN. FILTER DIAPHRAGM LOCATION (Lfd) SHALL BE AS SHOWN IN FIGURE 7.8 OF THE PA DEP EROSION CONTROL MANUAL.

STANDARD CONSTRUCTION DETAIL 7-17

CONCRETE CRADLE FOR BASIN OR TRAP OUTLET BARREI



		WEIR					LINING		CHANNEL		DISSIPATOR			
BASIN NO.	Z3 (FT)	Z4 (FT)	TOP ELEV WTE (FT)	CREST ELEV WCE (FT)	WIDTH Ww (FT)	TRM TYPE	STAPLE PATTERN	Z5 (FT)	DEPTH Cd (FT)	LENGTH DI (FT)	WIDTH Dw (FT)	RIPRAP SIZE (R)	RIPRAP THICK. DRt (IN)	
1	3	3	466.50	464.90	50	SC250	E	3	1	10	6	R-3	9.0	
2	3	3	482.00	480.59	150	SC250	E	3	1	10	6	R-3	9.0	
3	3	3	504.00	502.50	80	SC250	E	3	1	10	6	R-3	9.0	
4	3	3	485.00	483.45	61	P550	E	3	1	10	6	R-3	9.0	
5	3	3	535.00	533.25	70	P300	E	3	1	10	6	R-3	9.0	
6	3	3	495.00	492.30	125	SC250	E	3	1	10	6	R-3	9.0	
7	3	3	494.00	492.50	33	P300	E	3	1	10	6	R-3	9.0	
8	3	3	500.00	498.75	20	S75BN	D	13.33	1	*	*	*	*	
9	3	3	483.00	481.50	100	P300	E	3	1	10	6	R-3	9.0	

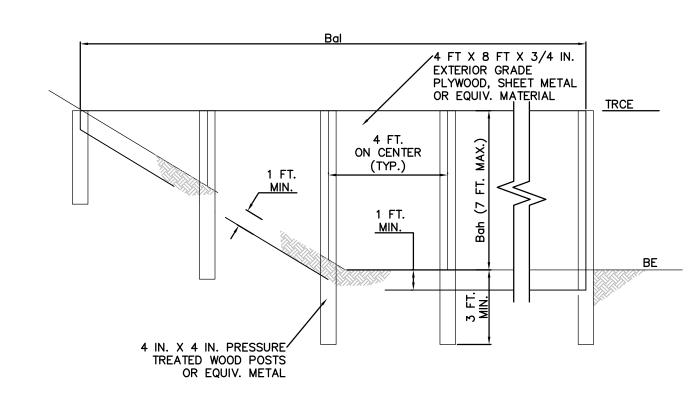
\* NO DISSIPATOR REQUIRED VELOCITY LESS THAN 2 FPS.

NOTES:

HEAVY EQUIPMENT SHALL NOT CROSS OVER SPILLWAY WITHOUT PRECAUTIONS TAKEN TO PROTECT TRM LINING. DISPLACED LINER WITHIN THE SPILLWAY AND/OR OUTLET CHANNEL SHALL BE REPLACED IMMEDIATELY. RIPRAP AT TOE OF EMBANKMENT SHALL BE EXTENDED A SUFFICIENT LENGTH IN BOTH DIRECTIONS TO PREVENT

THE USE OF BAFFLES THAT REQUIRE SUPPORT POSTS ARE RESTRICTED FROM USE IN BASINS REQUIRING IMPERVIOUS LINERS.

STANDARD CONSTRUCTION DETAIL 7-13 SEDIMENT BASIN EMERGENCY SPILLWAY WITH TRM LINER NOT TO SCALE



TEMPORARY RISER

(FT)

ELEV

SEE APPROPRIATE BASIN DETAIL FOR PROPER LOCATION AND ORIENTATION.

OR TRAP

NO.

AN ACCEPTABLE ALTERNATIVE IS TO INSTALL A SUPER SILT FENCE AT THE BAFFLE LOCATION

BAFFLE

LENGTH HEIGHT CREST ELEV. |

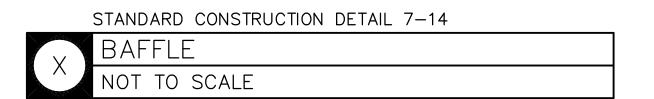
6 110 4.50 493.00 488.50

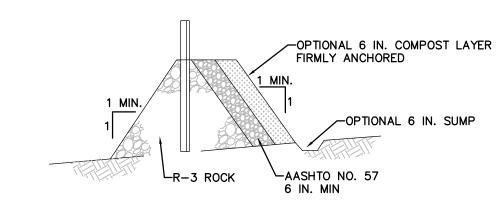
(FT)

IN POOLS WITH DEPTHS EXCEEDING 7', THE TOP OF THE PLYWOOD BAFFLE DOES NOT NEED TO EXTEND TO THE TEMPORARY RISER CREST. SUPER SILT FENCE BAFFLES NEED NOT EXTEND TO TRCE ELEVATION. BAFFLES SHALL BE TIED INTO ONE SIDE OF THE BASIN UNLESS OTHERWISE SHOWN ON THE PLAN DRAWINGS.

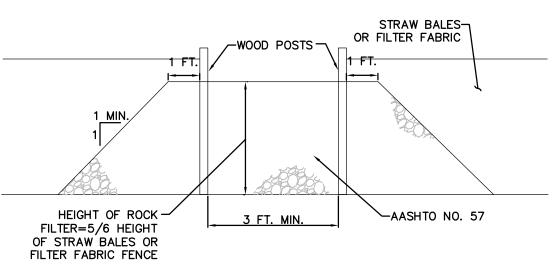
SUBSTITUTION OF MATERIALS NOT SPECIFIED IN THIS DETAIL SHALL BE APPROVED BY THE DEPARTMENT OR THE LOCAL CONSERVATION DISTRICT BEFORE INSTALLATION. DAMAGED OR WARPED BAFFLES SHALL BE REPLACED WITHIN 7 DAYS OF INSPECTION.

BAFFLES REQUIRING SUPPORT POSTS SHALL NOT BE INSTALLED IN BASINS REQUIRING IMPERVIOUS LINERS.





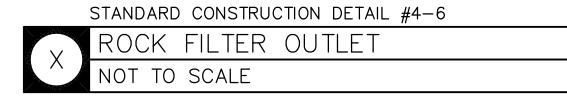
OUTLET CROSS-SECTION



<u>UP-SLOPE FACE</u>

A ROCK FILTER OUTLET SHALL BE INSTALLED WHERE FAILURE OF A SILT FENCE OR STRAW BALE BARRIER HAS OCCURRED DUE TO CONCENTRATED FLOW. ANCHORED COMPOST LAYER SHALL BE USED ON UPSLOPE FACE IN HQ AND EV WATERSHEDS.

SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH 1/3 THE HEIGHT OF THE OUTLET.



REMAIN THE PROPERTY OF
H. EDWARD BLACK AND
ASSOCIATES, Ltd. ANY REUSE
ON PROJECT EXTENSIONS,
ANY OTHER PROJECT, OR
ALTERATIONS OR ADDITIONS

TO THIS PROJECT SHALL BE AT USER'S SOLE RISK AND WITHOUT LIABILITY TO

H. EDWARD BLACK AND ASSOCIATES, Ltd.

NOTES: SEE SECTION DETAIL NO. 4 REBAR \_\_\_\_1 IN X 1 IN X 1/8 IN ANGLE (TYP) CONCRETE BOX SECTION DETAIL

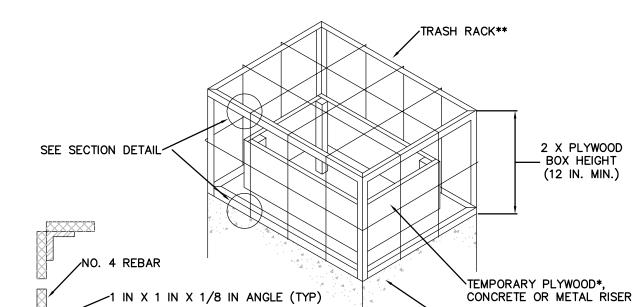
PROVIDE \\_\_\_\_\_ WATERTIGHT CONNECTION 12 IN. THICK (MIN.) CAST-IN-PLACE OR PRECAST CONCRETE COLLAR (MIN. 2000 PSI)

			·		
BASIN OR TRAP NO.	PIPE SIZE (IN)	S (IN)	NO. OF COLLARS	RISER TO FIRST COLLAR (FT)	COLLA SPACI (FT)
1	15	70	2	12	6
2	18	164	2	18	6
3	15	54	1	17	N/A
4	24	92	1	15	N/A
5	15	58	2	14	6
6	30	48	2	13	6
7	15	67	1	14	N/A
8	15	72	1	17	N/A
9	15	40	1	15	N/A

ALL COLLARS SHALL BE INSTALLED SO AS TO BE WATERTIGHT. COLLAR SIZE AND SPACING SHALL BE AS INDICATED WITHIN TABLE.

STANDARD CONSTRUCTION DETAIL 7-16

CONCRETE ANTI-SEEP COLAR FOR PERMANENT BASINS OR TRAPS



\* 3/4 IN. PRESSURE TREATED PLYWOOD BOX WITH 2 IN. X 2 IN. PRESSURE TREATED CORNER SUPPORTS, SET INTO 1-1/2 IN. GRATE OFFSETS, CAULK ALL SEAMS TO FORM WATERTIGHT SEALS.

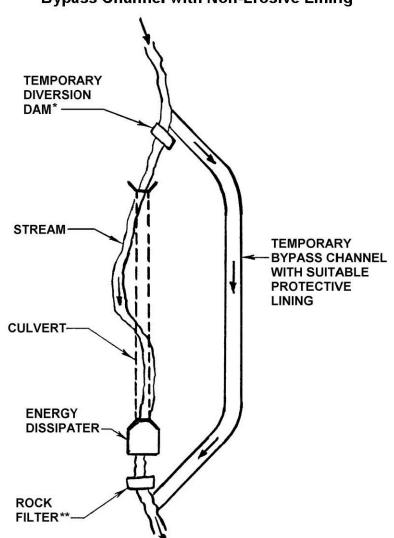
\*\* TRASH RACK COMPOSED OF 1 IN. X 1 IN. X 1/8 IN. L (TYP.) AND #4 BARS (TYP.) WELDED TO THE ANGLES AND AT EACH INTERSECTION OF THE BARS; #4 BARS SPACED AT HALF THE DIAMETER OF THE BARREL MAX.

PERMANENT STRUCTURE

STANDARD CONSTRUCTION DETAIL 7-10

TEMPORARY EXTENSION RISER AND TRASH RACK FOR PERMANENT STRUCTURE NOT TO SCALE

> FIGURE 3.9 Bypass Channel with Non-Erosive Lining TEMPORARY DIVERSION



YPICAL ROADWAY STREAM CROSSING NOT TO SCALE

THIS DRAWING IS AND SHALL
REMAIN THE PROPERTY OF
H. EDWARD BLACK AND
ASSOCIATES, Ltd. ANY REUSE
ON PROJECT EXTENSIONS,
ANY OTHER PROJECT, OR
ALTERATIONS OR ADDITIONS
TO THIS PROJECT SHALL BE

AT USER'S SOLE RISK AND
WITHOUT LIABILITY TO
H. EDWARD BLACK AND
ASSOCIATES, Ltd.