PRELIMINARY/FINAL LAND DEVELOPMENT PLAN

LVIP VII - LOT 63

WARD 16
CITY OF BETHLEHEM
NORTHAMPTON COUNTY
PENNSYLVANIA

Record Notes

1. PUSH HOLDINGS, INC. IS THE DEVELOPER FOR THE PROJECT.

2. THE LOT SHOWN IS SUBJECT TO ALL EASEMENTS VISIBLE, OR ON RECORD, OR AS REQUIRED BY A UTILITY TO SERVE SAID LOT AT SUCH TIME AS THE UTILITY IS INSTALLED.

3. ALL PUBLIC IMPROVEMENTS IN THIS PROJECT SHALL BE CONSTRUCTED TO THE STANDARDS OF THE CITY OF BETHLEHEM, THE PENNSYLVANIA DEPARTMENT OF TRANSPORTATION AND THE APPROPRIATE PUBLIC UTILITY AUTHORITIES, UNLESS SAID IMPROVEMENTS ARE APPROVED OTHERWISE.

4. THE DEVELOPER SHALL BE RESPONSIBLE FOR THE PLACEMENT OF ALL STREET IDENTIFICATION AND TRAFFIC SIGNS AS DEEMED NECESSARY BY THE CITY. PLACEMENT SHALL COMPLY WITH ALL CITY STANDARDS REGARDING LOCATION, HEIGHT, SIZE AND TYPE.

5. EXISTING UTILITY POLES REQUIRED TO BE RELOCATED FOR CONSTRUCTION OF IMPROVEMENTS SHALL BE RELOCATED IN ACCORDANCE WITH ALL UTILITY COMPANY, CITY AND PENNDOT REGULATIONS AND SPECIFICATIONS.

6. IN ACCORDANCE WITH THE NATIONAL FLOOD INSURANCE PROGRAM, FIRM (FLOOD INSURANCE RATE MAP), FOR THE CITY OF BETHLEHEM, NORTHAMPTON COUNTY, COMMUNITY PANEL NUMBERS 42095C0263E, EFFECTIVE DATE JULY 16, 2014, THE PROJECT SITE IS LOCATED IN THE ZONE "X" AREA OF MINIMAL FLOOD HAZARD.

7. SINKHOLE REPAIRS AND CLOSURES SHALL BE COMPLETED IN ACCORDANCE WITH THE DETAILS PROVIDED ON THE PROJECT DRAWINGS.

8. THE SANITARY SEWER LATERALS ARE PROPOSED TO BE PRIVATELY OWNED.

9. NO UTILITY WILL BE ACCEPTED BY THE CITY WITH A STRUCTURE OR REMNANT THEREOF ON TOP OF THE UTILITY. NO STRUCTURE SHOULD BE CONSTRUCTED OVER ANOTHER UTILITY.

10. ALL ELECTRICAL WORK WILL REQUIRE AN ELECTRICAL PERMIT AND A "PPL" JOB REQUEST NUMBER. DEVELOPER MUST FOLLOW CITY OF BETHLEHEM'S REQUIREMENTS FOR PARKING LOT AREA LIGHTING. POLE HEIGHTS MAY NOT BE GREATER THAN 20 FEET. ANY ARTIFICIAL LIGHT MUST NOT INFRINGE ON ADJACENT PROPERTY. ALL LIGHT FIXTURES SHALL HAVE A CUT OFF DESIGN THAT AIMS LIGHT DIRECTLY DOWNWARD.

11. AT THE TIME OF ANY FUTURE EXPANSION THE DESIGNER SHALL VERIFY AND PROVIDE ANY FEATURES NECESSARY TO ASSURE THAT THE DOWNSTREAM STORM SYSTEM HAS ADEQUATE CONVEYANCE CAPACITY AND MEETS CITY OF BETHLEHEM STANDARDS.

12. THE OWNER SHALL INSTALL KNOX BOX FOR CITY OF BETHLEHEM FIRE DEPARTMENT ACCESS.

13. ALL APPROVED AUDIBLE DEVICES SHALL BE CONNECTED TO EVERY AUTOMATIC SPRINKLER SYSTEM. SUCH SPRINKLER WATERFLOW ALARM DEVICES SHALL BE ACTIVATED BY WATERFLOW EQUIVALENT TO THE FLOW OF A SINGLE SPRINKLER OF THE SMALLEST ORIFICE SIZE INSTALLED IN THE SYSTEM. ALARM DEVICES SHALL BE PROVIDED ON THE EXTERIOR OF THE BUILDING IN AN APPROVED LOCATION. WHERE A FIRE ALARM SYSTEM IS INSTALLED, ACTUATION OF THE AUTOMATIC SPRINKLER SYSTEM SHALL ACTUATE THE BUILDING FIRE ALARM SYSTEM. IN AUTOMATIC SPRINKLER SYSTEMS WHERE MULTIPLE SPRINKLER RISERS ARE REQUIRED, AND THE RISERS ARE LOCATED IN SEPARATE AREAS WITHIN THE BUILDING, AN OUTSIDE VISIBLE ALARM NOTIFICATION APPLIANCE SHALL BE REQUIRED FOR EACH RISER. SUCH APPLIANCE SHALL BE A WHITE STROBE (MINIMUM 95 CANDELA STROBE RATING) PLACED IN AN APPROVED LOCATION ON THE EXTERIOR WALL, AS CLOSE AS PRACTICABLE, TO EACH SPRINKLER RISER. THE STROBE WILL ACTIVATE WHEN THE WATER FLOW ALARM FOR ITS RESPECTIVE RISER IS ACTIVATED. (ORD. 2014-21 – PASSED 8/5/14)

14. THE SUBJECT PARCEL WAS PREVIOUSLY DEVELOPED AS THE BETHLEHEM STEEL AND PRIOR TO THE SUBDIVISION THE PROPERTY WAS SLAG AND SHALL BE CONSIDERED IMPERVIOUS AREA. THUS, NO NEW IMPERVIOUS COVERAGE IS PROPOSED.

15. PROPOSED MONUMENT SIGN LOCATION AND SIZE SHALL CONFORM WITH THE CITY'S ZONING ORDINANCE AND LVIP COVENANTS AND WILL REQUIRE A PERMIT FROM THE CITY PRIOR TO CONSTRUCTION.

16. ANY CHANGE IN THE LOCATION OF THE FIRE DEPARTMENT CONNECTION (FDC) SHALL BE APPROVED BY THE CITY OF BETHLEHEM FIRE DEPARTMENT.

17. TRUCKS ARE NOT PERMITTED TO PARK, WAIT FOR ENTRY, OR IDLE ON COMMERCE CENTER BOULEVARD.

18. THE PROPOSED ELEVATIONS HAVE BEEN PROVIDED FOR THE PROPOSED RETAINING WALLS FOR THE PROJECT. THE CONTRACTOR SHALL PROVIDE ENGINEERED DRAWINGS TO THE CITY OF BETHLEHEM BUILDING DEPARTMENT FOR APPROVAL PRIOR TO CONSTRUCTION.

NPDES Note

BY SUBMISSION OF THESE PLANS THE ENGINEER ON RECORD CERTIFIES THAT THESE PLANS ARE IN COMPLETE CONFORMANCE WITH THE CITY OF BETHLEHEM STORM WATER MANAGEMENT ORDINANCE.

As-Built Note

ACCURATE AS-BUILT PLANS SHALL BE KEPT UP TO DATE DURING THE CONSTRUCTION PROCESS. AT THE COMPLETION OF THE PROJECT, RECORD DRAWINGS SHALL BE DEVELOPED FROM AS-BUILT PLANS AND SUBMITTED TO THE CITY ENGINEER'S OFFICE. ALL FINAL DRAWINGS SHALL SHOW NORTH AMERICAN DATUM(NAD) 1983 STATE PLANE COORDINATES IN FEET (PENNSYLVANIA SOUTH, FIPS ZONE 3702) AND THE DIGITAL FILE SHALL BE IN STATE PLANE FEET COORDINATES AS APPLICABLE. THE HARD COPY OF THE RECORD DRAWINGS SHALL BE IN FORM OF MYLAR COPY. THE ENGINEER OF RECORD SHALL CERTIFY(I.E. P.E. STAMPED AND SIGNED) THAT THE RECORD DRAWINGS COMPLY SUBSTANTIALLY WITH THE APPROVED PLAN AND THAT THEY CONFORM TO INDUSTRY STANDARDS. ALL DIGITAL FILES SHALL RESIDE ON PC COMPATIBLE CD ROM CONTAINING THE DIGITAL REPRESENTATION OF THE FINAL PLAN AS PRESENTED ON THE TWENTY-FOUR (24) INCH BY THIRTY-SIX (36) INCH SHEETS. THE DIGITAL MAP SHALL BE AUTOCAD COMPATIBLE. ALL LAYERS INCLUDED IN THE DIGITAL MAPS SHALL BE THE STANDARDIZED LAYERS PREPARED AND UTILIZED BY THE CITY OF BETHLEHEM TO ENSURE COMPATIBILITY WITH THE CITY'S EXISTING CADD STANDARDS AND AS DESCRIBED IN APPENDIX A OF THE CITY'S SUBDIVISION AND LAND DEVELOPMENT ORDINANCE.

Revisions Note

IN ORDER TO MAINTAIN CONTINUITY BETWEEN PLAN REVISIONS, ANY CHANGES TO A PREVIOUS PLAN SUBMISSION SHALL BE FLAGGED WITH A TRIANGLE. ANY CHANGES NOT FLAGGED MAY BE CONSIDERED NOT APPROVED. FLAGGED CHANGES SHALL BE REFERENCED TO THE APPROPRIATE REVISION DATE IN THE REVISION BLOCK.

Engineering Permits Note

PRIOR TO ANY WORK WITHIN THE RIGHT-OF-WAY, PERMITS MUST BE OBTAINED FROM CITY ENGINEERING OFFICE.

Stormwater Notes

1. THE MAINTENANCE OF STORM WATER FACILITIES NOT DEDICATED TO AND ACCEPTED BY THE CITY, SHALL BE THE OWNER'S RESPONSIBILITY. THE OWNER'S DEED, AND THE DEED TO ANY SUBSEQUENT OWNER, SHALL NOTE THAT THE OWNER SHALL ACCEPT THE MAINTENANCE RESPONSIBILITIES. THE CITY OF BETHLEHEM SHALL BE PERMITTED TO INSPECT THE STORM WATER FACILITIES ON AT LEAST AN ANNUAL SCHEDULE TO ENSURE THAT ANY NECESSARY CORRECTIVE WORK IS PERFORMED IN A TIMELY MANNER.

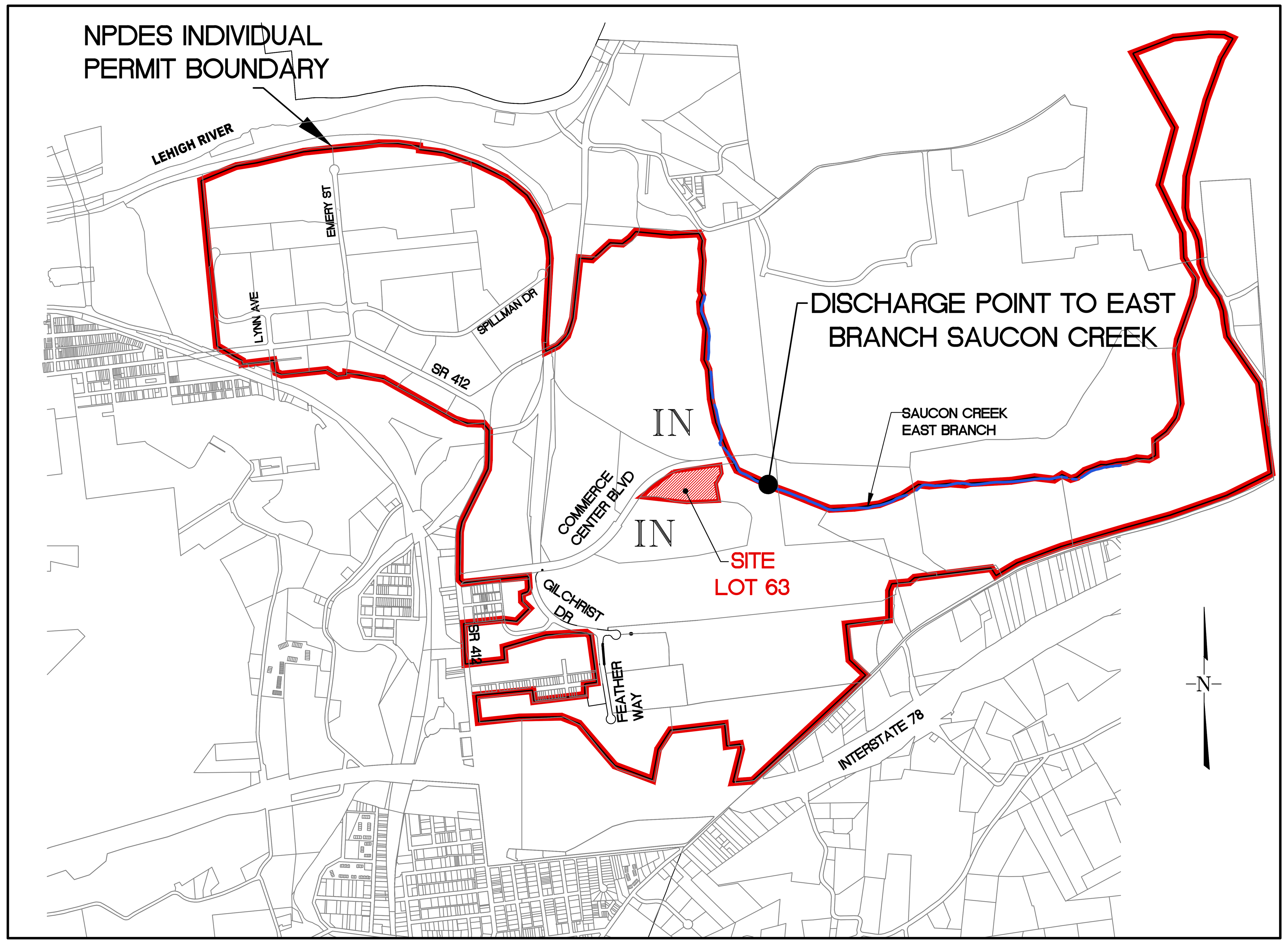
2. THE DRAINAGE EASEMENT PROVIDES FOR THE FLOW OF STORMWATER ACROSS LOTS, AND MAY NOT BE ALTERED WITHOUT THE WRITTEN PERMISSION OF THE CITY ENGINEER. NO OBSTRUCTIONS SUCH AS PLANTING BERMS OR FENCES MAY BE INSTALLED IN THE DRAINAGE EASEMENTS AREAS WITHOUT SUFFICIENT PROVISION FOR THE PASSAGE OF STORMWATER, AND ANY SUCH PROPOSED PROVISION SHALL BE APPROVED IN WRITING BY THE CITY ENGINEER.

Inlet Marker Note

ALL PUBLIC INLETS SHOULD HAVE INLET MARKERS. THE DESIGN OF THE INLET MARKERS SHALL BE APPROVED BY THE CITY ENGINEER.

Building Stakeout Note

THE BUILDING FOOTPRINT SHALL BE VERIFIED WITH THE ARCHITECT PRIOR TO STAKEOUT.



Location Map
SCALE: 1" = 1,000'

AT THE MEETING ON ____________ __, 2022, THE BETHLEHEM CITY PLANNING COMMISSION, BETHLEHEM, PENNSYLVANIA, DULY ENACTED AND APPROVED THIS PLAN OF THE PROPERTY LOT 63, LVIP VII LOCATED IN NORTHAMPTON COUNTY AS SHOWN HEREIN.

____
CHAIRMAN

____
SECRETARY

REVIEWED BY THE LEHIGH VALLEY PLANNING COMMISSION FOR LEHIGH AND NORTHAMPTON COUNTIES.

_________________________________ ______________
LVPC STAFF PERSON RESPONSIBLE FOR REVIEW DATE

THIS PLAN WAS RECORDED IN THE OFFICE OF THE RECORDER OF DEEDS FOR NORTHAMPTON COUNTY, ON_______________IN PLAN BOOK______, PAGE______.

Owner Signature:

PUSH HOLDING, INC.

COMMONWEALTH OF PENNSYLVANIA)
) SS:
COUNTY OF NORTHAMPTON)

I, ___________________________ OF ______________________________
NAME CORPORATION NAME

BEING DULY SWORN ACCORDING TO LAW, AND ACTING IN MY CAPACITY AS ______________ DEPOSE AND SAY THAT THE ABOVE NAMED CORPORATION IS THE TRUE AND LAWFUL OWNER OF PROPERTY KNOWN AS __________________ __________________; THAT THE ABOVE DESCRIBED PROPERTY IS IN THE PEACEFUL POSSESSION OF SAID CORPORATION AND THAT THERE ARE NO LIENS PENDING AFFECTING THE TITLE THEREOF.

PUSH HOLDING, INC.
____
CORPORATION

____
CORPORATION OFFICIAL

SWORN AND SUBSCRIBED TO BEFORE ME THIS ___ DAY OF __________, ____

____
NOTARY PUBLIC

MY COMMISSION EXPIRES ON ______________________.

Land Development Plans

1 COVER SHEET – (RECORD PLAN 1 OF 2)
2 RECORD PLAN (2 OF 2)
3 EXISTING FEATURES AND DEMOLITION PLAN
4 GRADING & UTILITY PLAN
5 CURB GRADE PLAN
6 PROFILE PLAN
7 LANDSCAPE PLAN AND DETAILS
8 LIGHTING PLAN AND DETAILS
9 POST CONSTRUCTION STORMWATER MANAGEMENT PLAN
10 EROSION & SEDIMENTATION CONTROL PLAN
11 EROSION & SEDIMENTATION CONTROL DETAIL SHEET
12 EROSION & SEDIMENTATION CONTROL DETAIL SHEET
13 CONSTRUCTION DETAIL SHEET
14 CONSTRUCTION DETAIL SHEET

Supplemental Plans

VEHICLE MOVEMENT EXHIBIT – 1 OF 1

RAIL SPUR DESIGN PLANS – 1 OF 2 AND 2 OF 2

Site Data

PARCELS: P7 – 22 – 2-4G-1 — 7.50 ACRES / 326,735 S.F.
PARENT SUBDIVISION PLAN: BOOK 2019-5, PAGE 522 RECORDED SEPTEMBER 10,2019
WARD: 16
TAX MAP REFERENCED: MAP P7, BLOCK 22 LOT 2-4G-1
DEED REFERENCED: 2004-1-209584
ZONING DISTRICT: IN (INDUSTRIAL)
EXISTING USE: VACANT LOT
PROPOSED USE: WAREHOUSE/MANUFACTURING (INDUSTRIAL USE)
MANUFACTURING (PRINCIPAL USE)
WAREHOUSE (ACCESSORY USE) △1
WATER: PUBLIC
SEWER: PUBLIC

	REQUIRED/ALLOWED IN DISTRICT	ALLOWED BY LVIP COVENANTS	PROPOSED LOT 63
MINIMUM DEVELOPMENT AREA:	1 AC.	N/A	7.50 ACRES
MAXIMUM BUILDING COVERAGE:	65%	70%	41.62%
MAXIMUM BUILDING HEIGHT:	80 FT	N/A	44 FT.
△1 MINIMUM LOT WIDTH:	150 FT	N/A	1,120 FT.
IMPERVIOUS COVERAGE	90%	90%	72.01 % (235,291 S.F.)
SETBACKS:			
FRONT YARD:	20 FT	50 FT	30.0 FT * △1
REAR YARD:	15 FT	15 FT	44.5 FT.
SIDE YARD:	15 FT	15 FT	68.5 FT
PARKING SETBACKS:			
FRONT YARD:	△1	25 FT	37.9 FT
REAR YARD:		5 FT	N/A FT
SIDE YARD:		5 FT	43.2 FT
PARKING REQUIREMENTS:			
MINIMUM SIZE:	9' X 18'		9' X 18'

△1 SPACES REQUIRED:
MANUFACTURING ESTABLISHMENT

1 SP./1.5 EMP AT MAX. NUMBER AT ONE SHIFT PLUS 1 SP. FOR EACH 10,000 S.F. OF GROSS FLOOR AREA.

126 EMP./1.5 = 84 SPACES
136,000/10,000 = 14 SPACES
TOTAL REQUIRED SPACES = 98

TOTAL SPACES REQUIRED:	98 SPACES	
ACCESSIBLE PARKING:	5 SPACES	5 SPACES
TOTAL SPACES PROVIDED:		98 SPACES
BICYCLE PARKING	5 SPACES	5 SPACES
BUILDING COVERAGE:	136,000 SF.	

TOTAL 326,735 SF. OR 7.50 AC.
(136,000 SF./ 326,735 SF.=41.62%)

△1 * LVIP BUILDING COMMITTEE GRANTED RELIEF TO ALLOW THE BUILDING TO ENCROACH INTO THE REQUIRED FRONT YARD SETBACK WITHIN THEIR CONSTRAINTS.

Benchmarks for this Plan

1. NE CORNER (SQUARE CUT) OF A CONCRETE PPL VAULT (66961S47176) ON THE SOUTH SIDE OF COMMERCE CENTER BLVD NEAR THE WEST SIDE OF GILCHRIST DRIVE.
ELEV=263.38

2. TOP NUT OF FIRE HYDRANT, JUST SOUTH OF HARVARD AVE, ON THE SOUTH SIDE OF GILCHRIST DR.
ELEV=299.60

3. TOP NUT OF FIRE HYDRANT, EAST OF FEATHER WAY, ON SOUTH SIDE OF GILCHRIST DR. MARKED AS L7089
ELEV=316.16

4. NW CORNER (SQUARE CUT OF A CONCRETE PPL VAULT(67062S47058) ON THE EAST SIDE OF FEATHER WAY, JUST NORTH OF THE CURTIS WRIGHT BUILDING.
ELEV=344.36

Know what's at stake™ Call 811 BEFORE YOU DIG

"CALL BEFORE YOU DIG"

PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE – STOP CALL

PENNSYLVANIA ONE CALL SYSTEM, INC.
1-800-242-1776

THIS PROJECT'S DESIGNER INQUIRY NO.
20212924212

PROJECT /	SERIAL NUMBERS/	EXCAVATION-DEMOLITION /	TYPE OF ONE CALL /	DATE /	ADDRESS /	NEAREST INT. /	TOWNSHIP /	COUNTY
4920	20212924212	EXCAVATION	ROUTINE	10/26/2021	COMMERCE CENTER BLVD	GILCHRIST DR	CITY OF BETHLEHEM	NORTHAMPTON

Statement of Intent

TO CONSTRUCT A MANUFACTURING FACILITY WITH WAREHOUSING ASSOCIATED PARKING AND INFRASTRUCTURE.

Plan Preparer

HanoverEngineering
Bethlehem Office
252 Brodhead Road, Suite 100 P:610.691.5644
Bethlehem, PA 18017-8944 F:610.691.6968
HanoverEng.com

Owner

LVIP, INC
1720 SPILLMAN DRIVE
BETHLEHEM, PA 18015
PHONE 610.866.4600

Equitable Owner/ Applicant

PUSH HOLDING, INC.
9005 SMITH'S MILL ROAD
NEW ALBANY, OH 43054
PHONE 614.706.5933

Site Address

2680 COMMERCE CENTER BLVD.
BETHLEHEM, PA 18015

PRELIMINARY/FINAL LAND DEVELOPMENT
(RECORD PLAN 1 OF 2)

DRAWN BY:	CHECKED BY:
DM	AB
SCALE: 1"=1000'	DATE: 3/01/22

PROJECT NO. 4920

SHEET NO. 01 OF 14

NO.	REVISIONS	DATE
1	PER CITY COMMENT LETTER	6/06/22

SEAL: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER ANDREW THOMAS BOHL PE062856

PLAN TITLE: COVER SHEET

PROJECT TITLE: LVIP VII – LOT 63
2680 COMMERCE CENTER BLVD.

1000 0 500 1000 2000 4000
1" = 1000

CITY OF BETHLEHEM
NORTHAMPTON COUNTY
PENNSYLVANIA

HanoverEngineering
Bethlehem Office
252 Brodhead Road, Suite 100 P:610.691.5644
Bethlehem, PA 18017-8944 F:610.691.6968
HanoverEng.com

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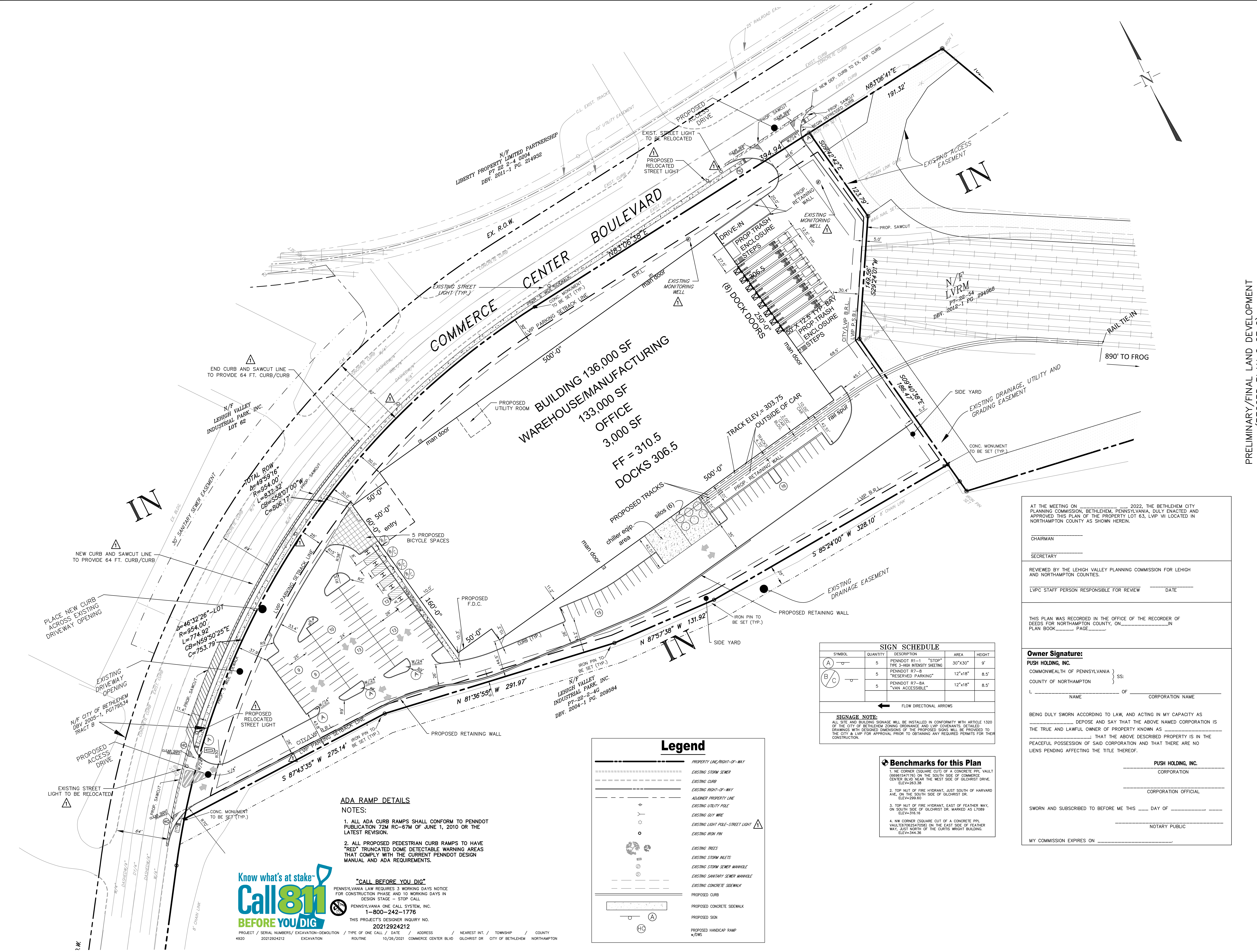

ADA RAMP DETAILS

NOTES:

1. ALL ADA CURB RAMPS SHALL CONFORM TO PENNDOT PUBLICATION 72M RC-67M OF JUNE 1, 2010 OR THE LATEST REVISION.

2. ALL PROPOSED PEDESTRIAN CURB RAMPS TO HAVE "RED" TRUNCATED DOME DETECTABLE WARNING AREAS THAT COMPLY WITH THE CURRENT PENNDOT DESIGN MANUAL AND ADA REQUIREMENTS.

Know what's at stake™ Call 811 BEFORE YOU DIG

"CALL BEFORE YOU DIG"

PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE – STOP CALL

PENNSYLVANIA ONE CALL SYSTEM, INC.

1-800-242-1776

THIS PROJECT'S DESIGNER INQUIRY NO.

20212924212

PROJECT	SERIAL NUMBERS	EXCAVATION–DEMOLITION	TYPE OF ONE CALL	DATE	ADDRESS	NEAREST INT.	TOWNSHIP	COUNTY
4920	20212924212	EXCAVATION	ROUTINE	10/26/2021	COMMERCE CENTER BLVD	GILCHRIST DR	CITY OF BETHLEHEM	NORTHAMPTON

Legend

	PROPERTY LINE/RIGHT-OF-WAY
	EXISTING STORM SEWER
	EXISTING CURB
	EXISTING RIGHT-OF-WAY
	ADJOINER PROPERTY LINE
	EXISTING UTILITY POLE
	EXISTING GUY WIRE
☼	EXISTING LIGHT POLE–STREET LIGHT △1
○	EXISTING IRON PIN
	EXISTING TREES
	EXISTING STORM INLETS
	EXISTING STORM SEWER MANHOLE
	EXISTING SANITARY SEWER MANHOLE
	EXISTING CONCRETE SIDEWALK
	PROPOSED CURB
	PROPOSED CONCRETE SIDEWALK
(A)	PROPOSED SIGN
(HC)	PROPOSED HANDICAP RAMP w/DWS

SIGN SCHEDULE

SYMBOL	QUANTITY	DESCRIPTION	AREA	HEIGHT
(A)	5	PENNDOT R1–1 "STOP" TYPE 3–HIGH INTENSITY SHEETING	30"X30"	9'
(B/C)	5	PENNDOT R7–8 "RESERVED PARKING"	12"x18"	8.5'
	5	PENNDOT R7–8A "VAN ACCESSIBLE"	12"x18"	8.5'
←	FLOW DIRECTIONAL ARROWS			

SIGNAGE NOTE:
ALL SITE AND BUILDING SIGNAGE WILL BE INSTALLED IN CONFORMITY WITH ARTICLE 1320 OF THE CITY OF BETHLEHEM ZONING ORDINANCE AND LVIP COVENANTS. DETAILED DRAWINGS WITH DESIGNED DIMENSIONS OF THE PROPOSED SIGNS WILL BE PROVIDED TO THE CITY & LVIP FOR APPROVAL PRIOR TO OBTAINING ANY REQUIRED PERMITS FOR THEIR CONSTRUCTION.

Benchmarks for this Plan

1. NE CORNER (SQUARE CUT) OF A CONCRETE PPL VAULT (66961S47176) ON THE SOUTH SIDE OF COMMERCE CENTER BLVD NEAR THE WEST SIDE OF GILCHRIST DRIVE.
ELEV=263.38

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3. TOP NUT OF FIRE HYDRANT, EAST OF FEATHER WAY, ON SOUTH SIDE OF GILCHRIST DR. MARKED AS L7089
ELEV=316.16

4. NW CORNER (SQUARE CUT OF A CONCRETE PPL VAULT(67062S47058) ON THE EAST SIDE OF FEATHER WAY, JUST NORTH OF THE CURTIS WRIGHT BUILDING.
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AT THE MEETING ON ____________ __, 2022, THE BETHLEHEM CITY PLANNING COMMISSION, BETHLEHEM, PENNSYLVANIA, DULY ENACTED AND APPROVED THIS PLAN OF THE PROPERTY LOT 63, LVIP VII LOCATED IN NORTHAMPTON COUNTY AS SHOWN HEREIN.

____
CHAIRMAN

____
SECRETARY

REVIEWED BY THE LEHIGH VALLEY PLANNING COMMISSION FOR LEHIGH AND NORTHAMPTON COUNTIES.

_____________________________________ _____________
LVPC STAFF PERSON RESPONSIBLE FOR REVIEW DATE

THIS PLAN WAS RECORDED IN THE OFFICE OF THE RECORDER OF DEEDS FOR NORTHAMPTON COUNTY, ON_______________IN PLAN BOOK______, PAGE______.

Owner Signature:

PUSH HOLDING, INC.

COMMONWEALTH OF PENNSYLVANIA)
) SS:
COUNTY OF NORTHAMPTON)

I, ____________________________ OF ______________________________
NAME CORPORATION NAME

BEING DULY SWORN ACCORDING TO LAW, AND ACTING IN MY CAPACITY AS ______________ DEPOSE AND SAY THAT THE ABOVE NAMED CORPORATION IS THE TRUE AND LAWFUL OWNER OF PROPERTY KNOWN AS __________________ __________________; THAT THE ABOVE DESCRIBED PROPERTY IS IN THE PEACEFUL POSSESSION OF SAID CORPORATION AND THAT THERE ARE NO LIENS PENDING AFFECTING THE TITLE THEREOF.

PUSH HOLDING, INC.
____
CORPORATION

____
CORPORATION OFFICIAL

SWORN AND SUBSCRIBED TO BEFORE ME THIS ___ DAY OF __________, ____

____
NOTARY PUBLIC

MY COMMISSION EXPIRES ON ______________________.

PRELIMINARY/FINAL LAND DEVELOPMENT (RECORD PLAN 2 OF 2)

NO.	REVISIONS	DATE
1	PER CITY COMMENT LETTER	6/06/22

DRAWN BY: DM | CHECKED BY: AB | SCALE: 1"=40' | DATE: 3/01/22 | PROJECT NO. 4920 | SHEET NO. 02 OF 14

SEAL: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER ANDREW THOMAS BOHL PE062856

PLAN TITLE: RECORD PLAN

PROJECT TITLE: LVIP VII – LOT 63 2680 COMMERCE CENTER BLVD.

40 0 20 40 80 120
1" = 40'

CITY OF BETHLEHEM
NORTHAMPTON COUNTY
PENNSYLVANIA

HanoverEngineering
Bethlehem Office
252 Brodhead Road, Suite 100
Bethlehem, PA 18017-8944
P:610.691.5644
F:610.691.6968
HanoverEng.com

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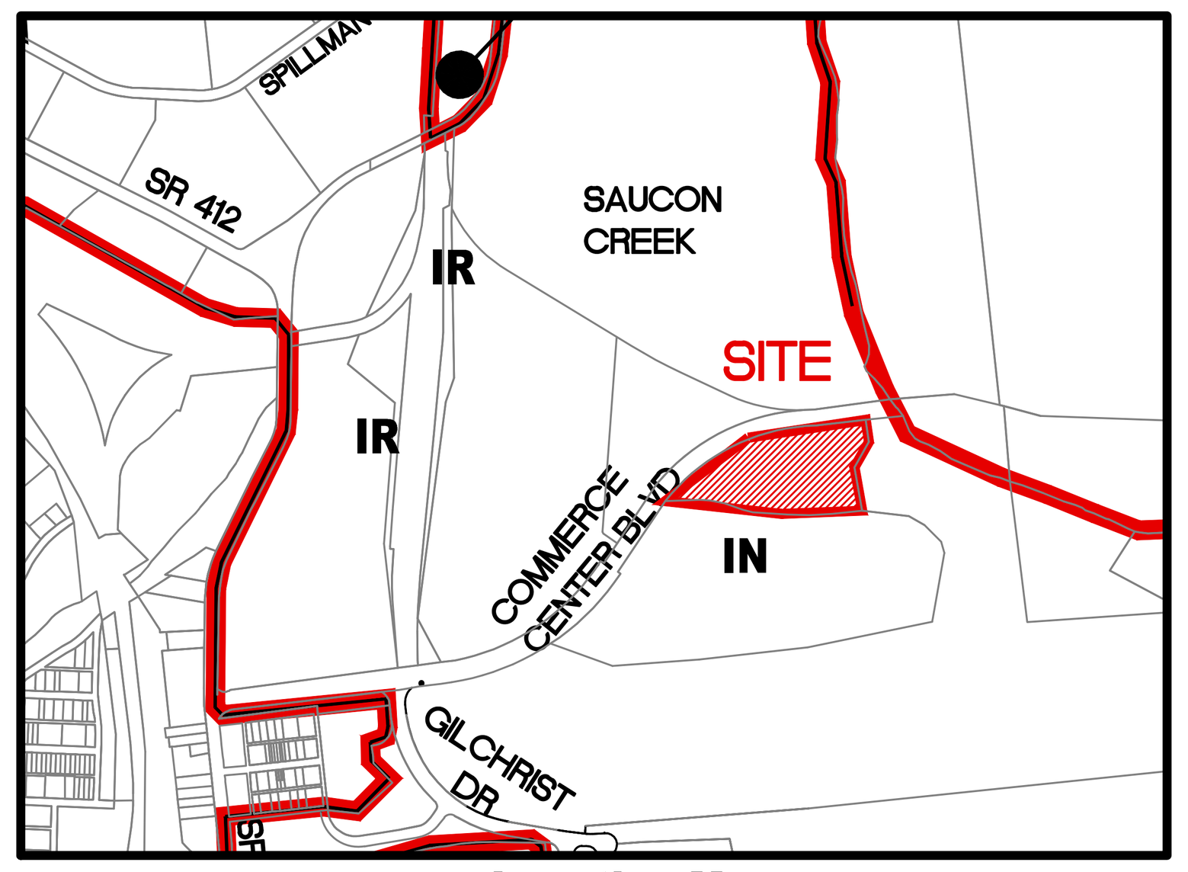
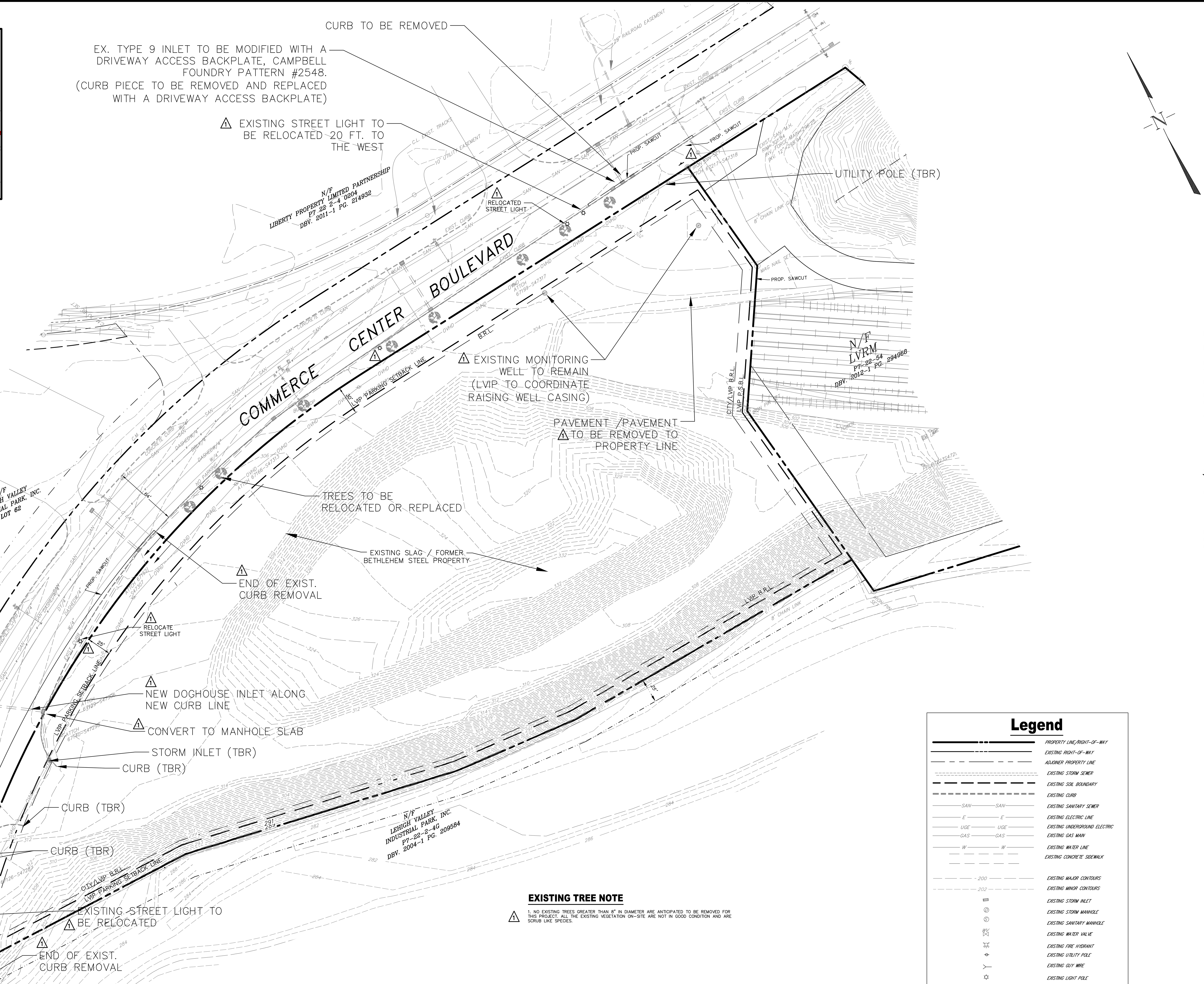


Location Map
SCALE: 1" = 1000'



EXISTING TREE NOTE

1. NO EXISTING TREES GREATER THAN 8" IN DIAMETER ARE ANTICIPATED TO BE REMOVED FOR THIS PROJECT. ALL THE EXISTING VEGETATION ON-SITE ARE NOT IN GOOD CONDITION AND ARE SCRUB LIKE SPECIES.

Benchmarks for this Plan

1. NE CORNER (SQUARE CUT) OF A CONCRETE PPL VAULT (66961S47176) ON THE SOUTH SIDE OF COMMERCE CENTER BLVD NEAR THE WEST SIDE OF GILCHRIST DRIVE. ELEV=263.38
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1-800-242-1776
THIS PROJECT'S DESIGNER INQUIRY NO.
20212924212

PROJECT	SERIAL NUMBERS	EXCAVATION-DEMOLITION	TYPE OF ONE CALL	DATE	ADDRESS	NEAREST INT.	TOWNSHIP	COUNTY
4920	20212924212	EXCAVATION	ROUTINE	10/26/2021	COMMERCE CENTER BLVD	GILCHRIST DR	CITY OF BETHLEHEM	NORTHAMPTON

Legend

- PROPERTY LINE/RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- ADJOINER PROPERTY LINE
- EXISTING STORM SEWER
- EXISTING SOIL BOUNDARY
- EXISTING CURB
- SAN — EXISTING SANITARY SEWER
- E — EXISTING ELECTRIC LINE
- UGE — EXISTING UNDERGROUND ELECTRIC
- GAS — EXISTING GAS MAIN
- W — EXISTING WATER LINE
- EXISTING CONCRETE SIDEWALK
- 200 — EXISTING MAJOR CONTOURS
- 202 — EXISTING MINOR CONTOURS
- EXISTING STORM INLET
- EXISTING STORM MANHOLE
- EXISTING SANITARY MANHOLE
- WV EXISTING WATER VALVE
- EXISTING FIRE HYDRANT
- EXISTING UTILITY POLE
- EXISTING GUY WIRE
- EXISTING LIGHT POLE
- EXISTING IRON PIN
- EXISTING SIGN
- EXISTING TREES

PRELIMINARY/FINAL LAND DEVELOPMENT

NO.	REVISIONS	DATE
1	PER CITY COMMENT LETTER	6/06/22

DRAWN BY: DM | CHECKED BY: AB | SCALE: 1"=40' | DATE: 3/01/22
PROJECT NO. 4920
SHEET NO. 03 OF 14

SEAL: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER ANDREW THOMAS BOHL PE062856

PLAN TITLE: EXISTING FEATURES AND DEMOLITION PLAN
PROJECT TITLE: LVIP VII – LOT 63 2680 COMMERCE CENTER BLVD.

0 20 40 80 120 — 1" = 40'

CITY OF BETHLEHEM
NORTHAMPTON COUNTY
PENNSYLVANIA

HanoverEngineering
Bethlehem Office
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Bethlehem, PA 18017-8944
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Legend

- PROPERTY LINE/RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- ADJOINER PROPERTY LINE
- EXISTING STORM SEWER
- EXISTING CURB
- SAN — EXISTING SANITARY SEWER
- OHW — EXISTING OVERHEAD ELECTRIC LINE
- GAS — EXISTING GAS MAIN
- W — EXISTING WATER LINE
- EXISTING RIGHT-OF-WAY
- 200 — EXISTING MAJOR CONTOURS
- 202 — EXISTING MINOR CONTOURS
- EXISTING STORM INLET
- EXISTING STORM MANHOLE
- EXISTING SANITARY MANHOLE
- EXISTING WATER VALVE
- EXISTING FIRE HYDRANT
- EXISTING UTILITY POLE
- EXISTING GUY WIRE
- EXISTING LIGHT POLE
- EXISTING IRON PIN
- EXISTING SIGN
- EXISTING TREES
- EXISTING CONCRETE SIDEWALK
- PROPOSED CURB
- PROPOSED CONCRETE SIDEWALK
- 200 — PROPOSED MAJOR CONTOURS
- 201 — PROPOSED MINOR CONTOURS
- UGE — PROPOSED UNDERGROUND ELECTRIC
- GAS — PROPOSED GAS LATERAL
- S LAT — PROPOSED SANITARY LATERAL
- W — PROPOSED WATER LATERAL
- PROP. FIRE HYDRANT/GATE VALVE
- PROPOSED STORM SEWER
- PROPOSED STORM SEWER MANHOLE
- PROPOSED STORM SEWER INLET

Benchmarks for this Plan

1. NE CORNER (SQUARE CUT) OF A CONCRETE PPL VAULT (6696154776) ON THE SOUTH SIDE OF COMMERCE CENTER BLVD NEAR THE WEST SIDE OF GILCHRIST DRIVE. ELEV=263.38
2. TOP NUT OF FIRE HYDRANT, JUST SOUTH OF HARVARD AVE, ON THE SOUTH SIDE OF GILCHRIST DR. ELEV=299.60
3. TOP NUT OF FIRE HYDRANT, EAST OF FEATHER WAY, ON SOUTH SIDE OF GILCHRIST DR. MARKED AS L7089 ELEV=316.16
4. NW CORNER (SQUARE CUT OF A CONCRETE PPL VAULT(6670625475058) ON THE EAST SIDE OF FEATHER WAY, JUST NORTH OF THE CURTIS WRIGHT BUILDING. ELEV=344.36

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PENNSYLVANIA ONE CALL SYSTEM, INC.
1-800-242-1776
THIS PROJECT'S DESIGNER INQUIRY NO.
20212924212

PROJECT	SERIAL NUMBERS/	EXCAVATION–DEMOLITION	/ TYPE OF ONE CALL /	DATE	/ ADDRESS	/ NEAREST INT. /	TOWNSHIP	/ COUNTY
4920	20212924212	EXCAVATION	ROUTINE	10/26/2021	COMMERCE CENTER BLVD	GILCHRIST DR	CITY OF BETHLEHEM	NORTHAMPTON

EX. TYPE 9 INLET TO BE MODIFIED WITH A DRIVEWAY ACCESS BACKPLATE, CAMPBELL FOUNDRY PATTERN #2548. (CURB PIECE TO BE REMOVED AND REPLACED WITH A DRIVEWAY ACCESS BACKPLATE)

COMMERCE CENTER BOULEVARD

N/F LIBERTY PROPERTY LIMITED PARTNERSHIP P7 22 2-4 0204 DBV. 2011-1 PG. 214932

PROPOSED ACCESS DRIVE

LIGHT TO BE RELOCATED LIGHT

RELOCATED LIGHT

PROP. SAWCUT

PROP. CURB TO EX. DEP. CURB

PROP. DEPRESSED CURB

EXISTING ACCESS EASEMENT

PROP. RETAINING WALL

DRIVE-IN

PROP TRASH ENCLOSURE STEPS

(8) DOCK DOORS 250'-0"

50' X 12.5 TYP BAY

PROP TRASH ENCLOSURE STEPS

N/F LVRM P7-28-54 DBV. 2012-1 PG. 294968

RAIL TIE-IN

890' TO FROG

EXISTING DRAINAGE, UTILITY AND GRADING EASEMENT

BUILDING 136,000 SF
WAREHOUSE/MANUFACTURING 133,000 SF
OFFICE 3,000 SF
FF = 310.5
DOCKS 306.5

ROOF RIDGE LINE

TRACK ELEV = 303.75 OUTSIDE OF CAR

PROP. FIRE HYDRANT

8"x6" REDUCER

PROPOSED TRACKS

silos (6)

chiller equip area

main door

PROP. RETAINING WALL

PROP. ROOF DRAIN 15" DIA @ MINIMUM 2.00% SLOPE

500'-0"

160'-0"

50'-0"

PROPOSED F.D.C.

STAT=6+24.47 OFF=0.00

PROP. FIRE HYDRANT

PROPOSED RETAINING WALL

EXISTING DRAINAGE EASEMENT

EXIST. SAN. MANHOLE RIM = 307.6 INV 15 E = 291.9 INV 15 W = 291.8

N/F LEHIGH VALLEY INDUSTRIAL PARK, INC. LOT 62

30' SANITARY SEWER EASEMENT

NEW DOGHOUSE INLET

PLACE NEW CURB ACROSS EXISTING DRIVEWAY OPENING

EXISTING DRIVEWAY OPENING

N/F CITY OF BETHLEHEM DBV. 2005-1, PG179534 TRACT B

RELOCATED LIGHT

PROPOSED ACCESS DRIVE

LIGHT TO BE RELOCATED LIGHT

PROP. SAWCUT

PROPOSED MONUMENT SIGN (EXACT SIZE TO BE DETERMINED BY OTHERS)

WATERLINE STATIONS, SEE PROFILE ON SHEET 6

N/F LEHIGH VALLEY INDUSTRIAL PARK, INC. P7-22-2-4G DBV. 2004-1 PG. 209584

SAN–1 CHART									
NAME	TYPE	TOP	INV. IN	INV. OUT	PIPE DIA.	LENGTH	MATERIAL	SLOPE	DOWNSTREAM STRUCTURE
EXIST. SAN. M.H.	48" DIA MH	RIM=301.84	296.44 (SAN. M.H. 1)						
SAN. M.H. 1	48" DIA MH	RIM=309.80	299.55 (SAN. M.H. 2)	299.45	6"	300.93'		1.00%	EXIST. SAN. M.H.
SAN. M.H. 2	48" DIA MH	RIM=309.38	303.74 (C.O.)	303.49	6"	394.24'		1.00%	SAN. M.H. 1
C.O.		RIM=310.00		303.97	6"	22.49'		1.04%	SAN. M.H. 2

⚠1 SEE SHEET 6 FOR PROFILES

STORM SEWER CHART									
NAME	TYPE	TOP	INV. IN	INV. OUT	PIPE DIA.	LENGTH	MATERIAL	SLOPE	DOWNSTREAM STRUCTURE
FES 1	30" FES		288.47 (MH 2)						
FES 7	24" FES		275.00 (MH 7A)						
INL 2A	STD BOX, C TOP	TC=309.75		306.39	15"	227.17'	HDPE	1.25%	MH 2
INL 3A	STD BOX, C TOP	TC=307.88	303.27 (MH 3B)	303.07	18"	132.81'	HDPE	1.94%	MH– 3
INL 4	STD BOX, C TOP	TC=309.24	301.18 (INL 5)	301.08	18"	17.85'	HDPE	1.01%	MH– 3
INL 5	STD BOX, C TOP	TC=308.77	302.64 (INL 6)	302.54	18"	117.00'	HDPE	1.16%	INL 4
INL 6	STD BOX, M TOP	TG=308.67	303.84 (MH 6A)	303.64	18"	66.22'	HDPE	1.51%	INL 5
INL 8	STD BOX, C TOP	TC=304.34	293.90 (INL 9) 297.84 (INL 8A)	285.18	24"	33.50'	HDPE	3.28%	MH 7A
INL 8A	STD BOX, M TOP	TG=304.50		301.66	15"	92.99'	HDPE	4.11%	INL 8
INL 9	STD BOX, M TOP	TG=303.91	295.68 (INL 10)	295.18	24"	127.71'	HDPE	1.00%	INL 8
INL 10	STD BOX, C TOP	TC=304.15	297.28 (MH 11)	297.18	18"	91.46'	HDPE	1.64%	INL 9
INL 11B	STD BOX, C TOP	TC=302.11	298.88 (INL 11C)	298.78	15"	38.28'	HDPE	0.50%	MH 11
INL 11C	STD BOX, C TOP	TC=301.74		299.16	15"	55.63'	HDPE	0.50%	INL 11B
MH– 3	60" DIA MH	RIM=309.65	300.90 (INL 4) 300.50 (INL 3A)	299.90	24"	60.35'	HDPE	1.97%	MH 2
MH 2	60" DIA MH	RIM=310.57	298.71 (MH– 3) 303.55 (INL 2A)	288.81	24"	33.93'	HDPE	1.00%	
MH 3B	60" DIA MH	RIM=309.31		304.20	15"	32.27'	HDPE	2.88%	INL 3A
MH 6A	48" DIA MH	RIM=309.74		304.84	15"	120.29'	HDPE	0.83%	INL 6
MH 7A	60" DIA MH	RIM=298.29	284.08 (INL 8)	276.10	24"	33.50'	HDPE	3.28%	FES 7
MH 11	48" DIA MH	RIM=304.82	298.59 (MH 12) 298.59 (INL 11B)	298.49	18"	144.49'	HDPE	0.84%	INL 10
MH 12	48" DIA MH	RIM=310.05		299.35	15"	76.43'	HDPE	0.99%	MH 11
DOG HOUSE INLET	CITY TYPE 9	TC=308.57	CONTRACTOR TO VERIFY INVERTS TO DETERMINE DEPTH PRIOR TO ORDERING		24"		RCP		

SEE SHEET 6 FOR PROFILES

Grading and Utility Notes

1. SEE STORMWATER MANAGEMENT DESIGN REPORT FOR THE PRE AND POST WATERSHED LIMITS.
2. ALL PROPOSED UTILITIES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PROPER CITY'S SPECIFICATIONS.
3. ALL PIPE LENGTHS ARE FROM CENTER OF THE MANHOLE OR INLET.
4. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT BUILDING UTILITY CONNECTION LOCATIONS. WHERE CONFLICTS EXIST WITH THESE PLANS, THE ENGINEER OF RECORD SHALL BE NOTIFIED PRIOR TO CONSTRUCTION TO RESOLVE. SERVICE SIZES TO BE DETERMINED BY THE ARCHITECT.
5. ANY UTILITY CROSSING WITH LESS THAN MINIMUM OF EIGHTEEN INCHES (18") VERTICAL CLEARANCE SHALL BE CONCRETE ENCASED.
6. STRUCTURAL DETAILS FOR ALL STORMWATER MANAGEMENT STRUCTURES INCLUDING INLETS, JUNCTION BOXES, HEADWALLS, DETENTION BASINS, BAFFLES, AND SPILLWAYS, SHALL BE DESIGNED BY A STRUCTURAL ENGINEERING REGISTERED IN THE STATE OF PENNSYLVANIA AND SUBMITTED TO THE ENGINEER OF RECORD FOR A REVIEW AND APPROVAL PRIOR TO CONSTRUCTION. EXEMPTIONS TO THIS REQUIREMENT SHALL BE PERMITTED FOR ALL STANDARD STRUCTURES DESIGNED AND DETAILED IN EXISTING PennDOT STANDARD DRAWINGS. IN THOSE CASES, THE STANDARD STRUCTURAL DETAIL TO BE USED FOR THE STRUCTURE SHALL BE SUBMITTED TO THE ENGINEER FOR RECORD, FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
7. ALL SANITARY SEWER AND WATERLINES AND LATERALS SHALL HAVE A MINIMUM OF TEN FEET (10') SEPARATION.
8. ANY EXISTING UTILITY POLES INTERFERING WITH CONSTRUCTION SHALL BE RELOCATED TO A LOCATION IN ACCORDANCE WITH UTILITY OWNERS, AND CITY'S REGULATIONS AND SPECIFICATIONS.
9. ALL ELECTRIC, TELEPHONE, CABLE TELEVISION AND NATURAL GAS DISTRIBUTION LINES SHALL BE PLACED UNDERGROUND.
10. THE SANITARY SEWER SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY'S RULES AND REGULATIONS.
11. ALL ROOF LEADERS ARE TO BE PVC PIPE OR APPROVED EQUAL.
12. THE SITE CONTRACTOR SHALL INSTALL THE FIRE AND DOMESTIC WATER SERVICE INTO THE MECHANICAL ROOM AND STOP AT THE FLANGE INSIDE THE BUILDING. COORDINATE FINAL FLANGE LOCATION WITH PLUMBING AND FIRE PROTECTOR CONTRACTOR.
13. ALL PROPOSED STORM SEWER PIPE SHALL BE HDPE PIPE WITH O-RING GASKETS UNLESS NOTED OTHERWISE ON THE PLAN.
14. STRUCTURAL DETAILS FOR ALL STORM WATER STRUCTURES SHALL BE DESIGNED BY A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF PENNSYLVANIA AND SUBMITTED TO THE CITY OF BETHLEHEM FOR REVIEW AND APPROVAL, AT LEAST THIRTY (30) DAYS BEFORE CONSTRUCTION.
15. ABANDONMENT OF EXISTING UTILITIES AND ASSOCIATED STRUCTURES WITHIN STREET RIGHTS–OF–WAY OR EASEMENTS TO BE DEDICATED TO THE CITY, SHALL BE COMPLETED IN ACCORDANCE WITH METHODS APPROVED BY THE CITY.
16. THE DEVELOPER SHALL ENSURE THAT CURRENT AS–BUILT RECORDS ARE MAINTAINED DURING CONSTRUCTION. UPON COMPLETION OF CONSTRUCTION, CERTIFIED (I.E., P.E. STAMPED) AS–BUILT DRAWINGS SHALL BE SUBMITTED BY THE DEVELOPER'S ENGINEERS. THESE AS–BUILT DRAWNGS SHALL BE FOUND ACCEPTABLE BY THE CITY ENGINEER PRIOR TO RELEASE OF ANY REMAINING SECURITY.
17. THE MAINTENANCE OF THE STORM WATER FACILITIES, SHALL BE THE OWNER'S RESPONSIBILITY UNTIL SUCH TIME AS SAID FACILITIES ARE DEDICATED TO THE CITY. THE OWNER'S DEED, AND THE DEEDS TO ANY SUBSEQUENT OWNER, SHALL NOTE THAT THE OWNER SHALL ACCEPT THE MAINTENANCE RESPONSIBILITIES OF ANY FACILITIES NOT DEDICATED. THE CITY OF BETHLEHEM SHALL BE PERMITTED TO INSPECT THE STORM WATER FACILITIES ON AT LEAST AN ANNUAL SCHEDULE TO ENSURE THAT ANY NECESSARY CORRECTIVE WORK IS PERFORMED IN A TIMELY MANNER.
18. IN ORDER TO MAINTAIN CONTINUITY BETWEEN PLAN REVISIONS, ANY CHANGES TO A PREVIOUS PLAN SUBMISSION SHALL BE FLAGGED WITH A TRIANGLE. ANY CHANGES NOT FLAGGED MAY BE CONSIDERED NOT APPROVED. FLAGGED CHANGES SHALL BE REFERENCED TO THE APPROPRIATE REVISION DATE.
19. FOR STORM SEWER MANHOLES/BOXES, THE ACTUAL RIM/ GRATE ELEVATION SHALL BE FINAL ADJUSTED PRIOR TO PAVING.
20. SLAG BACKFILL IS PROHIBITED IN WATER LINE TRENCH.
21. SEE PROFILE SHEET FOR THE STORM AND SANITARY PIPE SIZE, PIPE SLOPE, INVERTS, RIM ELEVATION AND GRATE ELEVATION.
22. THE CONTRACTOR SHALL PROVIDE ELECTRIC TO THE PROPOSED MONUMENT SIGN.
23. THE CONTRACTOR SHALL SUPPLY THE REQUIRED SIZE AND QUANTITY OF CONDUITS TO MEET THE DEMANDS FOR POWER, DATA, CABLE AND COMMUNICATIONS.
24. THE EXISTING CONDUIT FOR THE EXISTING STREET LIGHTING MAY NEED TO BE LOWERED AT THE TIME OF DRIVEWAY CONSTRUCTION AT THE DISCRETION OF THE CITY ENGINEERING DEPARTMENT.
25. THE CONTRACTOR SHALL CUT AND CAP ANY EXISTING ABANDONED UTILITY IF THE UTILITY LINE CONFLICTS WITH THE CONSTRUCTION OF THE BUILDING OR ANY OTHER SITE IMPROVEMENT FOR THIS PROJECT.
26. FINISH PAVEMENT AT THE LOADING DOCKS SHALL BE 48" BELOW FINISH GRADE.
27. THE PROPOSED FIRE AND DOMESTIC WATER SERVICES SHALL BE ENCASED WITH A POLYETHYLENE ENCASEMENT IN ACCORDANCE WITH AWWA C105/A21.5–82, SECTION 5.4.

NO.	REVISIONS	DATE	DRAWN BY: BM	CHECKED BY:
1	PER CITY COMMENT LETTER	6/09/22	SCALE: 1"=40'	DATE: 3/01/22

PROJECT NO. 4920

SHEET NO. 04 OF 14

PRELIMINARY/FINAL LAND DEVELOPMENT

PLAN TITLE: GRADING AND UTILITY PLAN

PROJECT TITLE: LVIP VII – LOT 63 2680 COMMERCE CENTER BLVD.

1" = 40'

CITY OF BETHLEHEM NORTHAMPTON COUNTY PENNSYLVANIA

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ANDREW THOMAS BOYD ENGINEER

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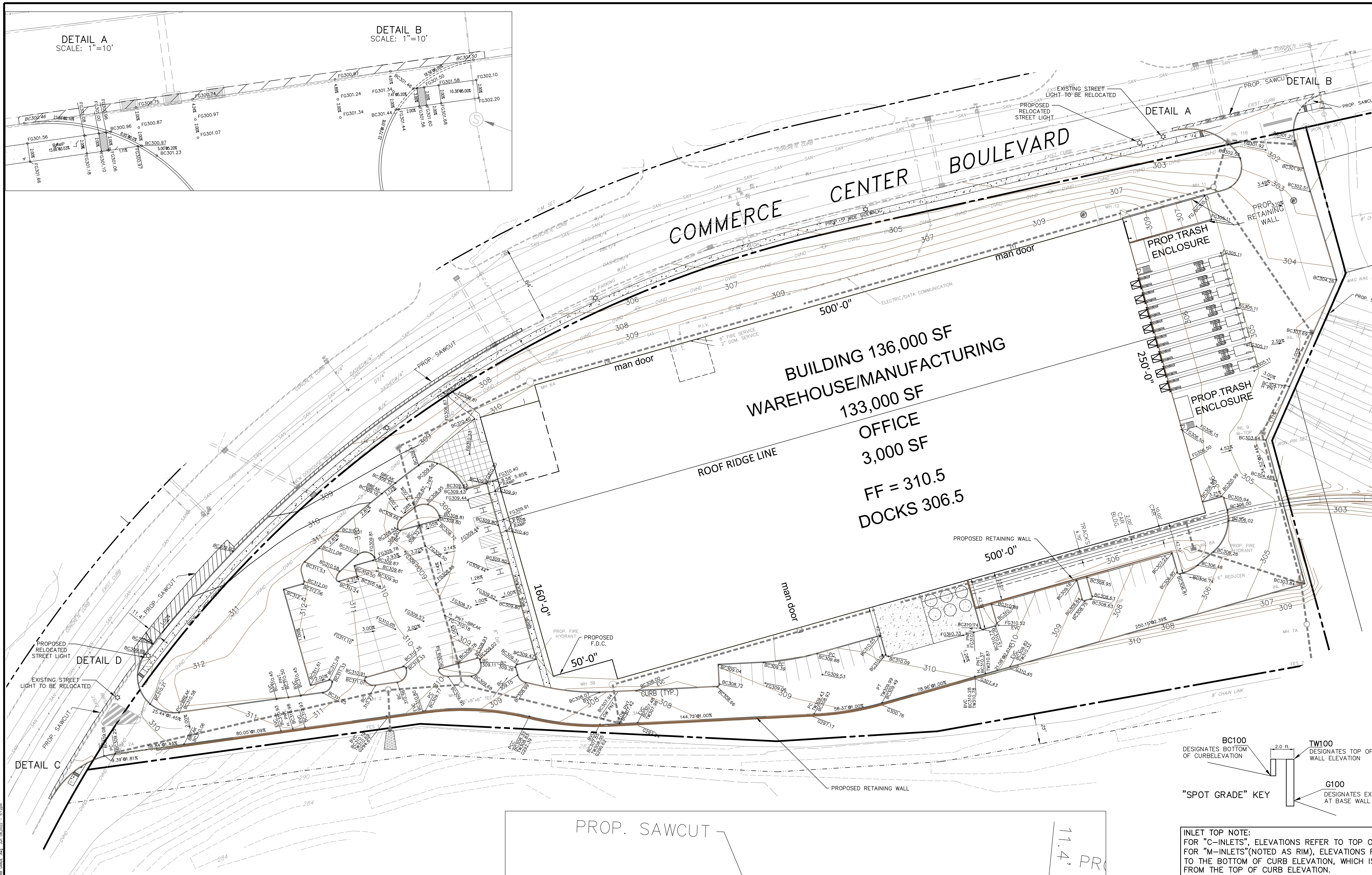

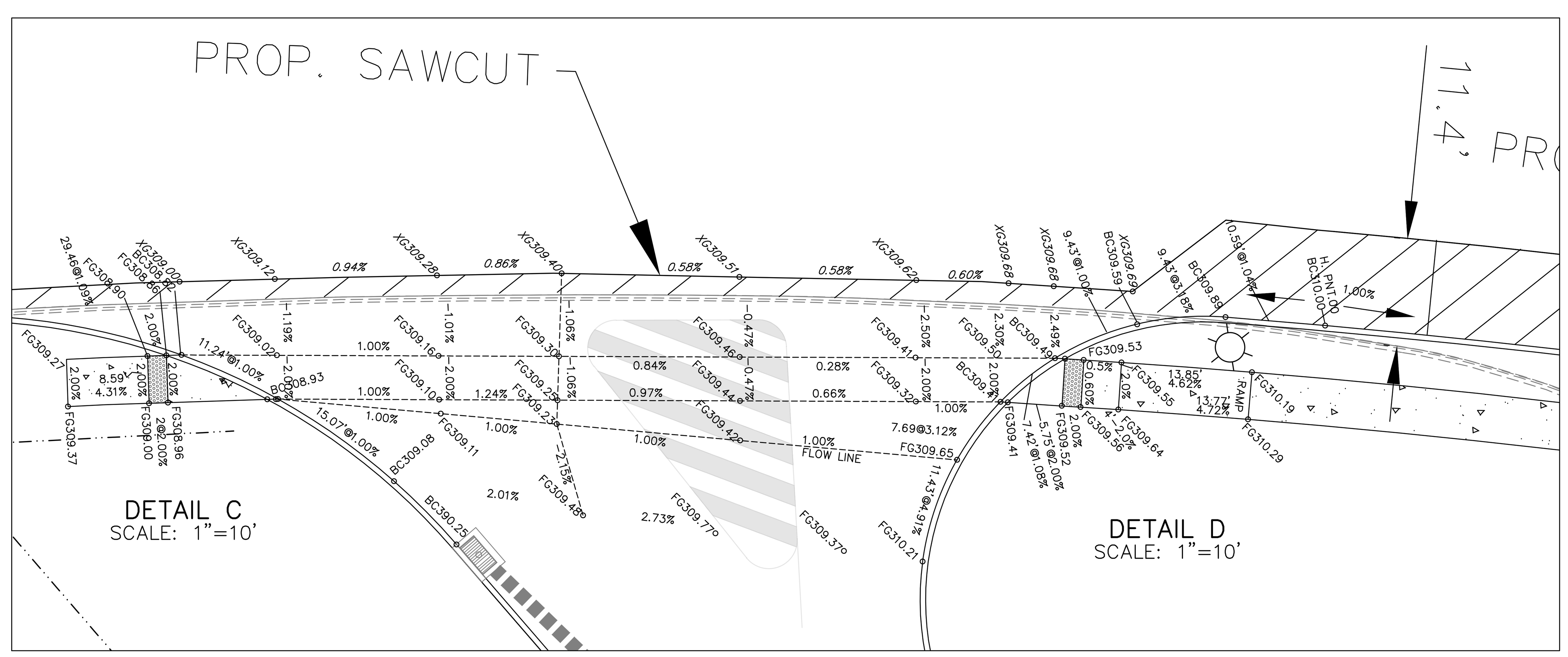

Legend

	PROPERTY LINE/RIGHT-OF-WAY
	EXISTING RIGHT-OF-WAY
	ADJOINER PROPERTY LINE
	EXISTING STORM SEWER
	EXISTING CURB
SAN	EXISTING SANITARY SEWER
OVHD	EXISTING OVERHEAD ELECTRIC LINE
GAS	EXISTING GAS MAIN
W	EXISTING WATER LINE
	EXISTING RIGHT-OF-WAY
200	EXISTING MAJOR CONTOURS
202	EXISTING MINOR CONTOURS
	EXISTING STORM INLET
	EXISTING STORM MANHOLE
	EXISTING SANITARY MANHOLE
	EXISTING WATER VALVE
	EXISTING FIRE HYDRANT
	EXISTING UTILITY POLE
	EXISTING GUY WIRE
	EXISTING LIGHT POLE
	EXISTING IRON PIN
	EXISTING SIGN
	EXISTING TREES
	EXISTING CONCRETE SIDEWALK
	PROPOSED CURB
	PROPOSED CONCRETE SIDEWALK
310	PROPOSED MAJOR CONTOURS
302	PROPOSED MINOR CONTOURS
UGE	PROPOSED UNDERGROUND ELECTRIC
GAS	PROPOSED GAS LATERAL
S LAT	PROPOSED SANITARY LATERAL
W	PROPOSED WATER LATERAL
	PROP. FIRE HYDRANT/GATE VALVE
	PROPOSED STORM SEWER
	PROPOSED STORM SEWER MANHOLE
	PROPOSED STORM SEWER INLET

"SPOT GRADE" KEY

BC100 DESIGNATES BOTTOM OF CURBELEVATION

2.0 ft.

TW100 DESIGNATES TOP OF WALL ELEVATION

G100 DESIGNATES EXIST. GRADE AT BASE WALL

INLET TOP NOTE:
FOR "C–INLETS", ELEVATIONS REFER TO TOP OF CURB.
FOR "M–INLETS"(NOTED AS RIM), ELEVATIONS REFER TO THE BOTTOM OF CURB ELEVATION, WHICH IS 6" FROM THE TOP OF CURB ELEVATION.

Benchmarks for this Plan

1. NE CORNER (SQUARE CUT) OF A CONCRETE PPL VAULT (66961S47176) ON THE SOUTH SIDE OF COMMERCE CENTER BLVD NEAR THE WEST SIDE OF GILCHRIST DRIVE. ELEV=263.38
2. TOP NUT OF FIRE HYDRANT, JUST SOUTH OF HARVARD AVE, ON THE SOUTH SIDE OF GILCHRIST DR. ELEV=299.60
3. TOP NUT OF FIRE HYDRANT, EAST OF FEATHER WAY, ON SOUTH SIDE OF GILCHRIST DR. MARKED AS L7089 ELEV=316.16
4. NW CORNER (SQUARE CUT OF A CONCRETE PPL VAULT(67062S47058) ON THE EAST SIDE OF FEATHER WAY, JUST NORTH OF THE CURTIS WRIGHT BUILDING. ELEV=344.36

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20212924212

PROJECT	SERIAL NUMBERS	EXCAVATION–DEMOLITION	TYPE OF ONE CALL	DATE	ADDRESS	NEAREST INT.	TOWNSHIP	COUNTY
4920	20212924212	EXCAVATION	ROUTINE	10/26/2021	COMMERCE CENTER BLVD	GILCHRIST DR	CITY OF BETHLEHEM	NORTHAMPTON

PRELIMINARY/FINAL LAND DEVELOPMENT

PLAN TITLE: CURB GRADE PLAN

PROJECT TITLE: LVIP VII – LOT 63
2680 COMMERCE CENTER BLVD.

CITY OF BETHLEHEM
NORTHAMPTON COUNTY
PENNSYLVANIA

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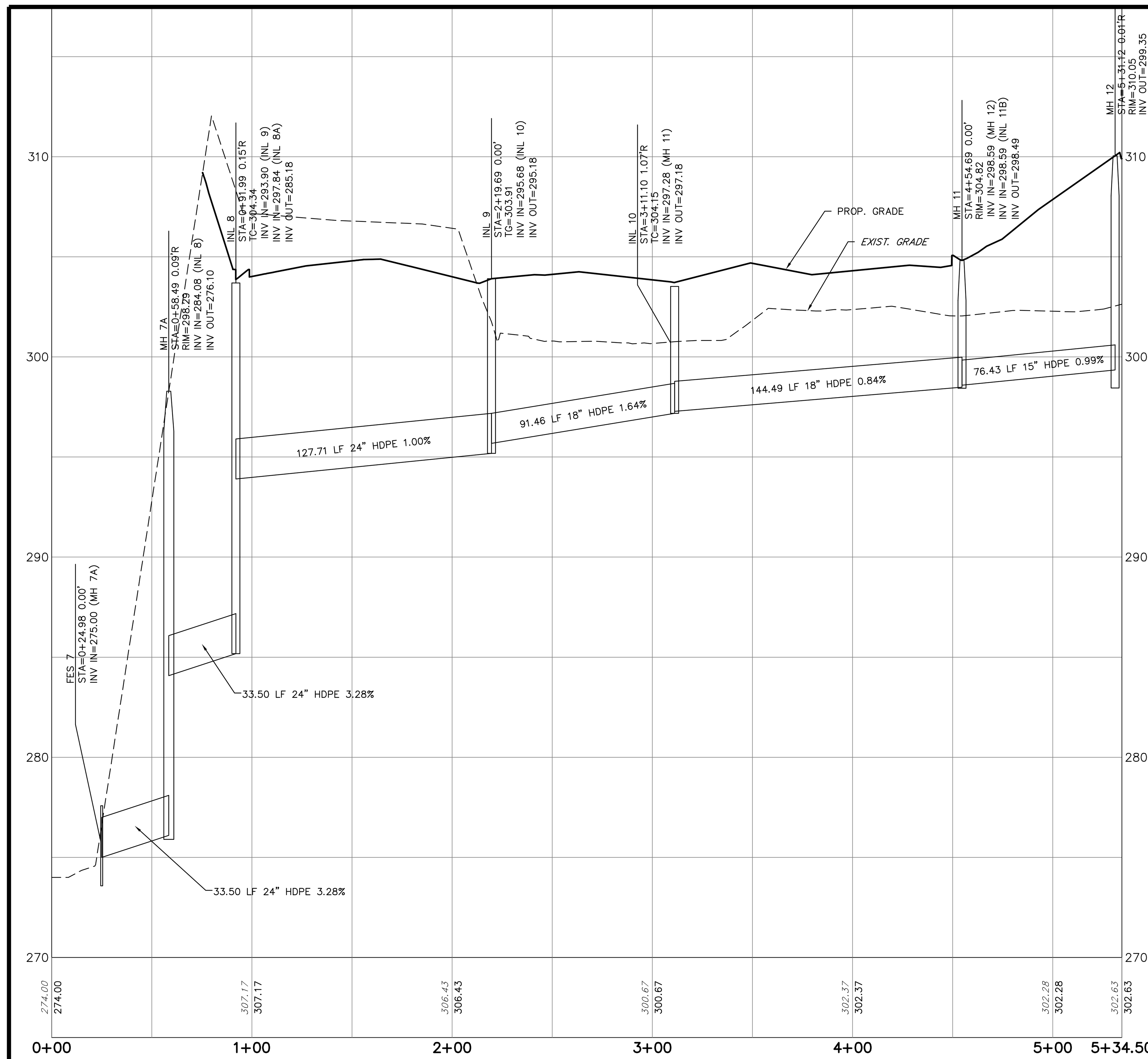
SEAL: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER ANDREW THOMAS BOHL PE062856

NO.	REVISIONS	DATE
1	PER CITY COMMENT LETTER	6/06/22

DRAWN BY: DM CHECKED BY: AB
SCALE: 1"=30' DATE: 3/01/22
PROJECT NO. 4920

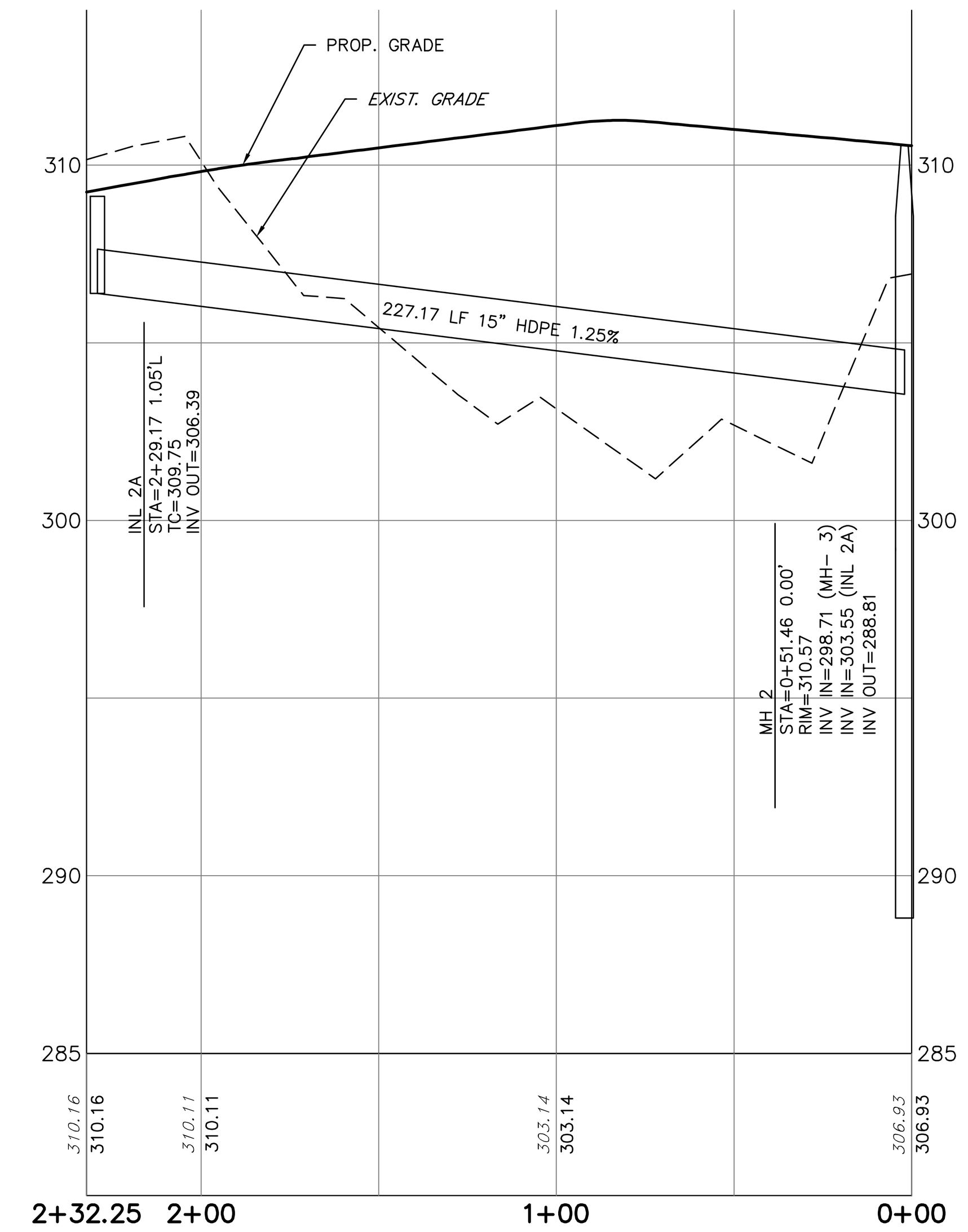
Y:\Projects\Private\4920-Lot 63 LVIP\DWG\Current Plan Set\Land Development Plan\4920_PLANS-005-CURB GRADE.dwg Jun 08,2022 - 5:12pm



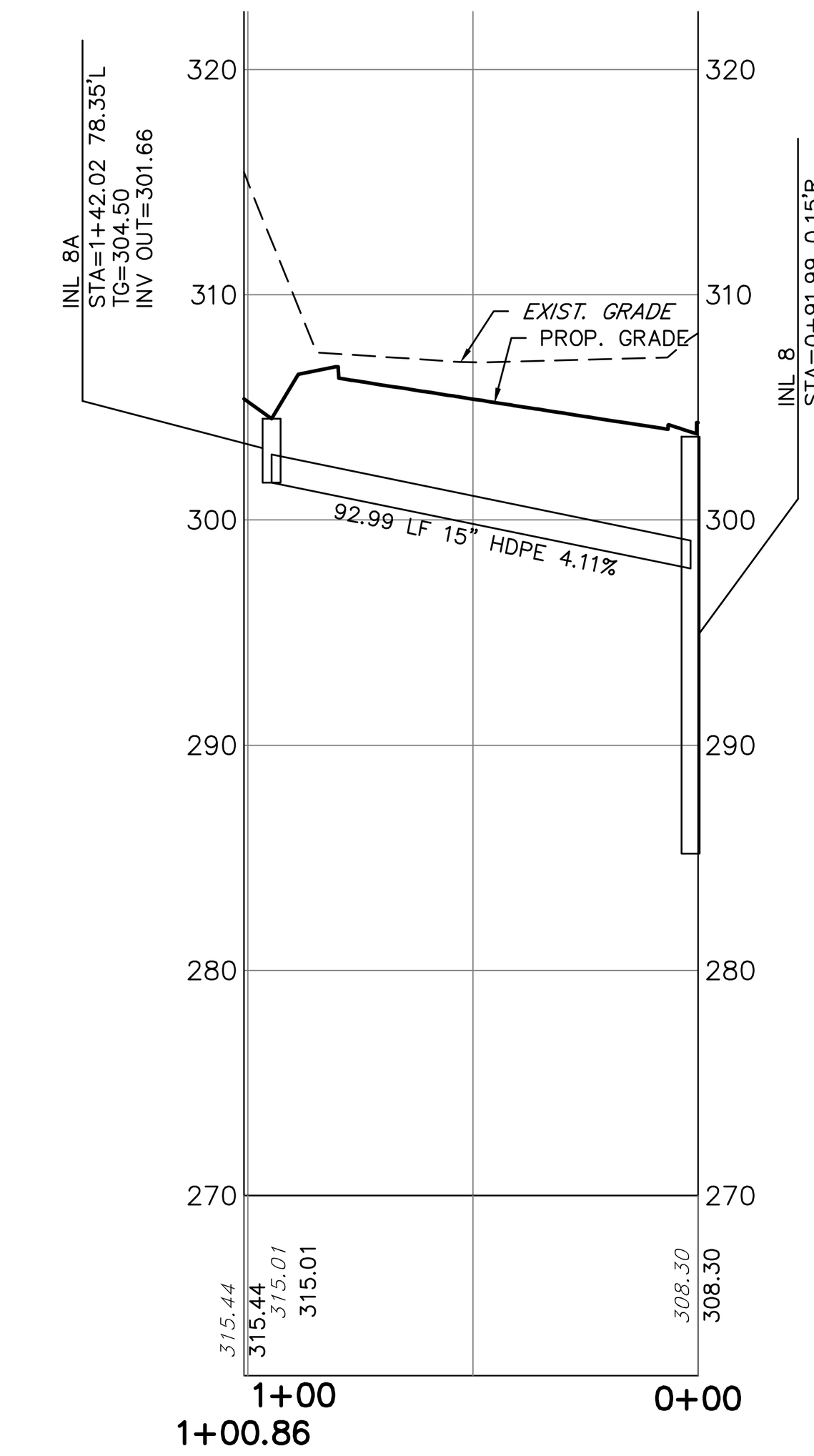
STORM SEWER FES 7 TO MH 12
PROFILE

1" = 50'

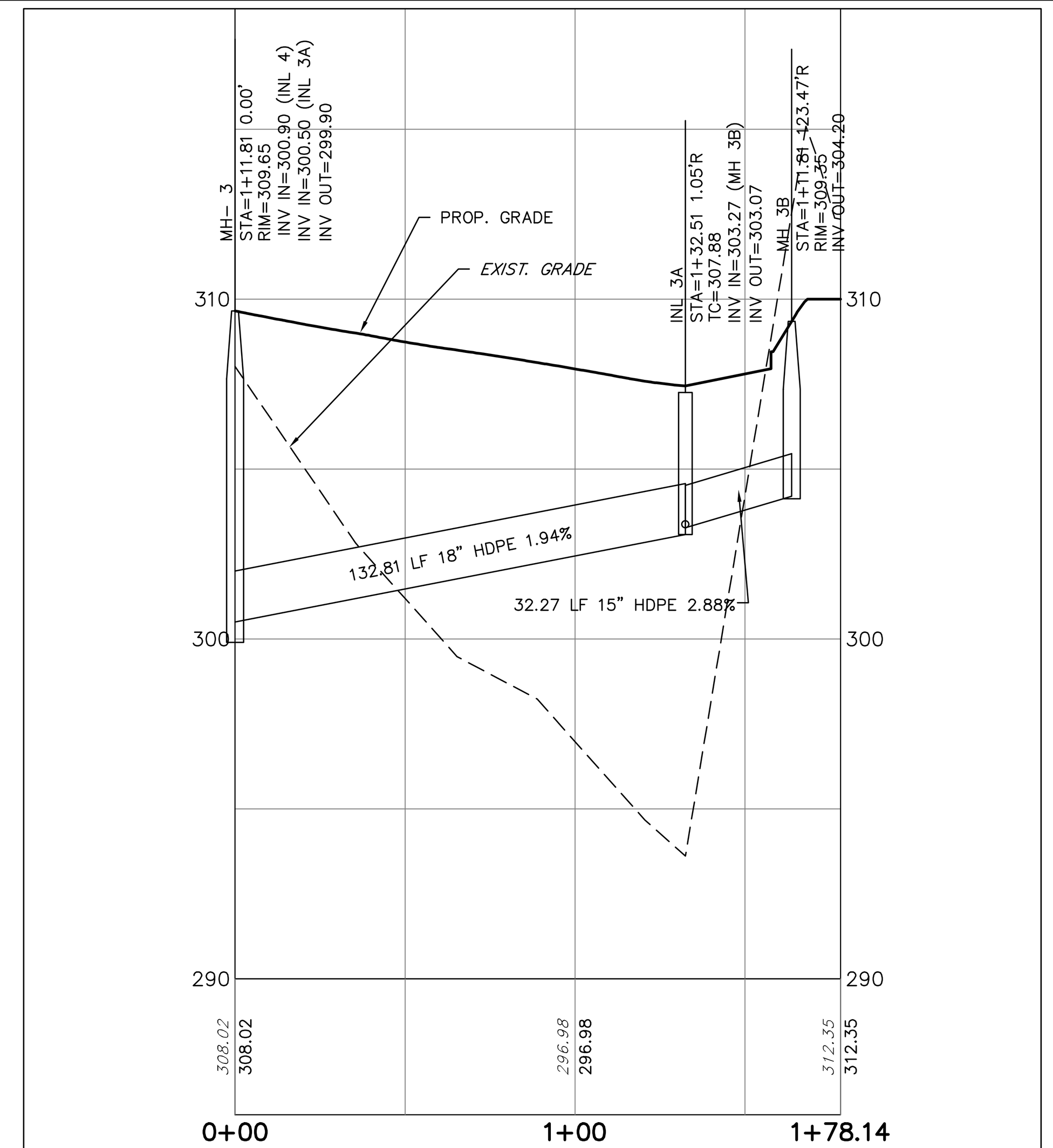
HORZ. SCALE: 1"=40'
VERT. SCALE: 1"=4'



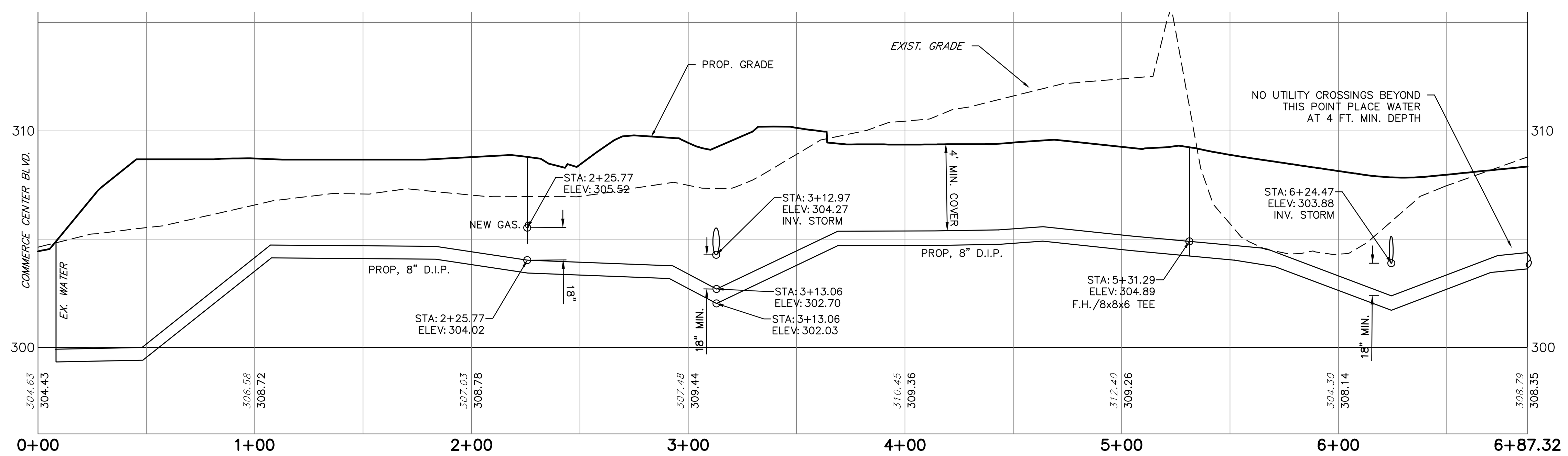
STORM SEWER
INL 2A TO MH 2
PROFILE



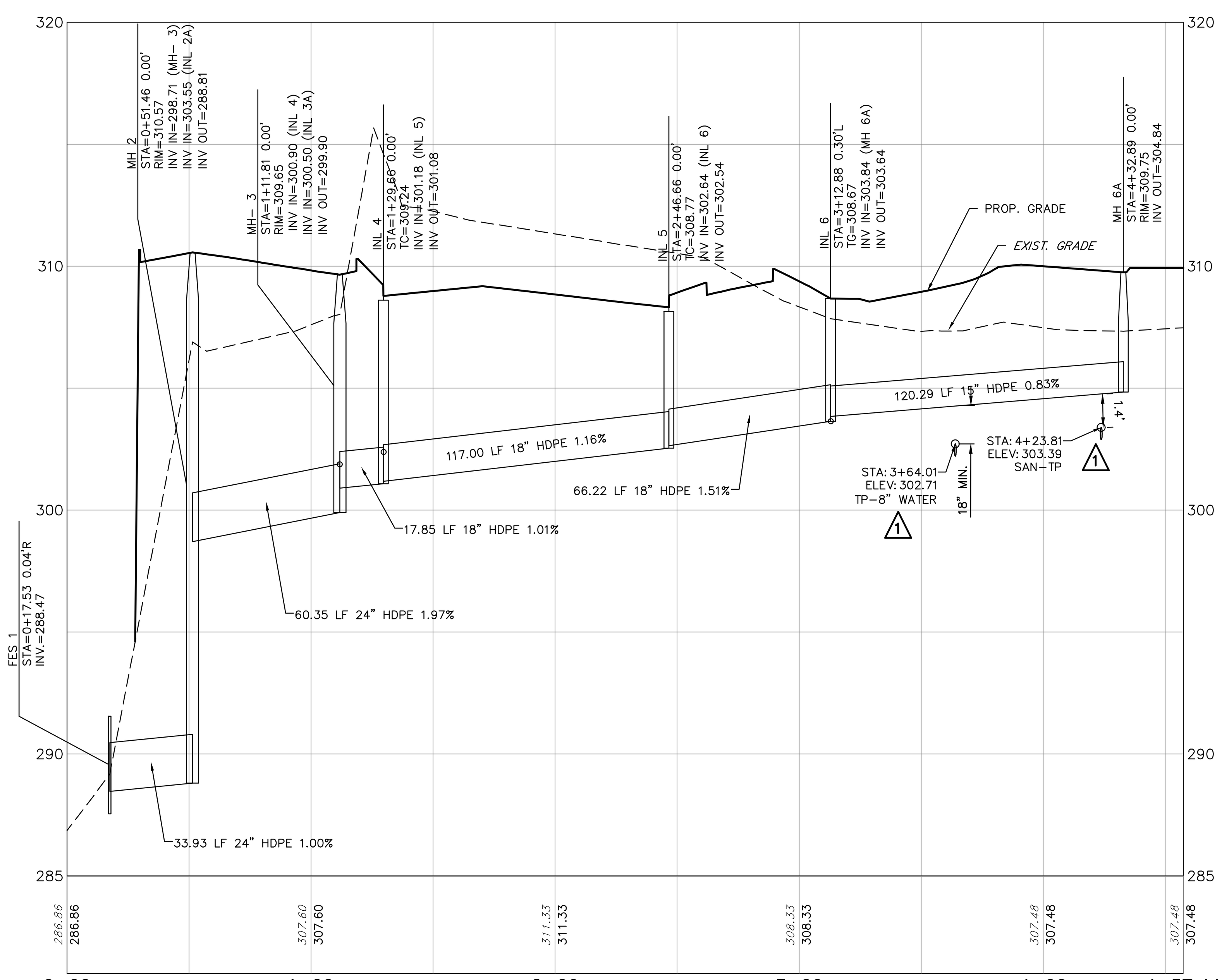
STORM SEWER
INL 8A TO INL 8
PROFILE



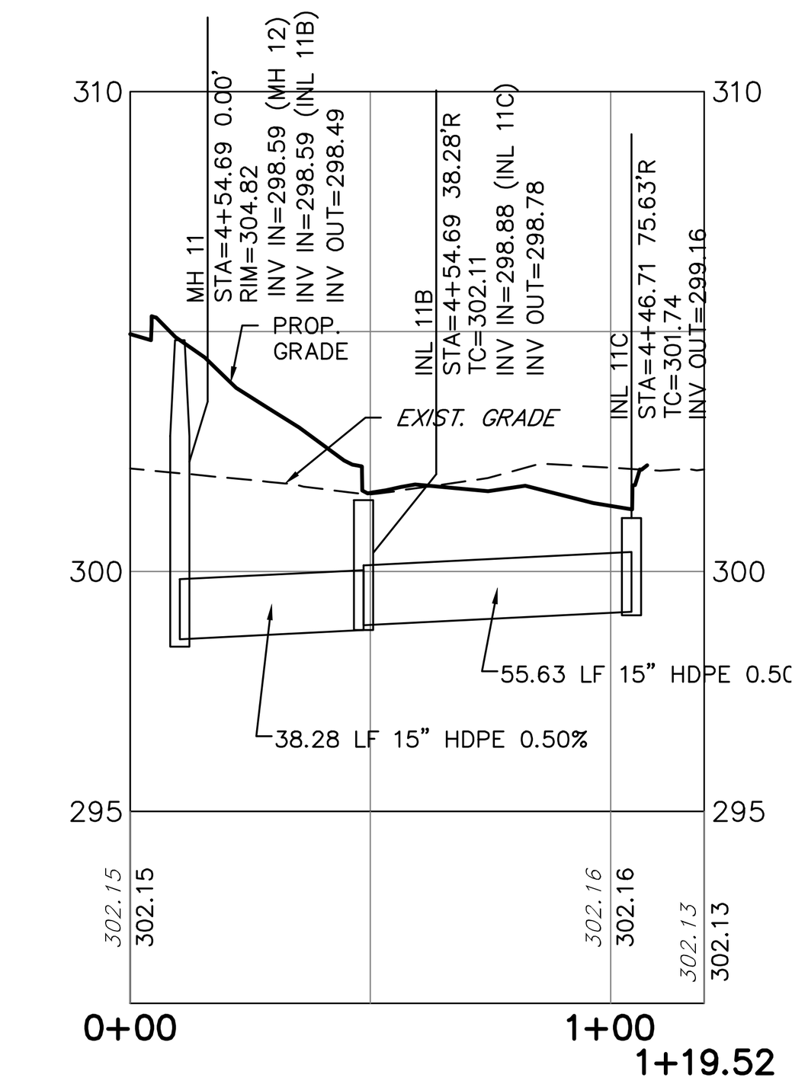
STORM SEWER MH 3 TO MH 3B
PROFILE



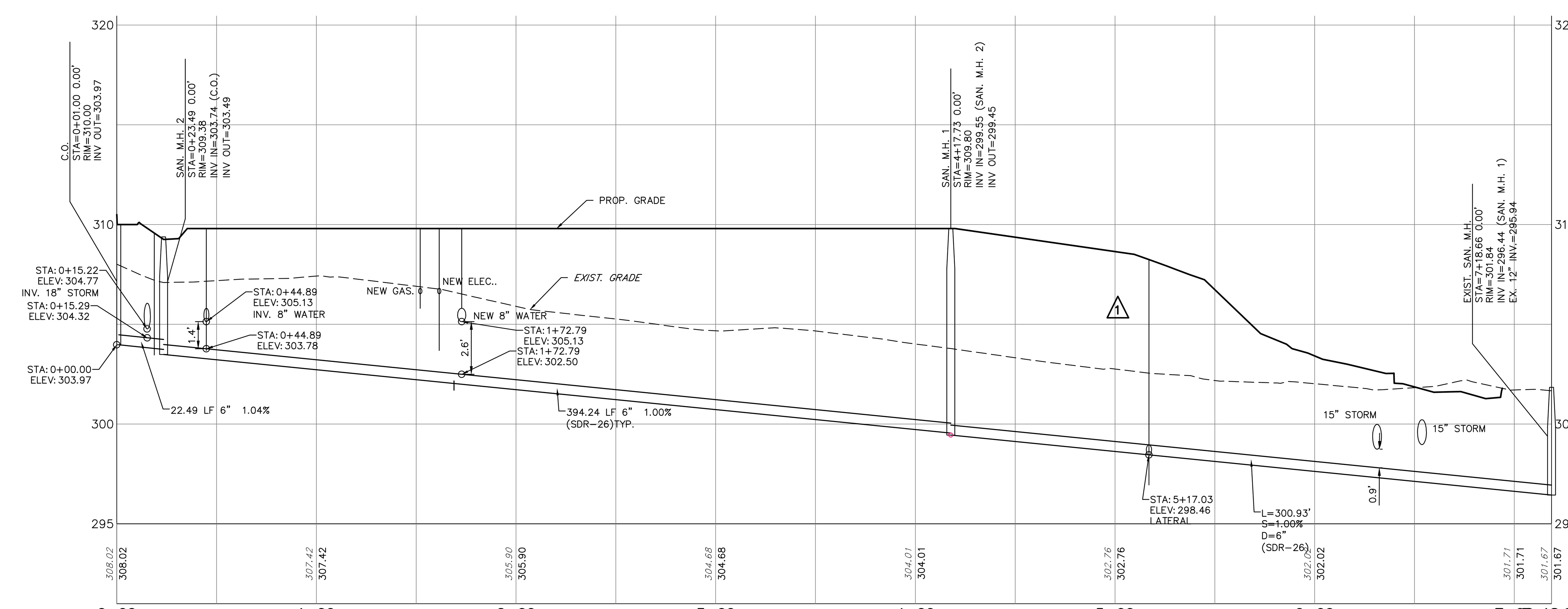
PROPOSED WATERLINE
PROFILE ⚠1



STORM SEWER FES 1 TO MH 6A
PROFILE



STORM SEWER
MH 11 TO INL 11C
PROFILE



SAN LATERAL EAST
⚠1 PROFILE

PRELIMINARY/FINAL LAND DEVELOPMENT

CHECKED BY: AB	DATE: 3/01/22	DRAWN BY: DM	SCALE: AS NOTED	PROJECT NO. 4920	SHEET NO. 06 OF 14

NO.	DATE	REVISIONS
1	6/06/22	PER CITY COMMENT LETTER

SEAL: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER ANDREW THOMAS BOHL PE062856

PLAN TITLE: UTILITY PROFILE PLAN

PROJECT TITLE: LVIP VII – LOT 63
2680 COMMERCE CENTER BLVD.

CITY OF BETHLEHEM
NORTHAMPTON COUNTY
PENNSYLVANIA

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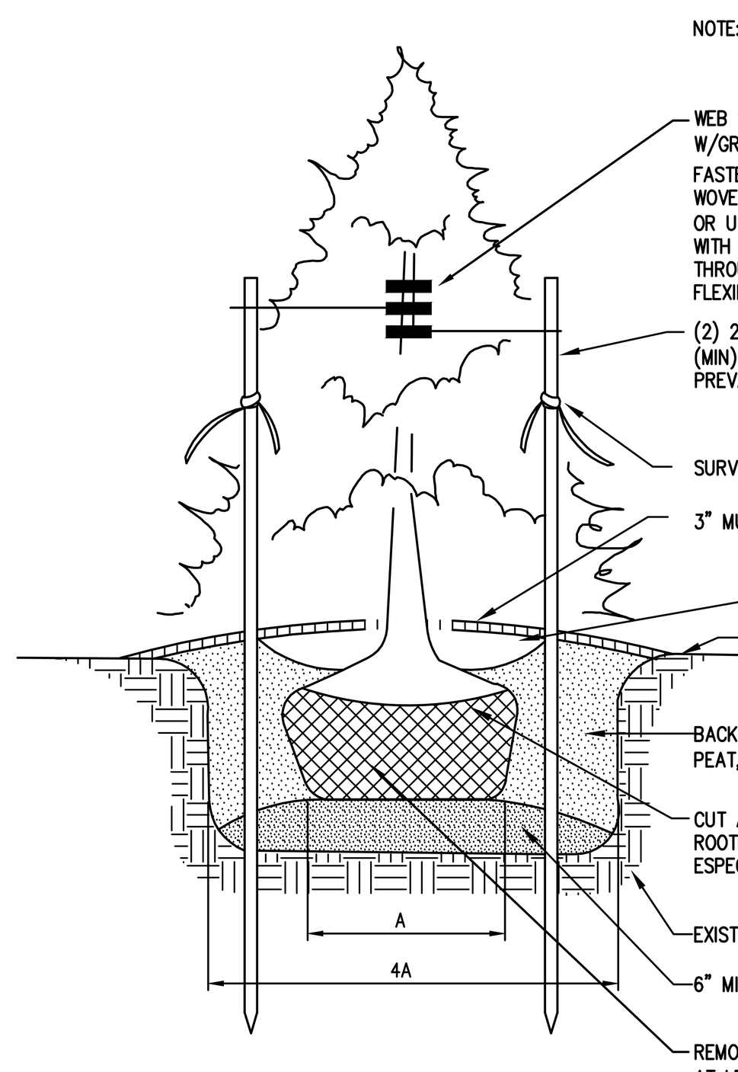
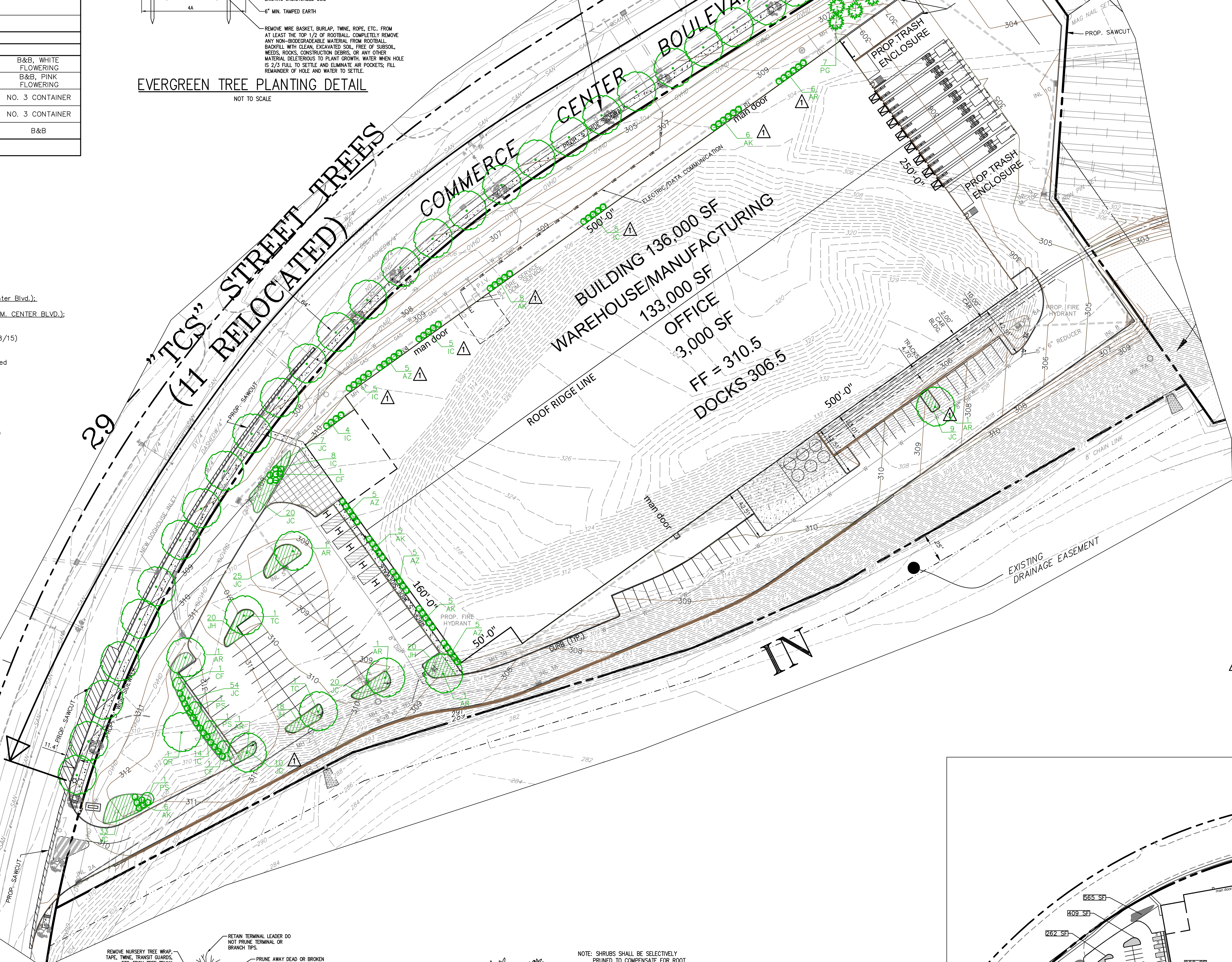
PLANTING SCHEDULE

SYMBOL	BOTANICAL NAME	COMMON NAME	QTY.	SIZE	REMARKS
LARGE DECIDUOUS TREES					
AR	ACER RUBRUM "FRANKSRED"	RED SUNSET RED MAPLE	⚠1 6	3.5" CAL MIN. @ 6" ABOVE GRADE	B&B PARKING LOT TREE
TCS	TILIA CORDATA GREENSPIRE	GREENSPIRE LINDEN	18	3.5" CAL MIN. @ 6" ABOVE GRADE	B&B; STREET TREES
TC	TILIA CORDATA GREENSPIRE	GREENSPIRE LINDEN	2	3.5" CAL MIN. @ 6" ABOVE GRADE	B&B PARKING LOT TREE
QR	QUERCUS RUBRUM	RED OAK	1	3" CAL MIN. @ 6" ABOVE GRADE	B&B; LANDSCAPE CREDIT (1 TREES)
TOTAL LARGE DECIDUOUS TREES = 27 ⚠1					
SMALL FLOWERING TREES					
PS	PRUNUS SERRITELLA "ROSY CLOUD"	ROSY CLOUD CHERRY	5	2" CAL MIN.	B&B; LANDSCAPE CREDIT (5 TREES)
CF	CORNUS FLORIDA	FLOWERING DOGWOOD	3	2" CAL MIN.	B&B; LANDSCAPE CREDIT (3 TREES)
TOTAL SMALL FLOWERING TREES = 8					
EVERGREEN TREES					
PG	PICEA GLAUCA	WHITE SPRUCE	7	7' HGT. MIN.	B&B
TOTAL EVERGREEN TREES = 7					
SHRUBS					
AZ	AZALEA KURUME "DELAWARE VALLEY"	DELAWARE VALLEY AZALEA	26 ⚠1	18" HGT.	B&B, WHITE FLOWERING
AK	AZALEA KURUME "HINO CRIMSON"	HINO CRIMSON AZALEA	27 ⚠1	18" HGT.	B&B, PINK FLOWERING
JH	JUNIPERUS HOR. "WILTONI"	BLUE RUG JUNIPER	113	18" SPD. ⚠1	NO. 3 CONTAINER
JC	JUNIPERUS CONFERTA "BLUE PACIFIC"	BLUE PACIFIC JUNIPER	172 ⚠1	18" SPD. ⚠1	NO. 3 CONTAINER
IC	ILEX CRENATA "HETZII"	LARGE CONVEXED LEAVED HOLLY	42 ⚠1	18" SPD.	B&B
TOTAL SHRUBS = 380 ⚠1					



EVERGREEN TREE PLANTING DETAIL

NOT TO SCALE



LANDSCAPE REQUIREMENTS CONT.

SITE DATA:
Total Lot Area: 7.50 acres (326,735 sq. ft.)
Proposed Outdoor Parking: 98 Spaces

SUMMARY OF LANDSCAPE REQUIREMENTS

City of Bethlehem – Zoning
- Sec. 1318.23 – Buffer Yards – not required; project area zoned IN
- Sec. 1319.02.J.1 – Street Trees (1,170 L.F.)
  - o Required: One (1) tree for every 40' street frontage = 29 trees (Com. Center Blvd.);
- o Proposed: 18 trees proposed, 11 existing trees are in place = 29 total (COM. CENTER BLVD.); 11 existing trees (COM. CENTER BLVD.)
- Sec. 1319.02.J.2 – Parking Lot Trees
  - o Required: One (1) tree for every 15 outdoor parking spaces = 7 trees (98/15)
  - o Proposed: 7 trees (Large Deciduous Trees)
- Sec. 1318.28 – Tree Preservation
  - o Required: Two (2) replacement trees for each +8" dia. existing tree removed; 0 existing trees removed = 0 replacement trees
  - o Proposed: 0 replacement trees proposed on-site (Large Deciduous Trees)

City of Bethlehem – SALDO
- Sec. 1349.08 (a)(4)(5) – Plant Species Selection
  - o Required: Diversity of plant types
  - o Proposed: Variety of species in all categories of plant selections.
- Sec. 1349.08.f (1) – Off-street Parking and Loading Areas
  - o Required: 10% of Parking/Loading areas = 2,853 sq. ft. (28,533 x 10%)
    o Proposed: 3,055 sq. ft. landscape islands

LVIP Protective Covenants (Sec. 305.8.a)
- Proposed Use: Warehouse/Manufacturing (Industrial Use)
- Project Acreage: 7.50 acres (Resultant Acreage: 1.4 Acres)
- Required Deciduous Trees: 1.4 ac. x 4 = 6 trees
- Proposed Deciduous Trees: 6 trees

- Required Evergreen Trees: 1.4 ac. X 5 = 7 TREES
- Proposed Evergreen Trees: 7 trees

■ = PARKING AREA SHADE TREE CREDIT

LANDSCAPE AREA TABULATION

• LANDSCAPE ISLANDS	1,855 sq. ft.
• LANDSCAPE BEDS	3,847 sq. ft.
• DECIDUOUS TREES 1 TREES @ 200 sq. ft.	400 sq. ft.
• FLOWERING TREES 8 TREES @ 100 SQ. FT.	800 Sq. Ft.
PROPOSED AREA:	3,055 sq. ft.
REQUIRED AREA:	2,853 sq. ft.

LANDSCAPE PLAN REQUIREMENTS

LANDSCAPE PROJECT AREA–326,735 S.F./7.50 AC.

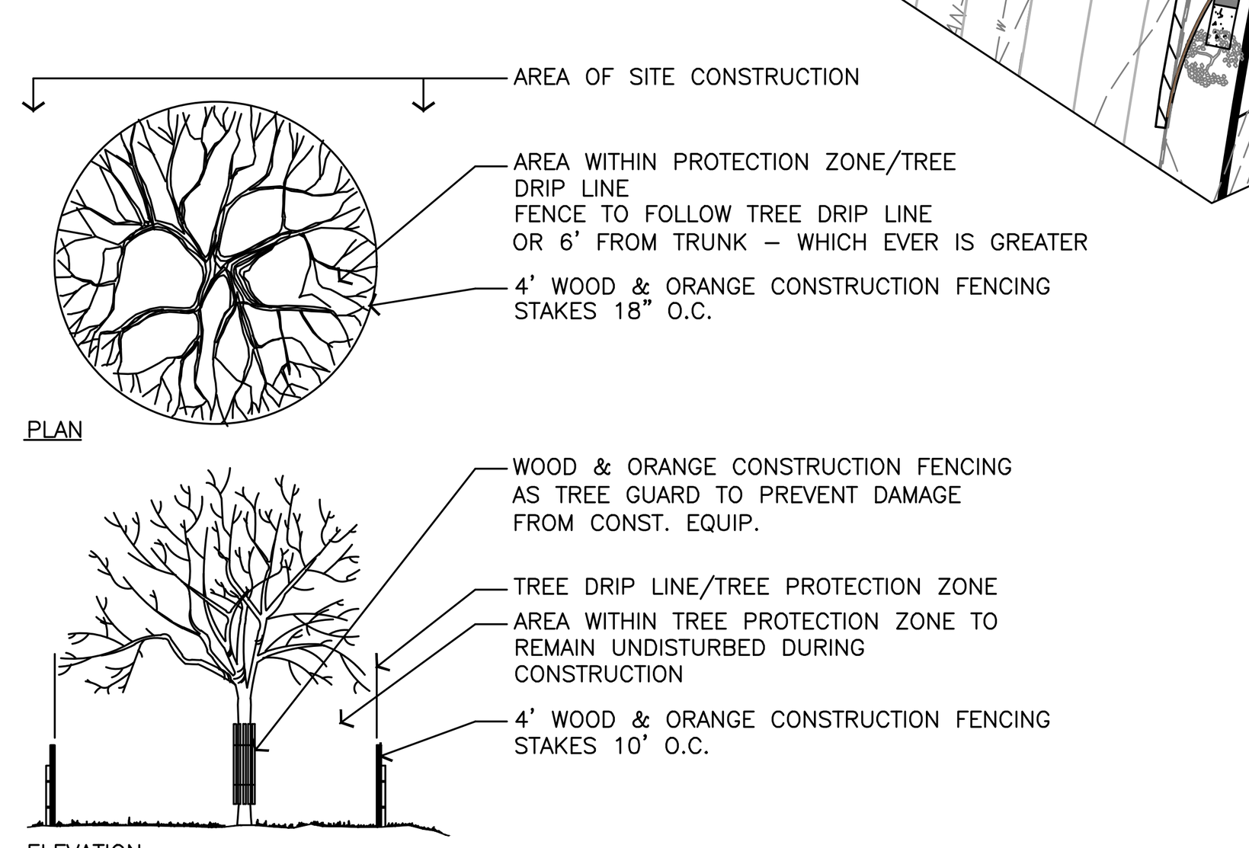
EXISTING IMPERVIOUS WITHIN PROJECT AREA–0 S.F./0 AC.

PROPOSED IMPERVIOUS WITHIN PROJECT AREA–235,291 S.F./5.40 AC.

PROPOSED IMPERVIOUS AREAS:–

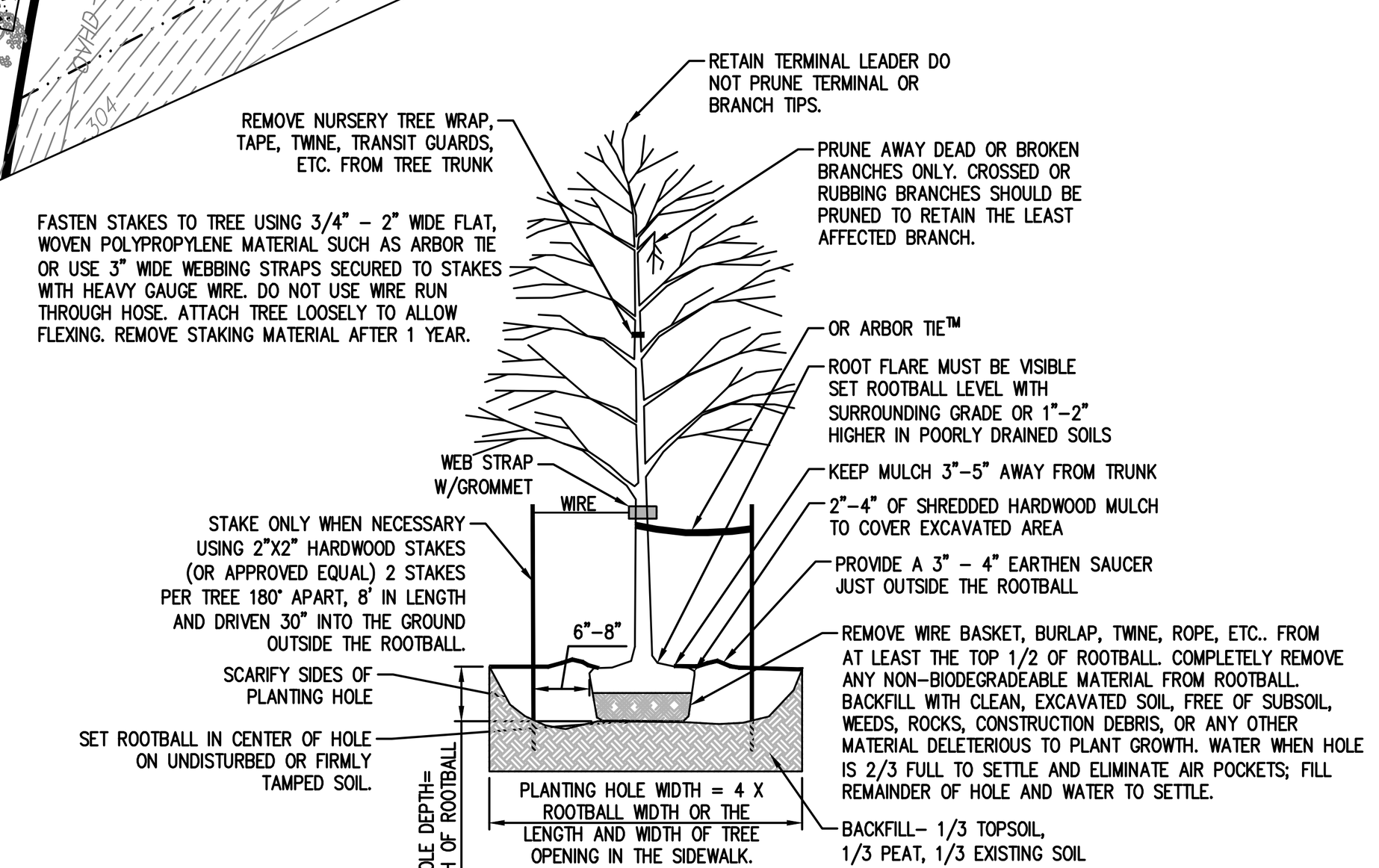
BUILDINGS–	136,000 SF.
SIDEWALKS–	2,885 SF.
PARKING AND DRIVEWAYS (WITH TRASH ENCL.)–	99,291 SF.

PROPOSED BUILDING COVER WITHIN AREA OF CONSTRUCTION = 41.62%



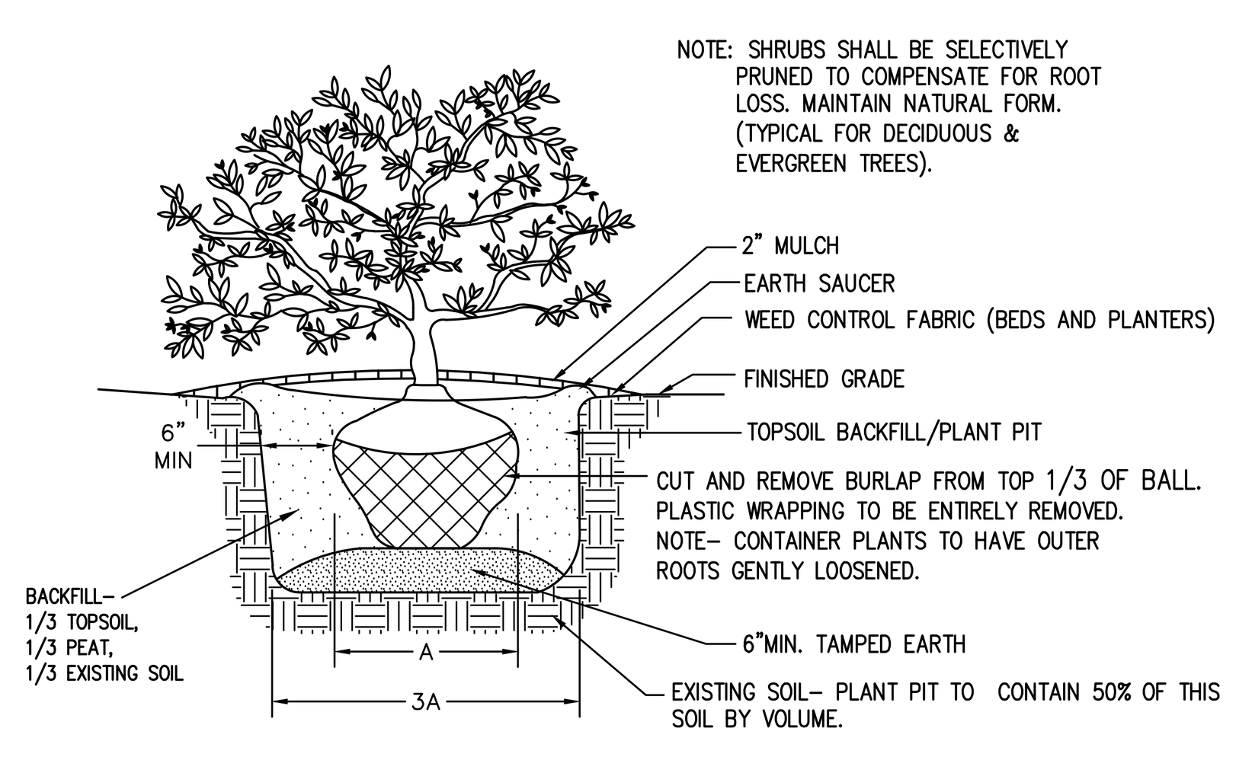
TREE PROTECTION DURING SITE CONSTRUCTION

NOT TO SCALE



DECIDUOUS TREE PLANTING DETAIL

NOT TO SCALE



SHRUB PLANTING DETAIL

NOT TO SCALE

PROTECTION OF TREES AND SHRUBS:

1. NO PERSON SHALL BREAK, INJURE, MUTILATE, KILL OR DESTROY ANY TREE OR SHRUB, OR PERMIT ANY FIRE TO BURN WHERE SUCH FIRE WILL INJURE ANY PORTION OF ANY TREE OR SHRUB IN ANY PUBLIC AREA OF THE CITY.
2. NO PERSON SHALL KNOWINGLY PERMIT ANY LEAK TO EXIST IN ANY GAS PIPE WITHIN THE ROOT ZONE OF ANY TREE OR SHRUB IN A PUBLIC AREA.
3. NO PERSON SHALL PERMIT ANY TOXIC CHEMICAL TO SEEP, DRAIN OR BE EMPTIED ON OR ABOUT ANY TREE OR SHRUB IN A PUBLIC AREA.
4. NO PERSON SHALL KNOWINGLY PERMIT ELECTRIC WIRES TO COME IN CONTACT WITH TREES OR SHRUBS IN ANY PUBLIC AREAS UNLESS PROTECTED BY APPROVED METHODS.
5. NO PERSON SHALL ATTACH ANY ELECTRICAL INSULATION TO ANY TREE OR SHRUB IN A PUBLIC AREA OR SHALL EXCAVATE ANY DITCHES, TUNNELS OR TRENCHES, OR LAY ANY DRIVE WITHIN A RADIUS OF TEN FEET FROM ANY TREE OR SHRUB IN A PUBLIC AREA WITHOUT FIRST OBTAINING PERMISSION FROM THE DIRECTOR.
6. DURING BUILDING OPERATIONS, THE BUILDER SHALL ERECT SUITABLE PROTECTIVE BARRIERS AROUND TREES OR SHRUBS IN PUBLIC AREAS APT TO BE INJURED.
7. WHENEVER THE DIRECTOR DETERMINES IT IS NECESSARY TO MOVE, PROTECT OR CUT OFF THE ELECTRICITY FROM SERVICE WIRES SO HE CAN SAFELY AND PROPERLY DO HIS WORK, HE SHALL SERVE WRITTEN NOTICE ON THE OWNERS OF SUCH WIRES AND SUCH OWNERS SHALL COMPLY WITH SUCH ORDERS WITHIN TWENTY-FOUR HOURS AFTER THE SERVICE OF SUCH NOTICE.
8. NO PERSON SHALL PLACE SALT, BRINE, OIL OR OTHER SUBSTANCES INJURIOUS TO PLANT GROWTH IN ANY PLACE IN SUCH A MANNER AS TO INJURE ANY TREE OR SHRUB IN A PUBLIC AREA.
9. NO PERSON SHALL BUILD ANY FIRE OR STATION ANY TAR KETTLE, ROAD ROLLER OR OTHER ENGINE IN SUCH A MANNER THAT THE HEAT VAPORS OR FUMES THEREFROM MAY INJURE ANY TREE OR SHRUB GROWING IN ANY PUBLIC AREA.
10. NO PERSON IS PERMITTED TO LAY ANY SIDEWALK ALONG OR TO OPEN, CONSTRUCT, CURB OR PAVE ANY STREET OR DO ANY LIKE ACT SO AS TO INTERFERE WITH OR DO INJURY TO ANY TREE OR SHRUB IN A PUBLIC AREA WITHOUT THE CONSENT OF THE DIRECTOR.
11. SHOVELS AND ALL OTHER IMPLEMENTS, MACHINES AND TOOLS SHALL BE USED OR OPERATED IN SUCH A MANNER AS NOT TO DAMAGE OR DESTROY ANY TREE, SHRUB OR PLANT IN ANY PUBLIC AREA.
12. WHERE IN AUTHORIZED EXCAVATIONS IT BECOMES NECESSARY TO EXPOSE OR CUT ROOTS MORE THAN ONE INCH IN DIAMETER, IT SHALL BE THE DUTY OF THE CONTRACTOR TO PROTECT SUCH ROOTS UNDER ADVICE FROM THE DIRECTOR.

GENERAL PLANTING NOTES:

1. THE CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES PRIOR TO BEGINNING CONSTRUCTION. CALL PENNSYLVANIA ONE CALL 1-800-242-1776.
2. THE CONTRACTOR SHALL LAYOUT AND REVIEW ALL PLANT MATERIAL AND PLANT LOCATIONS WITH ARCHITECT OR OWNER PRIOR TO INSTALLATION.
3. SUBSTITUTE SPECIES CAN BE SELECTED FROM THE CITY OF BETHLEHEM "STREET TREE SELECTION AND CARE GUIDE".SUBSTITUTE TREES SHALL BE APPROVED BY THE CITY FORESTER.
4. FIELD CONDITIONS MAY DICTATE MINOR ADJUSTMENTS TO THE LOCATION OF PLANT MATERIAL. BEFORE MAJOR ADJUSTMENTS OF PLANT LOCATIONS OCCUR, THE CONTRACTOR SHALL NOTIFY THE OWNER OR THE ARCHITECT.
7. SUBSTITUTIONS: WHEN PLANTS OF A SPECIFIED TYPE OR SIZE ARE NOT AVAILABLE WITHIN A REASONABLE DISTANCE, SUBSTITUTIONS MAY BE MADE UPON REQUEST BY THE CONTRACTOR, IF APPROVED BY THE OWNER OR THEIR REPRESENTATIVE. THE CONTRACTOR SHALL NOTIFY THE OWNER IN WRITING OF ANY PLANT MATERIALS THAT HE FEELS WILL NOT BE AVAILABLE, PRIOR TO SUBMITTING A BID ON THIS PROJECT. IF A BID IS RECEIVED WITHOUT SUCH QUALIFICATION, IT WILL BE ASSUMED NO SUCH SUBSTITUTIONS WILL BE PROPOSED.
8. ALL AREAS DISTURBED DURING PLANTING ACTIVITY SHALL BE REESTABLISHED AS PERMANENT LAWN WITH THE SPECIFIED SEED MIX AS SUPPLIED BY NORTHAMPTON SEED COMPANY;
   55% CREEPING RED FESCUE
   40% FINE LEAFED PERENNIAL RYEGRASS
   5% KENTUCKY BLUEGRASS
   % EQUALS PROPORTION BY WEIGHT
   SEED AT A RATE OF SIX POUNDS PER 1,000 SQUARE FEET AS SUPPLIED BY NORTHAMPTON SEED COMPANY OR APPROVED EQUAL.
9. ALL TREE AND SHRUB GROUPINGS MAY BE COMPLETELY ENCOMPASSED WITHIN ONE LARGE MULCH BED AT EACH PLANT GROUPING LOCATION. THE MULCH BED SHALL TYPICALLY EXTEND MINIMALLY 2' - 0" PAST THE DRIP ZONE OF TREES OR SHRUBS.
10. PLANTS WITH BROKEN ROOT BALLS OR EXCESSIVE DAMAGE TO THE CROWN SHALL BE REPLACED PRIOR TO INSTALLATION.
11. MULCH FOR TREES, SHRUBS, AND GROUNDCOVER SHALL BE DOUBLE SHREDDED, HARDWOOD BARK MULCH; DARK BROWN IN COLOR; AGED AT LEAST ONE YEAR, AND CLEAN AND FREE OF WEEDS.
12. AFTER INSTALLATION, A PROTECTIVE MULCH SHALL BE APPLIED TO ALL PLANTS TO PREVENT MOISTURE LOSS KEEP MULCH 2-3" AWAY FROM THE TRUNK OF THE TREE.
13. THE CONTRACTOR SHALL APPLY A PRE-EMERGENT WEED KILLER, PREEN (OR APPROVED EQUAL), TO TOPSOIL PRIOR TO MULCHING ACTIVITIES. WATER ACTIVATE IF NECESSARY.
14. TREES IN LEAF WHEN PLANTED SHALL BE TREATED WITH ANTI-DESICCANT SUCH AS WILT-PROOF.
15. PREPARATION OF PLANTING SOIL: BEFORE MIXING, CLEAN TOPSOIL OF ROOTS, VEGETATION, STONES, CLAY LUMPS, AND OTHER EXTRANEOUS MATERIALS HARMFUL TO PLANT GROWTH. PLANTING SOIL FOR TREES, SHRUBS, AND GROUND COVER SHALL BE A MIXTURE BY VOLUME OF THE FOLLOWING:
   50% TOPSOIL
   50% ORGANIC MATTER
16. THE CONTRACTOR IS RESPONSIBLE FOR ANY ADJUSTMENTS TO SOIL PH, FERTILITY, AND/OR DRAINAGE CONDITIONS NECESSARY TO ENSURE PROPER GROWING CONDITIONS FOR PROPOSED PLANTINGS.
17. THE CONTRACTOR IS RESPONSIBLE FOR WATERING, WEEDING, FERTILIZING, AND MAINTAINING ALL NEWLY PLANTED PLANTINGS FOR A PERIOD OF THIRTY DAYS AFTER PLANTING. A WATER SOURCE IS AVAILABLE ON SITE.
18. ALL PLANT MATERIAL SHALL BE OF LARGEST SIZE AND BLOOM POTENTIAL AVAILABLE TO BE OBTAINED BY THE CONTRACTOR.
19. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF PLANT MATERIAL AT THE APPROPRIATE TIME OF YEAR.
20. ALL NEW PLANT MATERIAL SHALL BE WARRANTED FOR A PERIOD OF 18 MONTHS FROM DATE OF FINAL ACCEPTANCE.
21. ALL PLANTS SHALL BE LOCATED TO AVOID PLACEMENT WITHIN SWALE CENTERLINES.
22. ALL PLANTS SHALL BE IN ACCORDANCE WITH THE AMERICAN STANDARD FOR NURSERY STOCK, LATEST EDITION.
23. FOUNDATION PLANTING BEDS AND ENTRY WAY LANDSCAPING MAY BE DESIGNED AT THE DISCRETION OF THE DEVELOPER AT A FUTURE DATE.
24. ALL TREES AND SHRUBBERY SHALL BE OF STANDARD NURSERY STOCK FREE OF DISEASE AND INSECT INFESTATION.
25. PLANTING MATERIAL SHALL BE BALLED AND BURLAPED STOCK. CUT BURLAP AROUND THE ROOT BALL AND FOLD IT DOWN AT LEAST 1/2 WAY.
26. ALL PLANTINGS SHALL INCORPORATE A PEAT MOSS MIXTURE.
27. SHOULD ON-SITE TOPSOIL BE OF INSUFFICIENT VOLUME FOR TREE, SHRUB AND LAWN PLANTING, TOPSOIL SHALL BE IMPORTED TO THE SITE OR EXISTING SITE SOILS AMENDED TO PROVIDE FOR ADEQUATE GROWING MEDIUM DEPTHS.
28. THE FOUNDATION PLAN PLANTINGS SHALL BE PLANTED TO PROVIDE AT LEAST 24" OF CLEARANCE FROM THE PROPOSED BUILDINGS.
29. THE FOUNDATION PLANTINGS SHALL CONSIST OF DROUGHT RESISTANT SHRUBS, PERENNIALS AND SEASONAL PLANTINGS NATIVE TO PENNSYLVANIA.

GENERAL CITY LANDSCAPING NOTES:

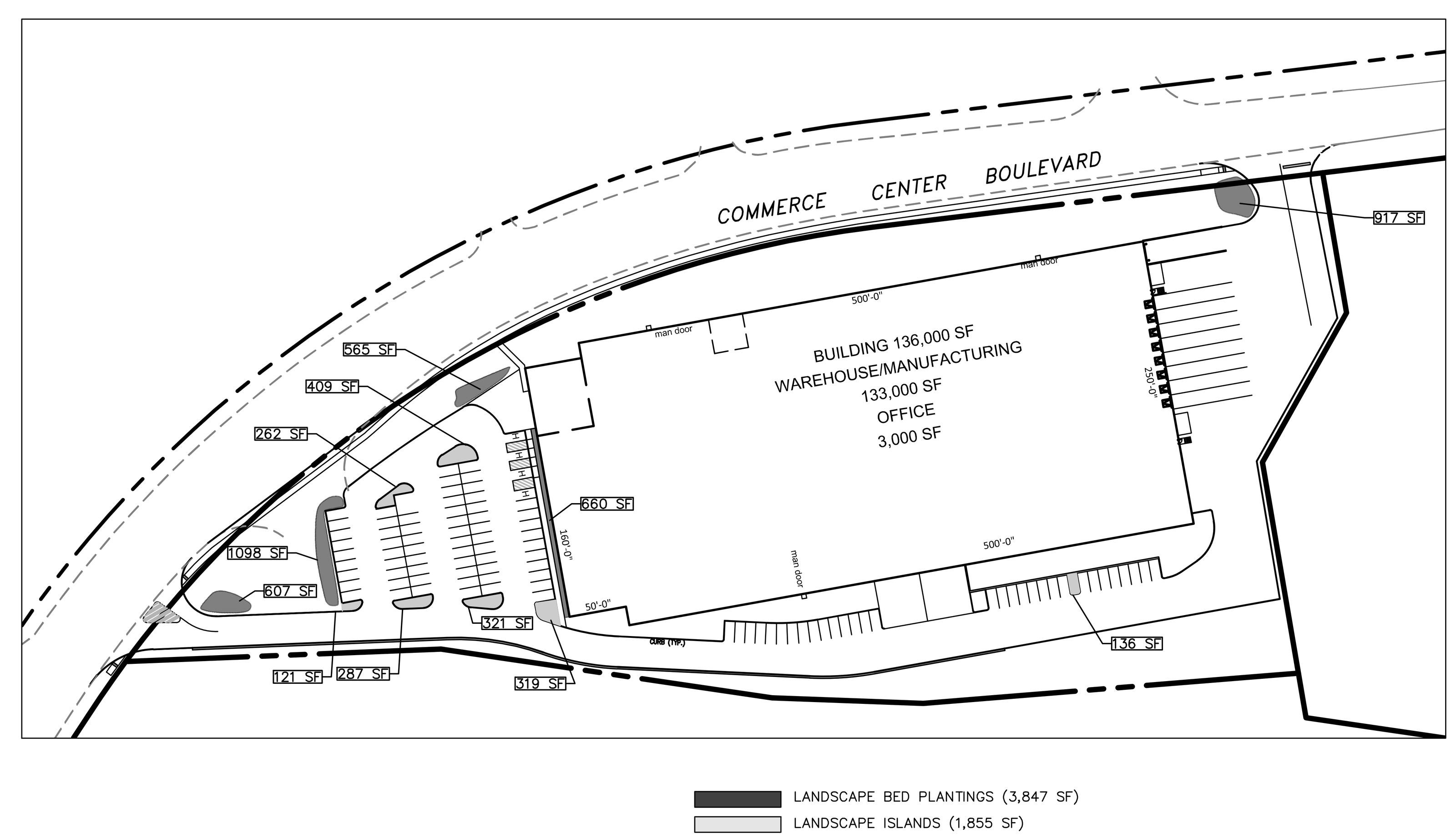
1. NO SOIL DISTURBANCE OR COMPACTION, CONSTRUCTION MATERIALS, TRAFFIC, BURIAL PITS, TRENCHING OR OTHER LAND DISTURBANCE IS ALLOWED IN THE TREE PROTECTION ZONE UNLESS INDICATED ON THE PLAN.
2. TREE PROTECTION BARRICADES MUST BE INSTALLED PRIOR TO ANY DESTRUCTION AND/OR CONSTRUCTION ACTIVITY.
3. THE ROOT PROTECTION ZONE SHALL BE THE AREA ENCOMPASSED BY A CIRCLE WITH A RADIUS EXTENDING 1.25 FT. FROM THE TRUNK OF THE TREE FOR EVERY INCH DBH (DIAMETER AT BREAST HEIGHT) OF THE TREE.
4. VIOLATIONS OF TREE PROTECTION REQUIREMENTS ARE SUBJECT TO PENALTY PER CITY ORDINANCE.
5. ALL TREES ON PUBLIC PROPERTY ARE PROTECTED BY ORDINANCE: NO PRUNING, ROOT PRUNING OF ROOTS OVER ONE INCH IN DIAMETER, AND/OR TREE REMOVAL IS TO BE PERFORMED WITHOUT A PERMIT AND WORK MUST BE PERFORMED BY A CITY LICENSED TREE CONTRACTOR.
6. ALL PLANT MATERIALS ARE TO CONFORM TO THE AMERICAN STANDARD FOR NURSERY STOCK, LATEST EDITION, AMERICAN NURSERY AND LANDSCAPE ASSOCIATION.
7. STREET AND PARKING LOT TREES SHALL BE A MINIMUM OF 14' IN HEIGHT AND HAVE A SINGLE STRAIGHT TRUNK WITH THE FIRST LATERAL BRANCH AT 7' ABOVE THE ROOT BALL. TREES WITH AN UPRIGHT BRANCHING HABIT, SUCH AS ZELKOVA, MAY HAVE THE FIRST LATERAL BRANCH AT 6' ABOVE THE ROOT BALL.
8. ALL LANDSCAPING SHALL CONFORM TO THE CURRENT EDITION OF THE ARBORICULTURAL SPECIFICATIONS AND STANDARDS OF PRACTICE OF THE CITY OF BETHLEHEM.
9. A ROOT CONTROL SYSTEM IS REQUIRED WHEN INSTALLING STREET TREES. THE ROOT BARRIER SHALL BE OF THE BIO-BARRIER TYPE AND A MINIMUM OF EIGHTEEN (18") INCHES WIDE. ANY SUBSTITUTION SHALL BE APPROVED BY THE CITY FORESTER. THE ROOT-CONTROL SYSTEM IS TO BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. TREE OPENINGS IN THE SIDEWALK SHALL HAVE THE BIO-BARRIER INSTALLED ALONG THE FACE OF THE TREE OPENING WHICH IS PARALLEL TO THE STREET AND CLOSEST TO THE PROPERTY LINE, OVERLAPPING THE NEAREST TWO CORNERS BY APPROXIMATELY FOUR (4") INCHES. WHERE TREES ARE TO BE PLANTED IN A PARKWAY OR PLANTING STRIP BETWEEN CURB AND SIDEWALK, THE BARRIER SHALL BE INSTALLED ALONG THE SIDEWALK EDGE CLOSEST TO THE CURB AND CENTERED ON THE ROOT SOURCE. THE LENGTH OF THE BARRIER SHALL BE A MINIMUM LENGTH EQUAL TO THE SPREAD OF THE TREE CANOPY AT MATURITY PLUS TEN (10') FEET.

UNDERGROUND CONDUIT NOTE

THE CONTRACTOR SHALL EXERCISE EXTREME CARE WHEN CUTTING IN THE DRIVEWAY APRONS TO AVOID DAMAGE TO UNDERGROUND POWER LINES. IF DAMAGED, IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR, MOVE, OR READJUST ANY CONDUIT OR POWER FEEDS.

EXISTING TREE NOTE

⚠1 1. NO EXISTING TREES GREATER THAN 8" IN DIAMETER ARE ANTICIPATED TO BE REMOVED FOR THIS PROJECT. ALL THE EXISTING VEGETATION ON-SITE ARE NOT IN GOOD CONDITION AND ARE SCRUB LIKE SPECIES.



■ LANDSCAPE BED PLANTINGS (3,847 SF)
▨ LANDSCAPE ISLANDS (1,855 SF)

LANDSCAPING AREAS EXHIBIT

1"=100'

CHECKED BY: AB	DRAWN BY: DM
DATE: 3/01/22	SCALE: 1"=40'
PROJECT NO. 4920	
SHEET NO. 07 OF 14	

NO.	REVISIONS	DATE
1	PER CITY COMMENT LETTER	6/06/22

SEAL: PENNSYLVANIA RANDALL J. WRIGHT LA-1 REGISTERED LANDSCAPE ARCHITECT

PRELIMINARY/FINAL LAND DEVELOPMENT

PLAN TITLE: LANDSCAPE PLAN AND DETAILS

PROJECT TITLE: LVIP VII – LOT 63
2680 COMMERCE CENTER BLVD.

1" = 40'

CITY OF BETHLEHEM
NORTHAMPTON COUNTY
PENNSYLVANIA

HanoverEngineering
Bethlehem Office
252 Brodhead Road, Suite 100
Bethlehem, PA 18017-8944
P:610.691.5644
F:610.691.6968
HanoverEng.com

Y:\Projects\Private\4920-Lot 63 LVIP\DWG\Current Plan Set\Land Development Plan\ 4920_PLANS-007-Landscape.dwg Jun 09,2022 - 9:05am

Legend

- PROPERTY LINE/RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- ADJOINER PROPERTY LINE
- EXISTING STORM SEWER
- EXISTING CURB
- SAN — EXISTING SANITARY SEWER
- OVHD — EXISTING OVERHEAD ELECTRIC LINE
- GAS — EXISTING GAS MAIN
- W — EXISTING WATER LINE
- EXISTING RIGHT-OF-WAY
- 200 — EXISTING MAJOR CONTOURS
- 202 — EXISTING MINOR CONTOURS
- EXISTING STORM INLET
- EXISTING STORM MANHOLE
- EXISTING SANITARY MANHOLE
- EXISTING WATER VALVE
- EXISTING FIRE HYDRANT
- EXISTING UTILITY POLE
- EXISTING GUY WIRE
- EXISTING LIGHT POLE
- EXISTING IRON PIN
- EXISTING SIGN
- EXISTING TREES
- EXISTING CONCRETE SIDEWALK
- PROPOSED CURB
- PROPOSED CONCRETE SIDEWALK
- 200 — PROPOSED MAJOR CONTOURS
- 201 — PROPOSED MINOR CONTOURS
- UGE — PROPOSED UNDERGROUND ELECTRIC
- GAS — PROPOSED GAS LATERAL
- S LAT — PROPOSED SANITARY LATERAL
- W — PROPOSED WATER LATERAL
- PROP. FIRE HYDRANT/GATE VALVE
- PROPOSED STORM SEWER
- PROPOSED STORM SEWER MANHOLE
- PROPOSED STORM SEWER INLET

Light Pole Footing Notes

COMPACTED FILL

1.ALL FILL SHALL BE PLACED ON VIRGIN SOIL THAT DOES NOT CONTAIN ANY ORGANIC MATTER. BEFORE PROCEEDING WITH ANY FILLING OPERATIONS, STRIP ALL TOPSOIL AND COMPACT THE EXISTING MATERIAL WITH A HEAVY VIBRATORY COMPACTOR MAKING A MINIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557.

2.COMPACT FILL AND BACKFILL IN MAXIMUM 12" LAYERS (LOOSE) TO AT LEAST 95 PERCENT MAXIMUM MODIFIED DENSITY (ASTM D-155) UNDER THE SUPERVISION OF A TESTING LABORATORY APPROVED BY THE ARCHITECT/ENGINEER, AND PAID FOR BY THE GENERAL CONSTRUCTION CONTRACTOR.

FOUNDATION

1.ALL FOOTINGS SHALL BEAR UPON UNDISTURBED SOIL HAVING MINIMUM BEARING CAPACITY OF 1.50 TONS PER SQUARE FOOT (3.00 KSF). THIS REQUIRED BEARING CAPACITY TO BE VERIFIED IN FIELD DURING EXCAVATION. IF ANY UNUSUAL CONDITION IS REVEALED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER IMMEDIATELY. FOUNDATION DESIGN WILL BE MODIFIED IF REQUIRED BY SUCH A SITUATION.

2.BACKFILLING SHALL BE DONE CAREFULLY WITH SMALL COMPACTION EQUIPMENT AFTER TEMPORARY BRACES AND SUPPORTS ARE PROVIDED. NO TRUCK OR BULLDOZER, ETC. SHALL BE ALLOWED CLOSER THAN SIX (6) FEET TO ANY FOOTING.

3.ALL FOOTINGS SHALL BE ADEQUATELY PROTECTED TO PREVENT HEAVING AND/OR MOVEMENT DUE TO FROST UNTIL AFTER BACKFILL/PAVING OPERATIONS.

SOILS NOTES

1.FOOTING DESIGN BASED ON ASSUMED MAXIMUM ALLOWABLE SOILS BEARING CAPACITY OF 2,000 PSF. CONTRACTOR RESPONSIBLE TO VERIFY ADEQUACY OF ASSUMED BEARING CAPACITY PRIOR TO CONSTRUCTION. ENGINEER TO BE NOTIFIED IF INCONSISTENCIES EXIST.

2.SUBGRADE TO BE FREE OF ORGANICS AND BE SUITABLE COMPACTED MATERIAL.

CONCRETE NOTES

1.CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS WITH A MINIMUM CEMENT CONTENT OF 600 POUNDS PER CUBIC YARD FOR ALL FOOTINGS.

2.ALL CONCRETE SHALL HAVE A SLUMP OF NO GREATER THAN 4: TO WITHIN A TOLERANCE OF 1.0".

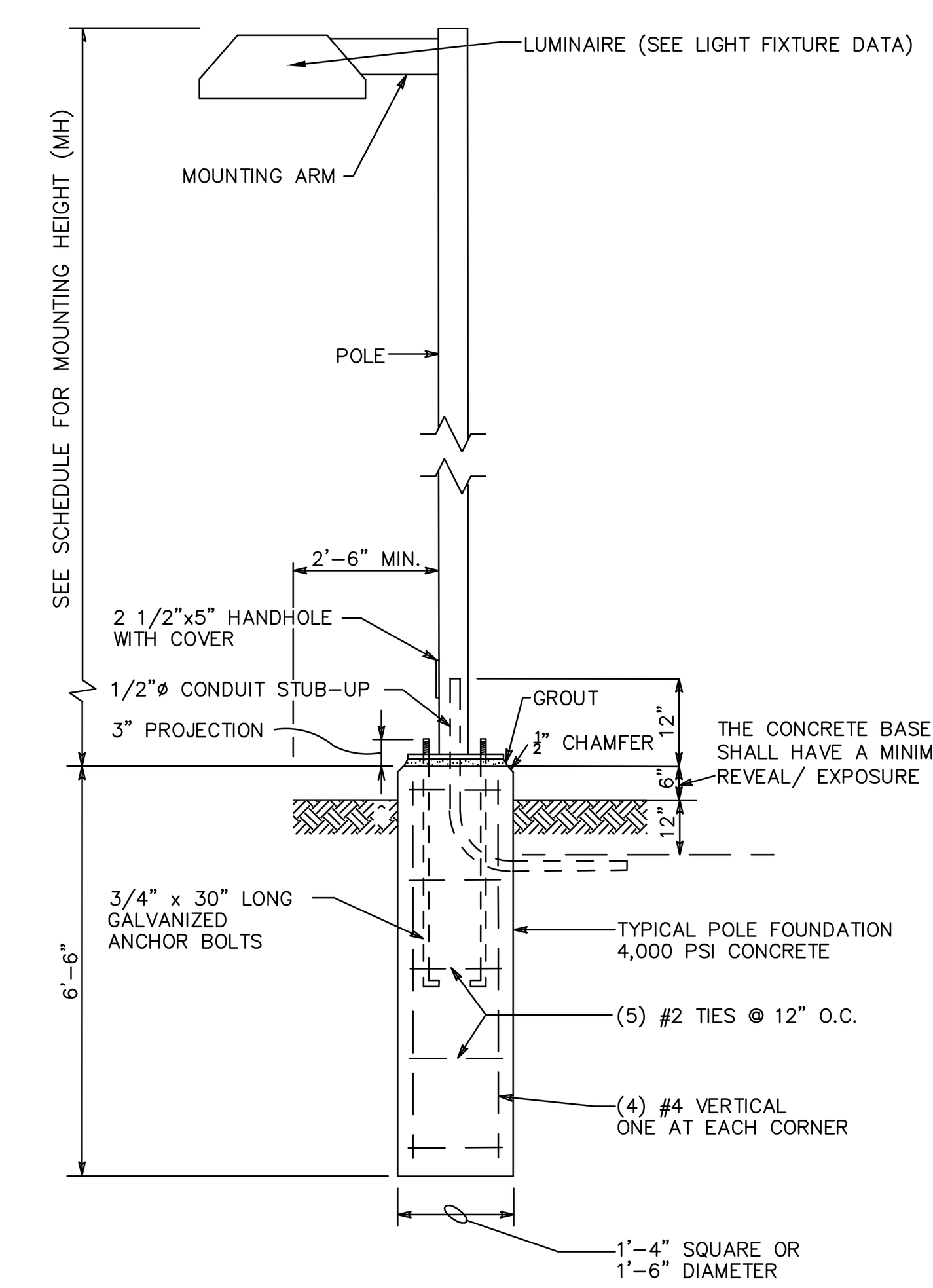
3.ALL EXPOSED CONCRETE SHALL BE AIR-ENTRAINED 6 PERCENT (WITHIN 1 PERCENT TOLERANCE) CONFORMING TO ASTM C260.

4.REINFORCING STEEL BARS SHALL BE A MINIMUM ASTM A615, GRADE 60, AND SHALL BE FIELD WIRED IN PLACE.

ALL FRAMEWORK AND PLACEMENT CONCRETE SHALL COMPLY WITH GOOD CONSTRUCTION PRACTICES AND BE IN ACCORDANCE WITH ALL LOCAL GOVERNING CODES AND REGULATIONS AS WELL AS THE ACI AND UNIFORM BUILDING CODE.

Notes

1. PRICING CAN BE OBTAINED THROUGH ILLUMINATIONS, INC. CONTACT AARON BROWN AT 610-325-2220
2. ALL PROPOSED LIGHT SOURCES SHALL BE PROPERLY DIFFUSED WITH A TRANSLUCENT OR SIMILAR COVER TO PREVENT EXPOSED BULBS FROM BEING DIRECTLY VISIBLE FROM THE ABUTTING STREET OR ADJACENT PARCELS.
3. ALL PROPOSED LIGHT SOURCES SHALL BE SHIELDED AROUND THE LIGHT SOURCE TO PREVENT SPILLAGE ONTO ADJACENT ROADWAYS.



Typical Area Light Detail
(NOT TO SCALE)

LIGHTING NOTES:

⚠1
1. SPECIAL CARE SHALL BE TAKEN WHEN REMOVING THE EXISTING CURBS AND PAVEMENT NOT TO DAMAGE THE EXISTING CONDUITS FOR THE STREET LIGHTS.
2. ALL STREET LIGHTS SHALL REMAIN IN OPERATION DURING THE RELOCATION OF THE STREET LIGHTS.
3. NO STREET LIGHTING ELECTRICAL JUNCTION BOXES SHALL BE ALLOWED IN THE DRIVEWAY.
4. THE CONTRACTOR SHALL COORDINATE WITH GREG CRYDER, CITY ELECTRICIAN @ gcryder@bethlehem-pa.gov PRIOR TO RELOCATION THE EXISTING STREET LIGHTS.

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Estimated LED Lighting At Grade	+	0.4 fc	3.2 fc	0.0 fc	N/A	N/A
Lighting On Paved Areas	✳	1.4 fc	3.2 fc	0.6 fc	5.3:1	2.3:1

Schedule

Symbol	Label	Quantit	Catalog Number	Description	Lamp	Number Lamps	Lumens Per Lamp	Light Loss Factor	Wattage	Mounting HEIGHT
	SL2	4	DSX0 LED P3 30K T2M MVOLT	DSX0 LED P3 30K T2M MVOLT	LED	1	7824	0.95	71	25 FT.
	SL4	5	DSX0 LED P6 30K TFTM MVOLT	DSX0 LED P6 30K TFTM MVOLT	LED	1	14819	0.95	134	25 FT.
	SL5	2	DSX0 LED P6 30K T5W MVOLT	DSX0 LED P6 30K T5W MVOLT	LED	1	15285	0.95	134	25 FT.
	WL4	2	DSX0 LED P3 30K TFTM MVOLT	DSX0 LED P3 30K TFTM MVOLT	LED	1	7841	0.95	71	25 FT.
	WL3	5	DSX0 LED P3 30K T3M MVOLT	DSX0 LED P3 30K T3M MVOLT	LED	1	7616	0.95	71	25 FT.
	WL4--HO	4	DSX0 LED P7 30K TFTM MVOLT	DSX0 LED P7 30K TFTM MVOLT	LED	1	17040	0.95	166	25 FT.

PRELIMINARY/FINAL LAND DEVELOPMENT

PLAN TITLE: LIGHTING PLAN AND DETAILS

PROJECT TITLE: LVIP VII – LOT 63 2680 COMMERCE CENTER BLVD.

1" = 40'

CITY OF BETHLEHEM
NORTHAMPTON COUNTY
PENNSYLVANIA

DRAWN BY: DM	CHECKED BY: AB
SCALE: 1"=40'	DATE: 3/01/22
PROJECT NO. 4920	
SHEET NO. 08 OF 14	

NO.	REVISIONS	DATE
1	PER CITY COMMENT LETTER	6/06/22

SEAL: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER ANDREW THOMAS BOHL PE062856

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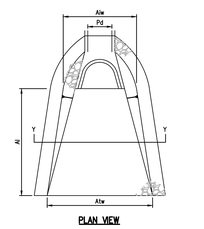
F:610.691.6968
HanoverEng.com

Y:\Projects\Private\4920-Lot 63 LVIP\DWG\Current Plan Set\Land Development Plan\ 4920_PLANS-008- LIGHT PLAN .dwg Jun 08,2022 - 5:15pm

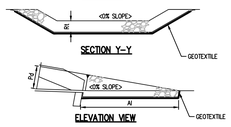
STANDARD CONSTRUCTION DETAIL # 9-1

RIPRAP APRON AT PIPE OUTLET WITH FLARED END SECTION OR ENDWALL

NOT TO SCALE



PLAN VIEW



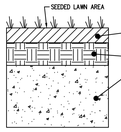
ELEVATION VIEW

PA DEP

OUTLET NO.	PIPE DIA Pd (IN)	RIPRAP SIZE (R-_)	RIPRAP THICK Rt (IN)	APRON LENGTH Ai (FT)	APRON INITIAL WIDTH Aiw (FT)	APRON TERMINAL WIDTH Atw (FT)
FES 1	24	R-4	18	15	6	21
FES 7	24	R-4	18	15	6	21

General Notes:

1. ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.
2. ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.



FOR ADDITIONAL PLANTING DETAILS AND NOTES, SEE SHEET 7, LANDSCAPE PLAN & DETAILS

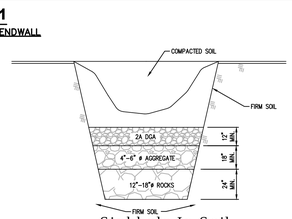
SOIL CAPPING DETAIL

(FOR USE IN UNSUITABLE SOIL AREAS TO BE LANDSCAPED/SEEDED)

NOT TO SCALE

Soil Amendment Note

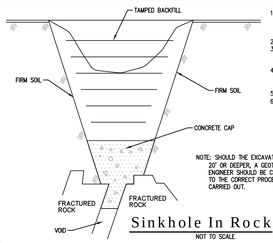
ALL PERVIOUS AREAS WHICH ARE DISTURBED SHALL BE CONSIDERED AMENDED SOILS.



Sinkhole In Soil

NOT TO SCALE

1. THE REPAIR TECHNIQUES AS DESCRIBED BELOW ARE SUITABLE ONLY IF THE SINKHOLE IS LOCATED IN AN OPEN AREA. IF THE SINKHOLE IS LOCATED UNDER OR NEAR A STRUCTURE OR A BUILDING, COMPACTION GROUTING MAY BE NECESSARY FOR REMEDIATION, AS DETERMINED BY A GEOTECHNICAL ENGINEER LICENSED IN THE COMMONWEALTH OF PENNSYLVANIA.
2. EXCAVATE DOWN TO ROCK TO SINKHOLE THROAT OR TO A DEPTH OF 15 FEET BELOW GRADE, WHICHEVER OCCURS FIRST.
3. IF ROCK IS ENCOUNTERED WITHIN 10 FEET, STOP EXCAVATION. THE LIMIT OF EXCAVATION SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER. GENERALLY, A ZONE OF SOFT, IN-FILL MATERIAL WILL BE FOUND WHICH COVERS MOST OF THE BOTTOM OF THE EXCAVATION. COVER THIS AREA WITH A GRADED ROCK FILTER AS SHOWN ABOVE.
4. BACKFILL HOLE WITH RELATIVELY IMPERMEABLE CLAY SOIL. COMPACT SOIL IN 6" LIFTS WITH A POWER TAMPER OR RAMMER TO AT LEAST 95% OF THE STANDARD PROCTOR.
5. BACKFILL HOLE ABOVE EXISTING GRADE TO DIVERT SURFACE WATER.



Sinkhole In Rock

NOT TO SCALE

1. THE REPAIR TECHNIQUES AS DESCRIBED BELOW ARE SUITABLE ONLY IF THE SINKHOLE IS LOCATED IN AN OPEN AREA. IF THE SINKHOLE IS LOCATED UNDER OR NEAR A STRUCTURE OR A BUILDING, COMPACTION GROUTING MAY BE NECESSARY FOR REMEDIATION, AS DETERMINED BY A GEOTECHNICAL ENGINEER LICENSED IN THE COMMONWEALTH OF PENNSYLVANIA.
2. EXCAVATE DOWN TO BEDROCK OR TO THE SINKHOLE THROAT.
3. EXPOSE THE ROCK SURFACE BY WASHING THE AREA WITH A SMALL HOSE WATER SPRAY AND INSTALL HIGHSLUMP CEMENT INTO VOIDS AND CREVICES UNTIL VOIDS ARE FILLED AND A CAP COVERS THE AREA. THE LIMIT OF EXCAVATION AND CONCRETE SHALL BE DETERMINED BY THE ENGINEER.
4. AFTER CONCRETE HAS SET OVERNIGHT, BACKFILL HOLE WITH RELATIVELY IMPERMEABLE CLAY SOIL. COMPACT SOIL IN 6" LIFTS WITH A POWER TAMPER OR RAMMER TO AT LEAST 95% OF THE STANDARD PROCTOR. THE TOP THREE(3) FEET SHALL BE BACKFILLED WITH 2RC CRUSHED AGGREGATE.
5. BACKFILL HOLE ABOVE EXISTING GRADE TO DIVERT SURFACE WATER.
6. WHEN SINKHOLE IS UNDER A PROPOSED UTILITY, CONCRETE IS TO BE SET 6" BELOW THE UTILITY TO ALLOW FOR A STONE BEDDING.

NOTE: SHOULD THE EXCAVATION BECOME 20' OR DEEPER, A GEOTECHNICAL ENGINEER SHOULD BE CONSULTED AS TO THE CORRECT PROCEDURE TO BE CARRIED OUT.

Benchmarks for this Plan

1. NE CORNER (SQUARE CUT) OF A CONCRETE PPL VAULT (669615471716) ON THE SOUTH SIDE OF COMMERCE CENTER BLVD NEAR THE WEST SIDE OF GILCHRIST DRIVE. ELEV=263.38
2. TOP NUT OF FIRE HYDRANT, JUST SOUTH OF HARVARD AVE, ON THE SOUTH SIDE OF GILCHRIST DR. ELEV=299.60
3. TOP NUT OF FIRE HYDRANT, EAST OF FEATHER WAY, ON SOUTH SIDE OF GILCHRIST DR. MARKED AS L7089 ELEV=316.16
4. NW CORNER (SQUARE CUT OF A CONCRETE PPL VAULT(670925475058) ON THE EAST SIDE OF FEATHER WAY, JUST NORTH OF THE CURTIS WRIGHT BUILDING. ELEV=344.36

Soil Types

UbB	Udorthents, limestone, 0 to 8 percent slopes
UbD	Udorthents, limestone, 8 to 25 percent slopes
UkaD	Urban Land, 0 to 8 percent slopes

SOIL LIMITATIONS

LIMITATIONS	RESOLUTIONS
CUTBANKS CAVE	LAYBACK SLOPES
CORROSIVE TO CONCRETE/STEEL	CATHODIC PROTECTION AND/OR CORROSION RESISTANT
DEPTH TO SATURATED ZONE (SEASONAL HIGH WATER TABLE)	KNOW DEPTH TO SATURATION ZONE AND AVOID
HYDRIC / HYDRIC INCLUSIONS	AVOID
LOW STRENGTH / LANDSLIDE PRONE	LAYBACK SLOPES – DESIGN FOR CONDITION
SLOW PERCOLATIONS	DRAINAGE DITCH
PIPING	TEMPORARILY LOWER GROUND WATER TABLE OR PROVIDE FILTERS
FROST ACTION	LOWER FOOTINGS BELOW FROST DEPTHS, PROVIDE POSITIVE SUBGRADE
SHRINK – SWELL	AVOID USE OF HIGHLY PLASTIC CLAYS IN BUILDING AREA
POTENTIAL SINKHOLE	PLUG OR MITIGATE KNOWN SINKHOLES, PROVIDE POSITIVE SURFACE
DROUGHTY	APPLY COMPOST IF MOISTURE RETENTION IS REQUIRED
EASILY ERODABLE	TAKE EXTRA CARE IN IMPLEMENTATION OF ESPC PLAN
FLOODING	USE PUMPED WATER FILTER BAG OR AVOID
POOR SOURCE OF TOPSOIL	IMPORT TOPSOIL
PONDING	USE PUMPED WATER FILTER BAG OR AVOID

Legend

- PROPERTY LINE/RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- ADJOINER PROPERTY LINE
- EXISTING STORM SEWER
- EXISTING CURB
- EXISTING SANITARY SEWER
- EXISTING OVERHEAD ELECTRIC LINE
- EXISTING GAS MAIN
- EXISTING WATER LINE
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- EXISTING STORM INLET
- EXISTING STORM MANHOLE
- EXISTING SANITARY MANHOLE
- EXISTING WATER VALVE
- EXISTING FIRE HYDRANT
- EXISTING UTILITY POLE
- EXISTING GUY WIRE
- EXISTING LIGHT POLE
- EXISTING IRON PIN
- EXISTING SIGN
- EXISTING TREES
- EXISTING CONCRETE SIDEWALK
- PROPOSED CURB
- PROPOSED DEPRESSED CONCRETE CURB
- PROPOSED CONCRETE SIDEWALK
- PROPOSED MAJOR CONTOURS
- PROPOSED MINOR CONTOURS
- PROPOSED UNDERGROUND ELECTRIC
- PROPOSED GAS LATERAL
- PROPOSED SANITARY LATERAL
- PROPOSED WATER LATERAL
- PROPOSED STORM INLET
- PROPOSED STORM SEWER
- PROPOSED STORM SEWER MANHOLE
- PROPOSED PROJECT AREA (8.51 AC)
- PROPOSED LIMIT OF DISTURBANCE (8.51 AC)

Know what's at stake™ Call 811 BEFORE YOU DIG

"CALL BEFORE YOU DIG"

PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE – STOP CALL

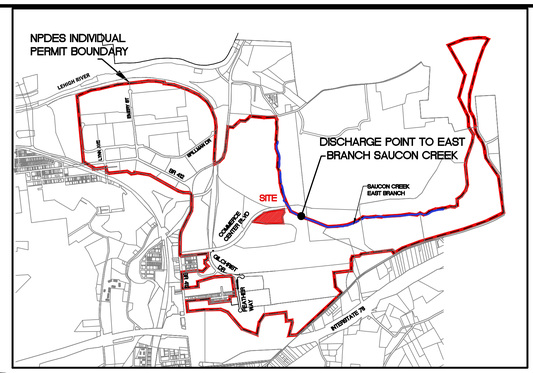
PENNSYLVANIA ONE CALL SYSTEM, INC.

1-800-242-1776

THIS PROJECT'S DESIGNER INQUIRY NO.

20212924212

PROJECT / SERIAL NUMBERS/ EXCAVATION–DEMOLITION	/ TYPE OF ONE CALL /	DATE	/ ADDRESS	/ NEAREST INT. /	TOWNSHIP	/ COUNTY
4920 20212924212	EXCAVATION ROUTINE	10/26/2021	COMMERCE CENTER BLVD	GILCHRIST DR	CITY OF BETHLEHEM	NORTHAMPTON



Location Map

SCALE: 1" = 2,000'

Stormwater Management BMP's

SOIL AMENDMENT & RESTORATION (BMP 6.7.3)

Receiving Waters

EAST BRANCH SAUCON CREEK (CWF-MF)

Co-Permittee

PUSH HOLDING, INC.
9005 SMITH'S MILL ROAD
NEW ALBANY, OH 43054
PHONE 614.706.5933

Owner/ Applicant

LVIP, INC.
1720 SPILLMAN DRIVE, SUITE 150
BETHLEHEM, PA 18015–2164
PHONE 610.866.4600

Property Identification

2680 COMMERCE CENTER BLVD.
BETHLEHEM, PA 18015
TAX MAP REFERENCED:
MAP P7, BLOCK 22 LOT 2–4G–1
DEED REFERENCED:
2004–1–209584

Plan Preparer

ANDREW BOHL, PE
HANOVER ENGINEERING ASSOCIATES, INC.
252 BRODHEAD ROAD, SUITE 100
BETHLEHEM, PA 18017–8944
PHONE (610) 691–5644
FAX (610) 691–6968

THE LANDOWNER ACKNOWLEDGES THAT THE STORMWATER BMPS ARE FIXTURES THAT CANNOT BE ALTERED OR REMOVED WITHOUT APPROVAL BY THE MUNICIPALITY.

OWNER'S SIGNATURE _____ DATE _____

SWORN AND SUBSCRIBED BEFORE ME THIS _____ DAY OF _____, 20

NOTARY PUBLIC

Critical Stages

A LICENSED PROFESSIONAL OR DESIGNEE SHALL BE PRESENT FOR CRITICAL STAGES OF INSTALLATION FOR STORMWATER BMPS. THE FOLLOWING ARE THE BMPS THAT CONTAIN CRITICAL STAGES:

1. SOIL AMENDMENT AND RESTORATION
   - VERIFICATION OF PLACEMENT OF CLEAN FILL/TOPSOIL CAP

REFER TO INDIVIDUAL BMP DETAILS AND SPECIFICATIONS FOR SPECIFIC CRITICAL STAGES.

PCSM BMP Sequence of Construction

1. CLEARLY DELINEATE PROTECTED AREAS PRIOR TO START OF CONSTRUCTION TO ENSURE THESE AREAS ARE NOT DISTURBED.
2. UPON COMPLETION OF FINAL GRADING AND PLACEMENT OF TOPSOIL, PERFORM SOIL AMENDMENT AND RESTORATION PER SOIL CAPPING DETAIL AND AS SPECIFIED UNDER THE SOIL AMENDMENT AND RESTORATION NOTES.
3. AFTER CONSTRUCTION HAS BEEN COMPLETED AND THE SITE IS OPERATING AS DESIGNED, BEGIN STREET SWEEPING PROGRAM.

Long-Term BMP Operations and Maintenance

THE OPERATIONS AND MAINTENANCE OF THE POST CONSTRUCTION STORMWATER MANAGEMENT BMP'S IS THE RESPONSIBILITY OF THE OWNER. THE RESPONSIBILITY FOR LONG–TERM OPERATION AND MAINTENANCE OF THE POST CONSTRUCTION STORMWATER MANAGEMENT BMP'S IS A COVENANT THAT RUNS WITH THE LAND THAT IS BINDING UPON AND ENFORCEABLE BY SUBSEQUENT GRANTEES.

PCSM Standard Notes:

GENERAL

THE MAINTENANCE OF THE STORMWATER FACILITIES ARE THE RESPONSIBILITY OF THE PROPERTY OWNER. THE OWNER'S DEED AND THE DEEDS TO ANY SUBSEQUENT OWNER, SHALL NOTE THAT THE OWNER SHALL ACCEPT THE MAINTENANCE RESPONSIBILITIES OF ANY FACILITIES NOT DEDICATED. THE MUNICIPALITY SHALL BE PERMITTED TO INSPECT THE STORMWATER FACILITIES ON, AT LEAST, AN ANNUAL SCHEDULE TO ENSURE THAT ANY NECESSARY CORRECTIVE WORK IS PERFORMED IN A TIMELY MANNER.

ANY REVISIONS TO THE PCSM PLAN WILL REQUIRE CONSERVATION DISTRICT APPROVAL.

PERMIT TERMINATION

UPON PERMANENT STABILIZATION OF THE EARTH DISTURBANCE ACTIVITY UNDER §102.22(a)(2) (RELATING TO PERMANENT STABILIZATION), AND INSTALLATION OF BMPS IN ACCORDANCE WITH AN APPROVED PLAN PREPARED AND IMPLEMENTED IN ACCORDANCE WITH §102.4 AND §102.8 (RELATING TO EROSION AND SEDIMENT CONTROL REQUIREMENTS; AND PCSM REQUIREMENTS), THE PERMITTEE OR CO–PERMITTEE SHALL SUBMIT A NOTICE OF TERMINATION TO THE DEPARTMENT OR CONSERVATION DISTRICT.

THE NOTICE OF TERMINATION MUST INCLUDE:
(1) THE FACILITY NAME, ADDRESS AND LOCATION.
(2) THE OPERATOR NAME AND ADDRESS.
(3) THE PERMIT NUMBER.
(4) THE REASON FOR PERMIT TERMINATION.
(5) IDENTIFICATION OF THE PERSONS WHO HAVE AGREED TO AND WILL BE RESPONSIBLE FOR LONG–TERM OPERATION AND MAINTENANCE OF THE PCSM BMPS IN ACCORDANCE WITH §102.8(m) AND PROOF OF COMPLIANCE WITH §102.8(m)(2).

PCSM REQUIREMENTS

PCSM REPORTING AND RECORDKEEPING: THE PCSM PLAN, INSPECTION REPORTS AND MONITORING RECORDS SHALL BE AVAILABLE FOR REVIEW AND INSPECTION BY THE DEPARTMENT OR THE CONSERVATION DISTRICT.

LICENSED PROFESSIONAL OVERSIGHT OF CRITICAL STAGES: A LICENSED PROFESSIONAL OR A DESIGNEE SHALL BE PRESENT ONSITE AND BE RESPONSIBLE DURING CRITICAL STAGES OF IMPLEMENTATION OF THE APPROVED PCSM PLAN. THE CRITICAL STAGES MAY INCLUDE THE INSTALLATION OF UNDERGROUND TREATMENT OR STORAGE BMPS, STRUCTURALLY ENGINEERED BMPS, OR OTHER BMPS AS DEEMED APPROPRIATE BY THE DEPARTMENT OR THE CONSERVATION DISTRICT.

FINAL CERTIFICATION: THE PERMITTEE SHALL INCLUDE WITH THE NOTICE OF TERMINATION "RECORD DRAWINGS" WITH A FINAL CERTIFICATION STATEMENT FROM A LICENSED PROFESSIONAL WHICH READS AS FOLLOWS: "I (NAME) DO HEREBY CERTIFY PURSUANT TO THE PENALTIES OF 18 PA.C.S.A. §4904 TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF, THAT THE ACCOMPANYING RECORD DRAWINGS ACCURATELY REFLECT THE AS–BUILT CONDITIONS, ARE TRUE AND CORRECT, AND ARE IN CONFORMANCE WITH CHAPTER 102 OF THE RULES AND REGULATIONS OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION AND THAT THE PROJECT SITE WAS CONSTRUCTED IN ACCORDANCE WITH THE APPROVED PCSM PLAN, ALL APPROVED PLAN CHANGES AND ACCEPTED CONSTRUCTION PRACTICES."

(1) THE PERMITTEE SHALL RETAIN A COPY OF THE RECORD DRAWINGS AS A PART OF THE APPROVED PCSM PLAN.

(2) THE PERMITTEE SHALL PROVIDE A COPY OF THE RECORD DRAWINGS AS A PART OF THE APPROVED PCSM PLAN TO THE PERSON IDENTIFIED IN THIS SECTION AS BEING RESPONSIBLE FOR THE LONG–TERM OPERATION AND MAINTENANCE OF THE PCSM BMPS.

PCSM LONG TERM OPERATIONS AND MAINTENANCE REQUIREMENTS

UNTIL THE PERMITTEE OR CO–PERMITTEE HAS RECEIVED WRITTEN APPROVAL OF A NOTICE OF TERMINATION, THE PERMITTEE OR CO–PERMITTEE WILL REMAIN RESPONSIBLE FOR COMPLIANCE WITH THE PERMIT TERMS AND CONDITIONS INCLUDING LONG–TERM OPERATION AND MAINTENANCE FOR ALL PCSM BMPS ON THE PROJECT SITE AND IS RESPONSIBLE FOR VIOLATIONS OCCURRING ON THE PROJECT SITE. THE DEPARTMENT OR CONSERVATION DISTRICT WILL CONDUCT A FINAL INSPECTION AND APPROVE OR DENY THE NOTICE OF TERMINATION WITHIN 30 DAYS.

THE PERMITTEE OR CO–PERMITTEE SHALL BE RESPONSIBLE FOR LONG–TERM OPERATION AND MAINTENANCE OF PCSM BMPS UNLESS A DIFFERENT PERSON IS IDENTIFIED IN THE NOTICE OF TERMINATION AND HAS AGREED TO LONG–TERM OPERATION AND MAINTENANCE OF PCSM BMPS.

FOR ANY PROPERTY CONTAINING A PCSM BMP, THE PERMITTEE OR CO–PERMITTEE SHALL RECORD AN INSTRUMENT WITH THE RECORDER OF DEEDS WHICH WILL ASSURE DISCLOSURE OF THE PCSM BMP AND THE RELATED OBLIGATIONS IN THE ORDINARY COURSE OF A TITLE SEARCH OF THE SUBJECT PROPERTY. THE RECORDED INSTRUMENT MUST IDENTIFY THE PCSM BMP, PROVIDE FOR NECESSARY ACCESS RELATED TO LONG–TERM OPERATION AND MAINTENANCE FOR PCSM BMPS AND PROVIDE NOTICE THAT THE RESPONSIBILITY FOR LONG–TERM OPERATION AND MAINTENANCE OF THE PCSM BMP IS A COVENANT THAT RUNS WITH THE LAND THAT IS BINDING UPON AND ENFORCEABLE BY SUBSEQUENT GRANTEES, AND PROVIDE PROOF OF FILING WITH THE NOTICE OF TERMINATION UNDER §102.7(b)(5) RELATING TO PERMIT TERMINATION.

THE PERSON RESPONSIBLE FOR PERFORMING LONG–TERM OPERATION AND MAINTENANCE MAY ENTER INTO AN AGREEMENT WITH ANOTHER PERSON INCLUDING A CONSERVATION DISTRICT, NONPROFIT ORGANIZATION, MUNICIPALITY, AUTHORITY, PRIVATE CORPORATION OR OTHER PERSON, TO TRANSFER THE RESPONSIBILITY FOR PCSM BMPS OR TO PERFORM LONG–TERM OPERATION AND MAINTENANCE AND PROVIDE NOTICE THEREOF TO THE DEPARTMENT.

A PERMITTEE OR CO–PERMITTEE THAT FAILS TO TRANSFER LONG–TERM OPERATION AND MAINTENANCE OF THE PCSM BMP OR OTHERWISE FAILS TO COMPLY WITH THIS REQUIREMENT SHALL REMAIN JOINTLY AND SEVERALLY RESPONSIBLE WITH THE LANDOWNER FOR LONG–TERM OPERATION AND MAINTENANCE OF THE PCSM BMPS LOCATED ON THE PROPERTY.

BMP 6.7.3 Soil Amendment & Restoration Notes

1. SOIL AMENDMENT AND RESTORATION SHOULD NOT TAKE PLACE WITHIN THE DRIP LINE OF TREES OR TREE LINE.
2. PERFORM SOIL AMENDMENT AND RESTORATION PER, THE SOIL CAPPING DETAIL, IN ALL PERVIOUS AREAS WHICH ARE DISTURBED.
3. SOIL AMENDMENT MEDIA USUALLY CONSISTS OF COMPOST, BUT CAN INCLUDE MULCH, MANURES, SANDS, AND MANUFACTURED MICROBIAL SOLUTIONS.
4. VERY COARSE COMPOST SHOULD BE AVOIDED AS IT WILL MAKE PLANTING AND VEGETATION ESTABLISHMENT MORE DIFFICULT.
5. ON–SITE SOILS WITH AN ORGANIC CONTENT OF AT LEAST 5% CAN BE PROPERLY STOCKPILED (TO MAINTAIN ORGANIC CONTENT) AND REUSED.

Sequence of Construction

1. ALL CONSTRUCTION SHOULD BE COMPLETED AND STABILIZED BEFORE BEGINNING SOIL AMENDMENT AND RESTORATION.
2. TREATMENT OF COMPACTION WILL VARY BASED ON IF SOIL COMPACTION IS CONSIDERED MINOR OR MAJOR.
   A. MINOR COMPACTION (SURFACE COMPACTION WITHIN 8–12" DUE TO CONTACT PRESSURE, AXLE LOAD GREATER THAN 10 TONS) SHOULD BE TREATED BY ADDING 6 INCHES OF COMPOST/AMENDMENT AND TILL UP TO 8 INCHES.
   B. MAJOR COMPACTION (DEEP COMPACTION, CONTACT PRESSURE, AND TOTAL LOAD, AXLE LOAD GREATER THAN 20 TONS) SHOULD BE TREATED BY ADDING 10 INCHES OF COMPOST/AMENDMENT AND TILL UP TO 20 INCHES.
3. TILLING SHOULD BE PERFORMED BEFORE COMPOST IS PLACED AND AFTER EXCAVATION IS COMPLETED. DURING TILLING (OR RIPPING) OF THE SUBGRADE REMOVE ROCKS/BOULDERS.
4. DISTRIBUTE THE COMPOST, SPREAD THE NUTRIENTS, ROTOTILL AGAIN. COMPOST SHOULD BE ADDED AT A RATE OF 2:1 (SOIL:COMPOST). IF A PROPRIETY PRODUCT IS USED, THE MANUFACTURER'S INSTRUCTIONS SHOULD BE FOLLOWED IN TERMS OF MIXING AND APPLICATION RATE.

Critical Stages

A LICENSED PROFESSIONAL OR DESIGNEE SHALL BE PRESENT FOR THE FOLLOWING CRITICAL STAGES OF CONSTRUCTION FOR THE SOIL AMENDMENT AND RESTORATION.

1. VERIFICATION OF INSTALLATION
   A. VERIFICATION OF PLACEMENT OF CLEAN FILL/TOPSOIL CAP.

Responsible Party

1. DURING CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF THE SOIL AMENDMENT AND RESTORATION AREAS.
2. ONCE ALL CONSTRUCTION HAS BEEN COMPLETED, THE PROPERTY OWNER WILL BECOME RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF THE SOIL AMENDMENT AND RESTORATION AREAS.

Maintenance and Operation Schedule

1. INSPECT AMENDED AREAS ANNUALLY. IF THE AREA HAS BECOME COMPACTED, THE SOIL AMENDMENT AND RESTORATION PROCESS SHOULD BE REPEATED.

BMP 5.6.1 Minimize Total Disturbed Area Notes

1. THE AREA OF "MINIMIZED TOTAL DISTURBED AREA" AS DEPICTED ON THIS PLAN SHALL BE PROTECTED FROM DISTURBANCE DURING AND AFTER CONSTRUCTION.
2. ANY AREAS WITHIN THE "MINIMIZED TOTAL DISTURBED AREA" THAT ARE UNINTENTIONALLY DISTURBED SHALL BE REPLANTED WITH NATIVE SPECIES VEGETATION.

Sequence of Construction

1. PRIOR TO COMMENCEMENT OF EARTH DISTURBANCE ACTIVITIES THE AREA OF "MINIMIZED TOTAL DISTURBED AREA" SHALL BE ADEQUATELY DELINEATED AND PROTECTED FROM DISTURBANCE.
2. AND AREAS WITHIN THE "MINIMIZED TOTAL DISTURBED AREA" THAT ARE UNINTENTIONALLY DISTURBED SHALL BE IMMEDIATELY REPLANTED WITH NATIVE SPECIES VEGETATION.

Responsible Party

1. DURING CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF THE "MINIMIZED TOTAL DISTURBANCE" AREAS.
2. ONCE ALL CONSTRUCTION HAS BEEN COMPLETED, THE PROPERTY OWNER WILL BECOME RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF THE "MINIMIZED TOTAL DISTURBANCE" AREAS.

Maintenance and Operation Schedule

1. INSPECT AREAS ANNUALLY. TREES SHALL BE PRUNED AS NECESSARY TO MAINTAIN TREE HEALTH. INVASIVE NON–NATIVE VEGETATION MAY BE REMOVED. DEAD TREES MAY BE REPLACED AND ADDITIONAL VEGETATION MAY BE PLANTED.

RECYCLING AND DISPOSAL OF MATERIALS

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO BE FAMILIAR WITH, AND TO INFORM HIS WORKERS OF ALL LOCAL, STATE, AND FEDERAL ENVIRONMENTAL REGULATIONS REGARDING THE CONDUCT OF WORK AND HANDLING OF MATERIALS ON THE PROJECT, AND TO PERFORM ALL ACTIVITIES IN ACCORDANCE WITH THOSE REGULATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING EMERGENCY RESPONSE PLANS FOR HAZARDOUS OR POLLUTING MATERIALS USED IN THE WORK.

ALL RUBBISH OR WASTE MATERIALS PRODUCED BY CONTRACTOR'S WORKERS SHALL BE PROTECTED FROM DISSEMINATION BY WIND, RAIN, OR ANIMALS, AND SHALL BE LEGALLY DISPOSED OF REGULARLY. ANY CONSTRUCTION DEBRIS OR OTHER UNSUITABLE MATERIALS TRAPPED BY SILT BARRIER FACILITIES SHALL BE SEPARATED FROM SOIL MATERIALS AND DISPOSED OF IN A LAWFUL MANNER.

SEDIMENT WHICH HAS BEEN TRAPPED BY SILT BARRIER FACILITIES MUST BE REMOVED AND STOCKPILED OR REDISTRIBUTED ON THE PROJECT SITE. SEDIMENT WHICH COLLECTS TO THE SPECIFIED CLEAN–OUT ELEVATION IN THE BOTTOM OF STORMWATER MANAGEMENT PONDS, OR THE SPECIFIED ELEVATIONS IN SEDIMENT TRAPS, MUST BE REMOVED AND STOCKPILED OR REDISTRIBUTED AND STABILIZED ON THE PROJECT SITE.

WASHING OF FILTER STONE AND RE–DISTRIBUTION OF WET SEDIMENT FROM BASINS, TRAPS OR OTHER FACILITIES SHALL BE ONLY PERMITTED UPHILL OF AN EFFECTIVE SEDIMENT FILTER FACILITY. SILT LADEN RUNOFF SHALL NOT BE ALLOWED TO FLOW DIRECTLY TO UNPROTECTED CATCH BASINS, PONDS, ADJACENT PROPERTIES, ROADS, STREAMS OR WETLANDS.

IF THE CONTRACTOR EXPECTS TO RECYCLE OR DISPOSE OF ANY SOIL OR ROCK MATERIAL TO LOCATIONS OTHER THAN THE PROJECT AREA FOR WHICH THIS PLAN AND NARRATIVE HAVE BEEN PREPARED, THE CONTRACTOR SHALL ARRANGE FOR PREPARATION AND SUBMITTAL TO THE APPROPRIATE COUNTY CONSERVATION DISTRICT OF EROSION AND SEDIMENT CONTROL PLANS FOR ALL SUCH OFF–PROJECT AREAS PRIOR TO COMMENCEMENT OF WORK.

NO.	REVISIONS	DATE
1	PER CITY COMMENT LETTER	6/06/22

DRAWN BY: BM | CHECKED BY: AB | DATE: 3/01/22 | SCALE: 1"=40' | PROJECT NO. 4920 | SHEET NO. 9 OF 14

PRELIMINARY/FINAL LAND DEVELOPMENT

PLAN TITLE: POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

PROJECT TITLE: LVIP VII – LOT 63
2680 COMMERCE CENTER BLVD.

CITY OF BETHLEHEM
NORTHAMPTON COUNTY
PENNSYLVANIA

SEAL

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — ANDREW THOMAS BOHL — ENGINEER

Hanover Engineering
Bethlehem Office
252 Brodhead Road, Suite 100
Bethlehem, PA 18017–8944
P:610.691.5644
F:610.691.6968
HanoverEng.com

Legend

	PROPERTY LINE/RIGHT-OF-WAY
	EXISTING RIGHT-OF-WAY
	ADJOINER PROPERTY LINE
	EXISTING STORM SEWER
	EXISTING CURB
—SAN—SAN—SAN—	EXISTING SANITARY SEWER
—OVHD—OVHD—OVHD—	EXISTING OVERHEAD ELECTRIC LINE
—GAS—GAS—GAS—	EXISTING GAS MAIN
—W—W—W—	EXISTING WATER LINE
— 200 —	EXISTING MAJOR CONTOURS
— 202 —	EXISTING MINOR CONTOURS
	EXISTING STORM INLET
	EXISTING STORM MANHOLE
	EXISTING SANITARY MANHOLE
	EXISTING WATER VALVE
	EXISTING FIRE HYDRANT
	EXISTING UTILITY POLE
	EXISTING GUY WIRE
	EXISTING LIGHT POLE
	EXISTING IRON PIN
	EXISTING SIGN
	EXISTING TREES
	EXISTING CONCRETE SIDEWALK
	PROPOSED CURB
	PROPOSED DEPRESSED CONCRETE CURB
	PROPOSED CONCRETE SIDEWALK
—UGE—UGE—UGE—UGE—UGE—	PROPOSED UNDERGROUND ELECTRIC
—GAS—GAS—GAS—GAS—	PROPOSED GAS LINE
—S LAT—S LAT—S LAT—S LAT—	PROPOSED SANITARY SEWER LINE
—W—W—W—W—W—W—	PROPOSED WATER LINE
	PROP. FIRE HYDRANT/GATE VALVE
	PROPOSED STORM SEWER
	PROPOSED STORM SEWER MANHOLE
	PROPOSED STORM SEWER INLET

Know what's at stake™ Call 811 BEFORE YOU DIG

"CALL BEFORE YOU DIG"

PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE – STOP CALL

PENNSYLVANIA ONE CALL SYSTEM, INC.

1–800–242–1776

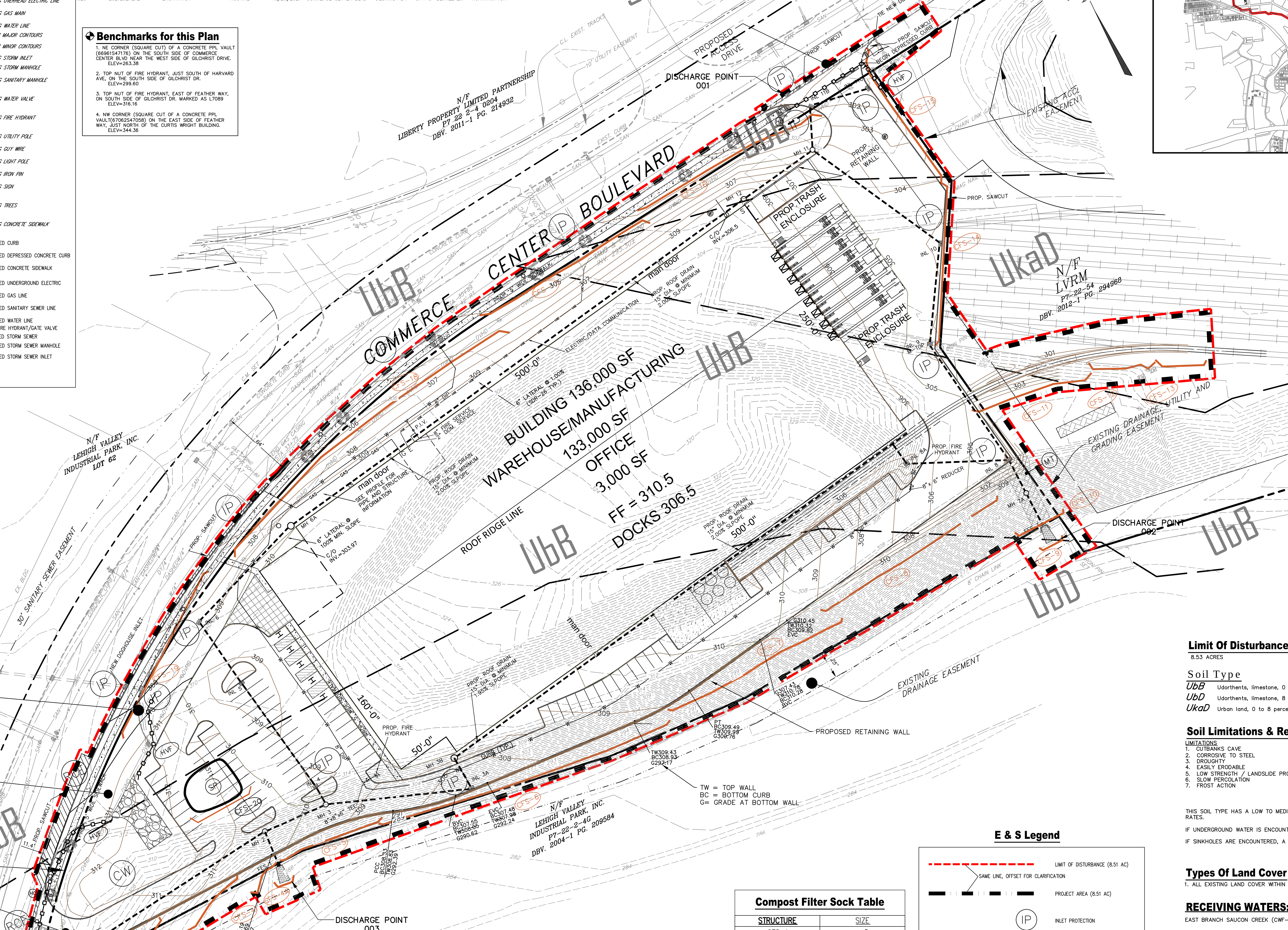
THIS PROJECT'S DESIGNER INQUIRY NO.

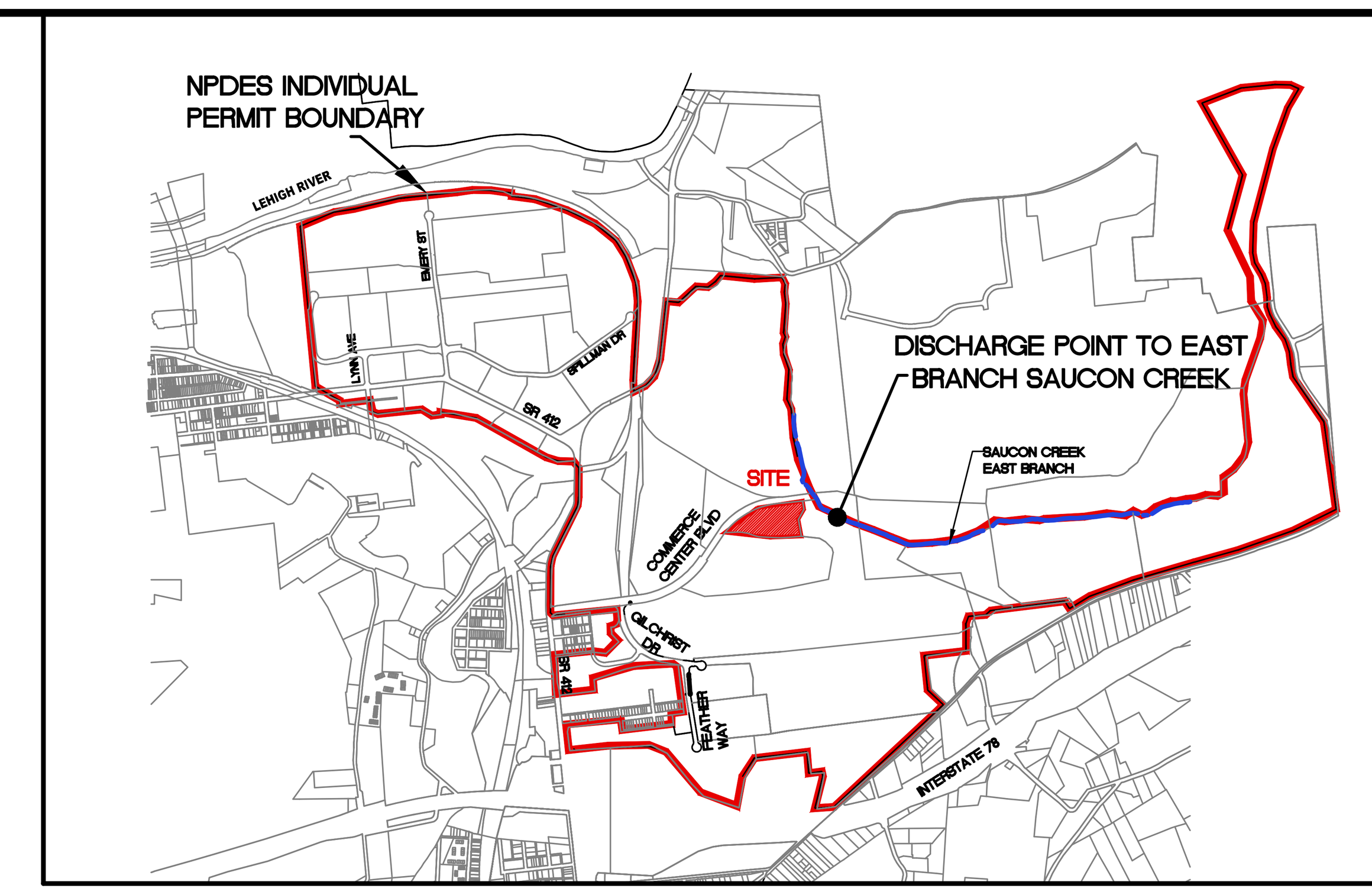
20212924212

PROJECT	SERIAL NUMBERS	EXCAVATION–DEMOLITION	TYPE OF ONE CALL	DATE	ADDRESS	NEAREST INT.	TOWNSHIP	COUNTY
4920	20212924212	EXCAVATION	ROUTINE	10/26/2021	COMMERCE CENTER BLVD	GILCHRIST DR	CITY OF BETHLEHEM	NORTHAMPTON

Benchmarks for this Plan

1. NE CORNER (SQUARE CUT) OF A CONCRETE PPL VAULT (66961S47176) ON THE SOUTH SIDE OF COMMERCE CENTER BLVD NEAR THE WEST SIDE OF GILCHRIST DRIVE. ELEV=263.38
2. TOP NUT OF FIRE HYDRANT, JUST SOUTH OF HARVARD AVE, ON THE SOUTH SIDE OF GILCHRIST DR. ELEV=299.60
3. TOP NUT OF FIRE HYDRANT, EAST OF FEATHER WAY, ON SOUTH SIDE OF GILCHRIST DR. MARKED AS L7089 ELEV=316.16
4. NW CORNER (SQUARE CUT OF A CONCRETE PPL VAULT(67062S47058) ON THE EAST SIDE OF FEATHER WAY, JUST NORTH OF THE CURTIS WRIGHT BUILDING. ELEV=344.36





Location Map

SCALE: 1" = 2,000'

ALL BMP'S SHOULD BE INSPECTED AFTER EVERY RUNOFF EVENT AND ON A WEEKLY BASIS. ANY NECESSARY REPAIRS MUST BE MADE IMMEDIATELY.

Inlet Protection Table

STRUCTURE	DRAINAGE AREA (AC.)
INL–2A	0.09
* INL–3A	0.65
INL–4	0.22
INL–5	0.43
INL–6	0.02
INL–8	0.36
INL–8A	0.11
INL–9	0.17
INL–10	0.17
INL–11B	0.01
INL–11C	0.38

* CONTRACTOR SHALL USE STONE AND BERM INLET PROTECTION (SEE CONSTRUCTION DETAIL 4–19)

Compost Filter Sock Table

STRUCTURE	SIZE
CFS–1	12"
CFS–2	12"
CFS–3	12"
CFS–4	18"
CFS–4A	18"
CFS–5	12"
CFS–6	24"
CFS–7	32"
CFS–8	24"
CFS–9	24"
CFS–10	24"
CFS–11	12"
CFS–12	12"
CFS–13	12"
CFS–14	12"
CFS–15	24"
CFS–16	24"
CFS–17	24"
CFS–18	18"
CFS–19	12"
CFS–20	12"

E & S Legend

	LIMIT OF DISTURBANCE (8.51 AC) — SAME LINE, OFFSET FOR CLARIFICATION
	PROJECT AREA (8.51 AC)
IP	INLET PROTECTION
RCE	ROCK CONSTRUCTION ENTRANCE
CFS	COMPOST FILTER SOCK
MT	EROSION CONTROL MATTING (NAG S75) STAPLE PATTERN D
HVF	HIGH VISIBILITY FENCE
CW	CONCRETE WASHOUT
SP	STOCKPILE

Limit Of Disturbance

8.53 ACRES

Soil Type

UbB	Udorthents, limestone, 0 to 8 percent slopes
UbD	Udorthents, limestone, 8 to 25 percent slopes
UkaD	Urban land, 0 to 8 percent slopes

Soil Limitations & Resolutions

LIMITATIONS	RESOLUTION
1. CUTBANKS CAVE	1. LAYBACK SLOPES
2. CORROSIVE TO STEEL	2. CATHODIC PROTECTION AND/OR CORROSION RESISTANT CONCRETE
3. DROUGHTY	3. APPLY COMPOST IF MOISTURE RETENTION IS REQUIRED
4. EASILY ERODABLE	4. TAKE EXTRA CARE IN IMPLEMENTATION OF EROSION CONTROL PLAN
5. LOW STRENGTH / LANDSLIDE PRONE	5. LAYBACK SLOPES – DESIGN FOR CONDITION
6. SLOW PERCOLATION	6. DRAINAGE DITCH
7. FROST ACTION	7. LOWER FOOTINGS BELOW FROST DEPTHS, PROVIDE POSITIVE SUBGRADE

THIS SOIL TYPE HAS A LOW TO MEDIUM PH FACTOR AND SHOULD BE TESTED FOR PROPER LIME AND FERTILIZER APPLICATION RATES.

IF UNDERGROUND WATER IS ENCOUNTERED, A PUMPED WATER FILTER BAG (DETAIL ON SHEET 11 OF 14) SHALL BE UTILIZED.

IF SINKHOLES ARE ENCOUNTERED, A SINKHOLE REPAIR DETAIL HAS BEEN SUPPLIED ON THE PROJECT DRAWINGS.

Types Of Land Cover

1. ALL EXISTING LAND COVER WITHIN PROJECT LIMITS IS SLAG AND IMPERVIOUS COVER.

RECEIVING WATERS:

EAST BRANCH SAUCON CREEK (CWF–MF)

Owner/ Applicant

LVIP, INC
1720 SPILLMAN DRIVE, SUITE 150
BETHLEHEM, PA 18015–2164
PHONE 610.866.4600

Co-Permittee

PUSH HOLDING, INC.
9005 SMITH'S MILL ROAD
NEW ALBANY, OH 43054
PHONE 614.706.5933

Soil Amendment Note

ALL PERVIOUS AREAS WHICH ARE DISTURBED SHALL BE CONSIDERED AMENDED SOILS.

Plan Preparer

ANDREW BOHL, PE
HANOVER ENGINEERING ASSOCIATES, INC.
252 BRODHEAD ROAD, SUITE 100
BETHLEHEM, PA 18107–8944
PHONE (610) 691–5644
FAX (610) 691–6968

THIS PROPOSAL REQUIRES TO BE PERMITTED AND/OR APPROVED BY THE FOLLOWING GOVERNMENT ENTITIES:

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) (Permit previously obtained for the entire LVIP VII Subdivision–Permit NPDES#PAD 480096)

NORTHAMPTON COUNTY CONSERVATION DISTRICT

LEHIGH VALLEY PLANNING COMMISSION

DRAWN BY: DM	CHECKED BY: AB
SCALE: 1"=40'	DATE: 3/01/22
PROJECT NO. 4920	SHEET NO. 10 OF 14

NO.	REVISIONS	DATE
1	PER CITY COMMENT LETTER	6/06/22

SEAL: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER ANDREW THOMAS BOHL PE062856

PRELIMINARY/FINAL LAND DEVELOPMENT

PLAN TITLE: EROSION & SEDIMENTATION CONTROL PLAN

PROJECT TITLE: LVIP VII – LOT 63 2680 COMMERCE CENTER BLVD.

1" = 40'

CITY OF BETHLEHEM
NORTHAMPTON COUNTY
PENNSYLVANIA

HanoverEngineering
Bethlehem Office
252 Brodhead Road, Suite 100
Bethlehem, PA 18017-8944
P:610.691.5644
F:610.691.6968
HanoverEng.com

Y:\Projects\Private\4920–Lot 63 LVIP\DWG\Current Plan Set\Land Development Plan\ 4920_PLANS–009– ESPC PLAN .dwg Jun 08,2022 – 5:16pm

Standard Erosion And Sediment Control Plan Notes

1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
2. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON-SITE PRECONSTRUCTION MEETING.
3. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
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.
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 PLAN.
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.
9. 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 TESTING.
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. 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.
15. 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.
16. 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.
17. ALL SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
18. 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 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
19. 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.
20. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
21. 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.
22. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
23. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
24. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
25. 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.
26. 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 PERMANENT STABILIZATION SPECIFICATIONS.
27. 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.
28. 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.
29. 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.
30. 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.
31. 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.
32. 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.

OPTIONAL NOTES

THE FOLLOWING NOTES SHOULD BE ADDED TO PLAN DRAWINGS AS APPLICABLE.

1. CONCRETE WASH WATER SHALL BE HANDLED IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS. IN NO CASE SHALL IT BE ALLOWED TO ENTER ANY SURFACE WATERS OR GROUNDWATER SYSTEMS.
2. 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.
3. UNDERGROUND UTILITIES CUTTING THROUGH ANY ACTIVE CHANNEL SHALL BE IMMEDIATELY BACKFILLED 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 IN THE MANNER DESCRIBED IN THIS PLAN UNTIL SUCH RESTORATION IS COMPLETE.
4. CHANNELS HAVING RIPRAP, RENO MATTRESS, OR GABION LININGS MUST BE SUFFICIENTLY OVER-EXCAVATED SO THAT THE DESIGN DIMENSIONS WILL BE PROVIDED AFTER PLACEMENT OF THE PROTECTIVE LINING.
5. SEDIMENT BASINS AND/OR TRAPS SHALL BE KEPT FREE OF ALL CONSTRUCTION WASTE, WASH WATER, AND OTHER DEBRIS HAVING POTENTIAL TO CLOG THE BASIN/TRAP OUTLET STRUCTURES AND/OR POLLUTE THE SURFACE WATERS.
6. SEDIMENT TRAPS SHALL BE PROTECTED FROM UNAUTHORIZED ACTS BY THIRD PARTIES.
7. ANY DAMAGE THAT OCCURS IN WHOLE OR IN PART AS A RESULT OF BASIN OR TRAP DISCHARGE SHALL BE IMMEDIATELY REPAIRED BY THE PERMITTEE IN A PERMANENT MANNER SATISFACTORY TO THE MUNICIPALITY, LOCAL CONSERVATION DISTRICT, AND THE OWNER OF THE DAMAGED PROPERTY.
8. 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.
9. 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.
10. FILL MATERIAL FOR EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS.

SYNTHETIC BINDERS, OR CHEMICAL BINDERS MAY BE USED AS RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH PROVIDED SUFFICIENT DOCUMENTATION IS PROVIDED TO SHOW THEY ARE NON-TOXIC TO NATIVE PLANT AND ANIMAL SPECIES.

MULCH ON SLOPES OF 8% OR STEEPER SHOULD BE HELD IN PLACE WITH NETTING. LIGHTWEIGHT PLASTIC, FIBER, OR PAPER NETS MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

SHREDDED PAPER HYDROMULCH SHOULD NOT BE USED ON SLOPES STEEPER THAN 5%. WOOD FIBER HYDROMULCH MAY BE APPLIED ON STEEPER SLOPES PROVIDED A TACKIFIER IS USED. THE APPLICATION RATE OF HYDROMULCH SHOULD BE 2,000 LB./ACRE AT A MINIMUM.

TABLE 11.6
MULCH APPLICATION RATES

MULCH TYPE	APPLICATION RATE (MIN.)			NOTES
	PER ACRE	PER 1,000 SQ. FT.	PER 1,000 SQ. YD.	
STRAW	3 TONS	140 LB.	1,240 LB.	EITHER WHEAT OR OAT STRAW, FREE OF WEEDS, NOT CHOPPED OR FINELY BROKEN
HAY	3 TONS	140 LB.	1,240 LB	TIMOTHY, MIXED CLOVER AND TIMOTHY OR OTHER NATIVE FORAGE GRASSES
WOOD CHIPS	4-6 TONS	185-275 LB.	1,650-2,500 LB.	MAY PREVENT GERMINATION OF GRASSES AND LEGUMES
HYDRO MULCH	1 TON	47 LB.	415	SEE LIMITATIONS ABOVE

Assurance Of Design Performance

THE SPECIFICATIONS AND REQUIREMENTS OF THE PROJECT PLANS, NARRATIVE AND SPECIFICATION ARE THE MINIMUM ACCEPTABLE CONSTRUCTION CRITERIA FOR THIS PROJECT.

DURING SITE DEVELOPMENT CONSTRUCTION, ALL TEMPORARY EROSION AND SEDIMENTATION CONTROL FACILITIES MUST BE CHECKED BY THE SITE CONTRACTOR AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ANY DAMAGE TO THE FACILITIES MUST BE REPAIRED IMMEDIATELY. ANY LOST SOIL MATERIAL SHALL BE RECOVERED, IF POSSIBLE. WASHED OUT LAWN OR SLOPE AREAS MUST HAVE TOPSOIL REPLACED AND THEN MUST BE RE-SEEDED AND MULCHED.

IF, FOR ANY REASON, THE DESIGNED FACILITIES OR MEASURES DO NOT PROVIDE THE NECESSARY PROTECTION, THE CONTRACTOR SHALL ADJUST THE EROSION CONTROL MEASURES AND SEDIMENT CONTROL MEASURES TO ACHIEVE A COMPLETE NON-ERODED STABILIZED SITE CONDITION.

AFTER THE CITY'S FINAL ACCEPTANCE OF SITE WORK CONSTRUCTION AND STABILIZATION BY THE CONTRACTOR, THE GROUND SURFACE AND ALL DRAINAGE FACILITIES LOCATED ON PRIVATE PROPERTY MUST BE MAINTAINED BY THE OWNER OF THE PROPERTY.

ALL BMP'S SHOULD BE INSPECTED AFTER EVERY RUNOFF EVENT AND ON A WEEKLY BASIS. ANY NECESSARY REPAIRS MUST BE MADE IMMEDIATELY.

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Temporary Stabilization & Permanent Stabilization

1. HAY OR STRAW MULCH MUST BE APPLIED AT 3.0 TONS PER ACRE.
2. MULCH WITH MULCH CONTROL NETTING OR EROSION CONTROL BLANKETS MUST BE INSTALLED ON ALL SLOPES 3:1 AND STEEPER."
3. STRAW MULCH SHALL BE APPLIED IN LONG STRANDS, NOT CHOPPED OR FINELY BROKEN.

102.4(B)(5)(X) "A MAINTENANCE PROGRAM WHICH PROVIDES FOR INSPECTION OF BMPS ON A WEEKLY BASIS AND AFTER EACH MEASURABLE RAINFALL EVENT, INCLUDING THE REPAIR OF THE BMPS TO ENSURE EFFECTIVE AND EFFICIENT OPERATION."

4. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT CONTROL BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, RE-GRADING, RE-SEEDING, RE-MULCHING, AND RE-NETTING, MUST BE PERFORMED IMMEDIATELY. IF EROSION AND SEDIMENT CONTROL BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED. *E&SPCPM P168*
5. SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN LANDSCAPED AREAS OUTSIDE OF STEEP SLOPES, WETLANDS, FLOODPLAINS OR DRAINAGE SWALES AND IMMEDIATELY STABILIZED, OR PLACED IN TOPSOIL STOCKPILES.

102.4(B)(5)(XI) "PROCEDURES WHICH ENSURE THAT THE PROPER MEASURES FOR THE RECYCLING OR DISPOSAL OF MATERIALS ASSOCIATED WITH OR FROM THE PROJECT SITE WILL BE UNDERTAKEN IN ACCORDANCE WITH THIS TITLE."

6. THE OPERATOR SHALL REMOVE FROM THE SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIALS AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1 ET SEQ., AND 287.1 ET SEQ. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP, OR DISCHARGE ANY BUILDING MATERIAL OR WASTES AT THE SITE."
7. SOIL/ROCK DISPOSAL AREAS SHOULD BE ADDRESSED IN THE NARRATIVE AND ON THE DRAWINGS WITH APPROPRIATE BMPS (E.G. THE OPERATOR SHALL ASSURE THAT AN EROSION AND SEDIMENT CONTROL PLAN HAS BEEN PREPARED, APPROVED BY THE CONSERVATION DISTRICT AND IS BEING IMPLEMENTED AND MAINTAINED FOR ALL PROPOSED SOIL/ROCK SPOIL AND BORROW AREAS ON OR OFFSITE.).

REFER TO NARRATIVE FOR PENN DOT PUBL. 408 DATA

Temporary Seeding

ALL DISTURBED EARTH SURFACES OR TOPSOIL STOCKPILES WHICH ARE TO REMAIN LONGER THAN FOUR (4) DAYS SHALL BE STABILIZED AND SEEDED WITH A CONTRACTOR'S MIX AS STATED BELOW:

DATE	TYPE OF MIXTURE	PER 1,000 SF	PER ACRE
MARCH 1 TO JUNE 15	ANNUAL RYEGRASS - 100%	1.0 LB.	40 LB.
JUNE 15 TO AUG. 15	SUDANGRASS - 100%	1.0 LB.	40 LB.
AUG. 15 TO SEPT. 15	ANNUAL RYEGRASS - 100%	0.7 LB.	30 LB.
MARCH 1 TO AUG. 15			
AUG. 15 TO OCT. 15	WINTER WHEAT - 100%	4.1 LB.	180 LB.
OCT. 15 TO MARCH 1	HAY OR STRAW MULCH		3.0 TONS

LIME AND FERTILIZER AND MULCH SPECIFICATIONS
TEMPORARY SEEDING -
- APPLY ONE TON OF LIME PER ACRE AND
- FERTILIZER 50-50-50 PER ACRE
- MULCH, HAY OR STRAW - 3 TONS PER ACRE

STRAW MULCH SHALL BE APPLIED IN LONG STRANDS, NOT CHOPPED OR FINELY BROKEN.

A. FORMULA "B"- PRIMARILY KENTUCKY BLUEGRASS & CREEPING RED OR CHEWINGS FESCUE, SPREAD AT A SEEDING RATE OF 42 LB. PER 1000 SQ. YDS. SPREAD FORMULA "B" FROM MARCH 15 TO JUNE 1 OR FROM AUGUST 1 TO OCTOBER 15.

B. FORMULA "C"- CROWNVETCH AND ANNUAL RYEGRASS (45% - 55%) SPREAD AT A RATE OF 12 LB. PER 1000 SQ. YDS. ON ALL SLOPES 2 HORIZONTAL TO 1 VERTICAL OR STEEPER. SPREAD FORMULA "C" RYEGRASS PORTION FROM MARCH 1 TO OCTOBER 15 AND CROWNVETCH PORTION ANYTIME EXCEPT SEPTEMBER AND OCTOBER.

C. FORMULA "W"-MIXTURE OF TALL FESCUE, BIRDSFOOT TREFOIL, AND REDTOP, SPREAD AT A SEEDING RATE OF 15 LB. PER 1000 SQ. YDS. ON THE DETENTION POND. SPREAD THIS FORMULA FROM APRIL 1 TO JUNE 15 OR FROM AUGUST 16 TO SEPTEMBER 15.

D. ALTERNATE SEED MIXES, BASED ON SECTION IX OF THE "PENN STATE AGRONOMY GUIDE", MAY BE USED ONLY IF APPROVED IN WRITING IN ADVANCE OF PLACEMENT.

Note:

SLURRY APPLICATIONS MUST INCLUDE A STRAW MULCH BINDER. AT A RATE OF 3.0 TONS PER ACRE.

Permanent Seeding - IMMEDIATELY UPON FINAL GRADING OF ANY

PHASE OR SECTION, TOPSOIL SHALL BE BROUGHT BACK OVER THE DISTURBED AREAS WHICH ARE NOT TO BE PAVED OR BUILT UPON. THIS TOPSOIL SHALL BE SPREAD TO A SMOOTH FINISH GRADE WITH A MINIMUM DEPTH OF SIX (6) INCHES. THE TOPSOIL SHALL THEN BE:

A. RAKED FREE OF STONES;

B. LIMED AND FERTILIZED AS NECESSARY;

C. PLANTED WITH GRASS OR OTHER SPECIFIED SEED;

D. MULCHED OR MATTED TO PROTECT THE SEED FROM DRYNESS AND EROSION (STRAW OR HAY AT 1,240 LB. PER 1,000 SQ. YD.).

IT IS RECOMMENDED THAT THE CONTRACTOR TAKE SOIL SAMPLES TO ENSURE THE PROPOSED SEED MIXTURE WILL PROVIDE ADEQUATE COVER.

PERMANENT SEEDING SHALL BE UNDERTAKEN IN ACCORDANCE WITH PENNDOT, FORM 408 SPECIFICATIONS AS FOLLOWS:

A. PENNDOT FORMULA "B" (PRIMARILY KENTUCKY BLUEGRASS AND CREEPING RED OR CHEWING FESCUE) SPREAD AT A RATE OF 21 POUNDS PER 1,000 SQUARE YARDS, OR OTHER SEED MIX APPROVED FOR THE AREA. SPREAD FORMULA "B" FROM MARCH 15 TO JUNE 1, OR FROM AUGUST 1 TO OCTOBER 15.

B. ALTERNATE SEED MIXES, BASED ON SECTION IX OF THE "PENN STATE AGRONOMY GUIDE", MAY BE USED ONLY IF APPROVED IN WRITING IN ADVANCE OF PLACEMENT BY THE PROJECT ENGINEER AND THE LOCAL COUNTY CONSERVATION DISTRICT.

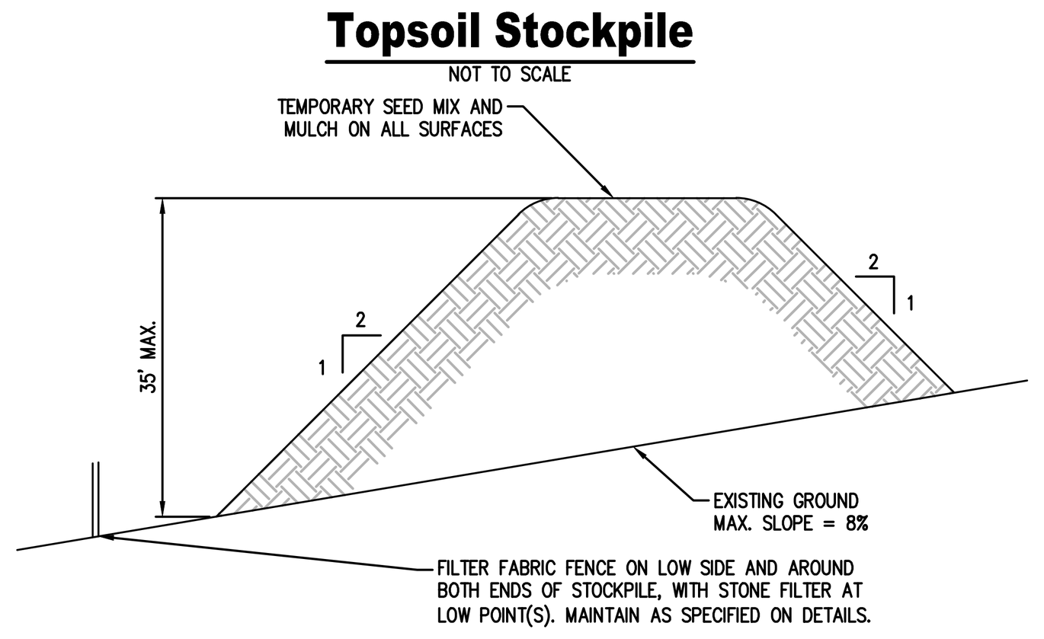
Lime And Fertilizer Specifications

PULVERIZED AGR. LIMESTONE, 800 LBS. PER 1,000 S.Y.
ANALYSIS COMMERCIAL 10-20-20, 140 LBS. PER 1,000 S.Y.
UREAFORM FERTILIZER 38-0-0, 50 LBS. PER 1,000 S.Y.
IBDUFERTILIZER 31-0-0, 61 LBS. PER 1,000 S.Y.

MULCH OR APPLY HAY AT 1,240 LBS. PER 1,000 S.Y. TO SEEDED AREAS TO PROTECT THE SEED FROM DRYNESS AND EROSION.

Topsoil Stockpile

NOT TO SCALE



General Notes:

1. STOCKPILE TOPSOIL OR EXCAVATED SOIL MATERIAL AT LOCATIONS SHOWN FOR EACH PHASE OF CONSTRUCTION.
2. HEIGHT AND SIDE SLOPES SHALL NOT EXCEED MAXIMUM VALUES SHOWN ON DETAIL.
3. INSTALL FILTER FENCE PRIOR TO STOCKPILING OF MATERIAL. REPLACE ANY FENCE REMOVED FOR VEHICULAR ACCESS AFTER EACH WORK DAY.
4. APPLY A TEMPORARY SEED MIX AND MULCH WHEN PILE WILL REMAIN FOR 30 DAYS OR MORE.

Location Of Measures And Facilities

THE REQUIRED LOCATIONS OF THE PERMANENT CONTROL MEASURES WILL BE DETERMINED BY THE ENGINEER DURING/AFTER CONSTRUCTION AND WILL BE INSTALLED TO STABILIZE THE PROJECT AS PART OF THE CONTRACTOR'S RESPONSIBILITY.

Dimensioned Details Of The Facilities

ALL ITEMS TO BE USED IN THIS PROJECT SHALL BE CONSTRUCTED TO PREVAILING STANDARDS. DETAILS OF SPECIAL EROSION CONTROL FACILITIES, I.E. THE FILTER FABRIC, INLET PROTECTION, ETC., ARE NOTED ON THE PROJECT PLANS.

102.5(B)(8) MAINTENANCE OF CONTROL FACILITIES

Disposal Of Materials From The Control Facilities

SEDIMENT WHICH HAS BEEN TRAPPED BY SILT BARRIER FACILITIES MUST BE REMOVED AND STOCKPILED OR REDISTRIBUTED ON THE PROJECT SITE. ALL CONSTRUCTION DEBRIS OR OTHER UNSUITABLE MATERIALS SHALL BE REMOVED BY THE CONTRACTOR AND DISPOSED OF IN A LAWFUL MANNER.

WASHING OF FILTER STONE AND REDISTRIBUTION OF WET SEDIMENT SHALL BE ONLY PERMITTED UPHILL OF AN EFFECTIVE SEDIMENT FILTER FACILITY. SILT LADEN RUN-OFF SHALL NOT BE ALLOWED TO FLOW DIRECTLY TO UNPROTECTED INLETS, BASINS, ADJACENT PROPERTIES, ROADWAYS, OR WETLANDS.

ALL SILT BARRIER FACILITIES MUST BE CHECKED FOR CAPACITY AND PROPER FUNCTION WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL ALL UPSTREAM AREAS HAVE A UNIFORM PERENNIAL VEGETATIVE COVER OF OVER SEVENTY (70) PERCENT.

RECYCLING AND/OR DISPOSAL OF MATERIALS ASSOCIATED WITH OR FROM THE PROJECT SITE MUST BE IN
ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION.

Recycling And Disposal Of Materials

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO BE FAMILIAR WITH, AND TO INFORM HIS WORKERS OF ALL LOCAL, STATE, AND FEDERAL ENVIRONMENTAL REGULATIONS REGARDING THE CONDUCT OF WORK AND HANDLING OF MATERIALS ON THE PROJECT, AND TO PERFORM ALL ACTIVITIES IN ACCORDANCE WITH THOSE REGULATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING EMERGENCY RESPONSE PLANS FOR ANY HAZARDOUS OR POLLUTING MATERIALS USED IN THE WORK.

ALL RUBBISH OR WASTE MATERIALS PRODUCED BY CONTRACTOR'S WORKERS SHALL BE PROTECTED FROM DISSEMINATION BY WIND, RAIN, OR ANIMALS, AND SHALL BE LEGALLY DISPOSED OF REGULARLY. ANY CONSTRUCTION DEBRIS OR OTHER UNSUITABLE MATERIALS TRAPPED BY SILT BARRIER FACILITIES SHALL BE SEPARATED FROM SOIL MATERIALS AND DISPOSED OF IN A LAWFUL MANNER.

SEDIMENT WHICH HAS BEEN TRAPPED BY SILT BARRIER FACILITIES MUST BE REMOVED AND STOCKPILED OR REDISTRIBUTED ON THE PROJECT SITE. SEDIMENT WHICH COLLECTS TO THE SPECIFIED CLEAN-OUT ELEVATION IN THE BOTTOM OF STORMWATER MANAGEMENT PONDS, OR THE SPECIFIED ELEVATIONS IN SEDIMENT TRAPS, MUST BE REMOVED AND STOCKPILED OR REDISTRIBUTED AND STABILIZED ON THE PROJECT SITE.

WASHING OF FILTER STONE AND RE-DISTRIBUTION OF WET SEDIMENT FROM BASINS, TRAPS OR OTHER FACILITIES SHALL BE ONLY PERMITTED UPHILL OF AN EFFECTIVE SEDIMENT FILTER FACILITY. SILT LADEN RUNOFF SHALL NOT BE ALLOWED TO FLOW DIRECTLY TO UNPROTECTED CATCH BASINS, PONDS, ADJACENT PROPERTIES, ROADS, STREAMS OR WETLANDS.

IF THE CONTRACTOR EXPECTS TO RECYCLE OR DISPOSE OF ANY SOIL OR ROCK MATERIAL TO LOCATIONS OTHER THAN THE PROJECT AREA FOR WHICH THIS PLAN AND NARRATIVE HAVE BEEN PREPARED, THE CONTRACTOR SHALL ARRANGE FOR PREPARATION AND SUBMITTAL TO THE APPROPRIATE COUNTY CONSERVATION DISTRICT OF EROSION AND SEDIMENT CONTROL PLANS FOR ALL SUCH OFF-PROJECT AREAS PRIOR TO COMMENCEMENT OF WORK.

Anticipated Project Specific Waste

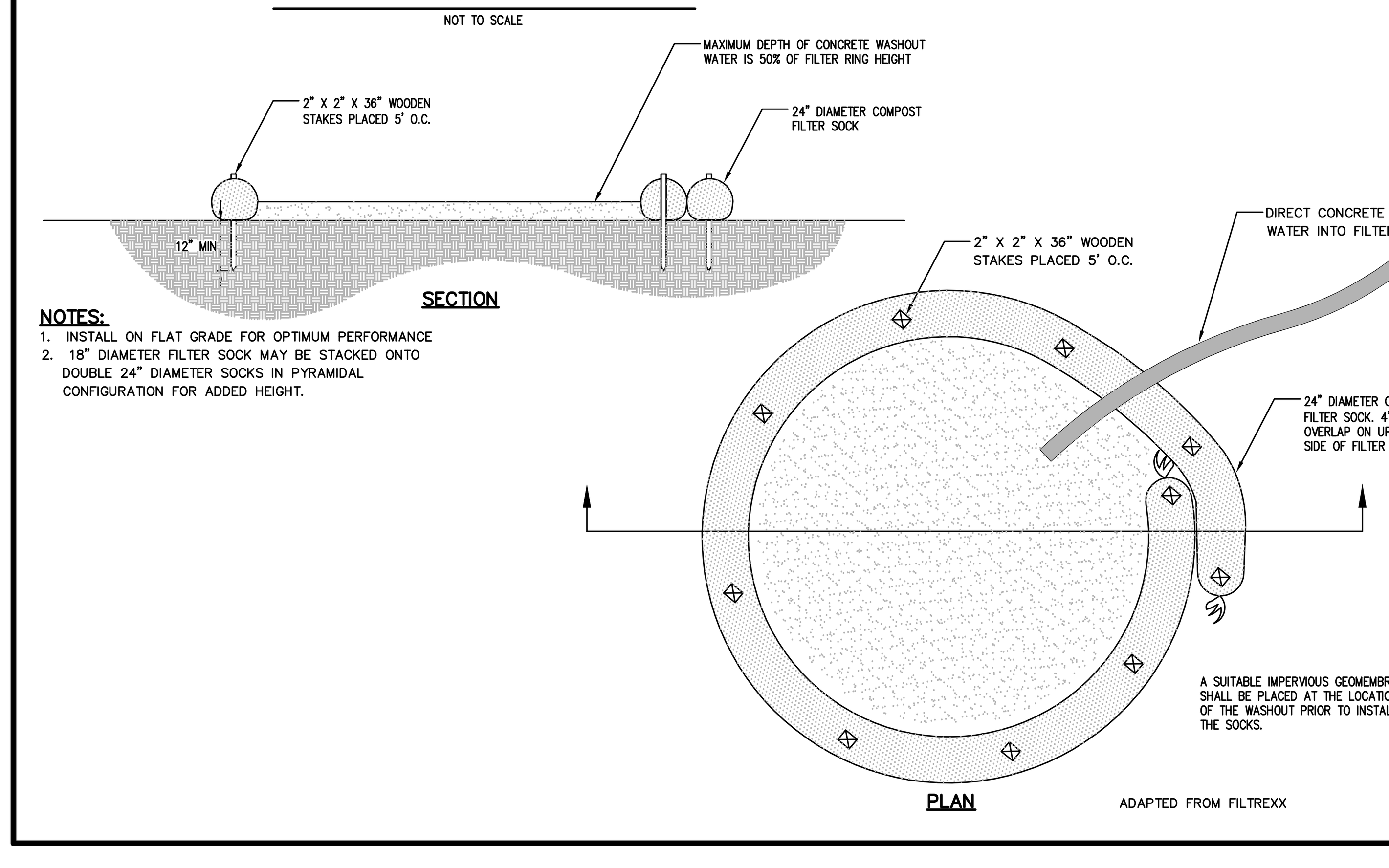
SEDIMENT TRAPPED BY EROSION CONTROL BMPS

PLANT WASTE CREATED DURING CLEARANCE OF SITE

ALL WASTE IS TO BE RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION.

Typical Compost Sock Concrete Washout Detail

NOT TO SCALE



ADAPTED FROM FILTREXX

NOTES:
1. INSTALL ON FLAT GRADE FOR OPTIMUM PERFORMANCE
2. 18" DIAMETER FILTER SOCK MAY BE STACKED ONTO DOUBLE 24" DIAMETER SOCKS IN PYRAMIDAL CONFIGURATION FOR ADDED HEIGHT.

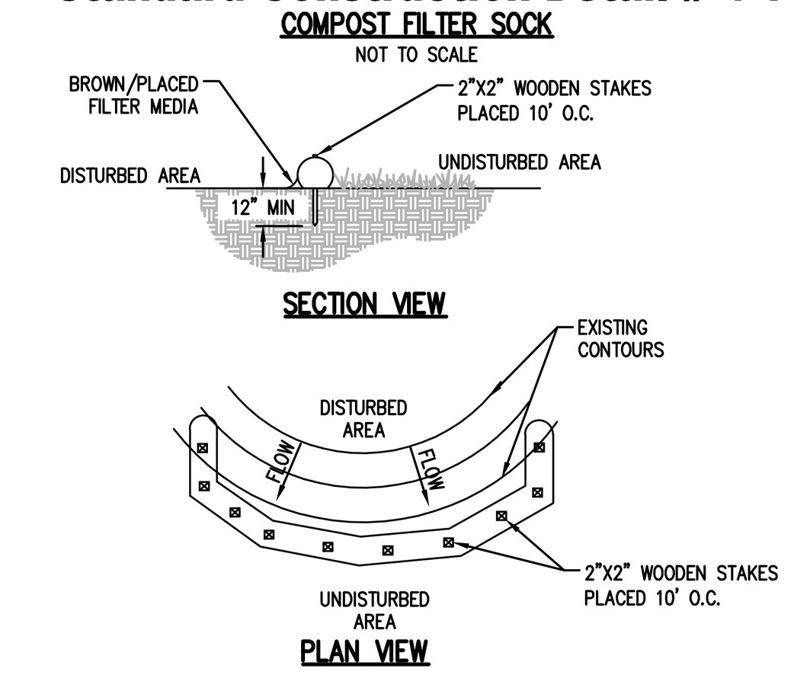
SEQUENCE OF CONSTRUCTION

1. SCHEDULE A PRE-CONSTRUCTION CONFERENCE AND PROVIDE AT LEAST SEVEN (7) WORKING DAYS' NOTICE TO THE FOLLOWING AGENCIES PRIOR TO COMMENCEMENT OF SITE GRADING WORK:
   A. PROJECT ENGINEER: 610-691-5644
   B. NORTHAMPTON COUNTY CONSERVATION DISTRICT: 610-829-6276
   C. PA-ONE-CALL: 1-800-242-1776
2. THE CONTRACTOR SHALL CONTACT THE DESIGN ENGINEER AT LEAST FORTY-EIGHT HOURS (48 HOURS) IN ADVANCE OF EROSION CONTROL FACILITIES COMPONENT INSTALLATIONS.
3. THE CONTRACTOR SHALL REFER TO THE POST CONSTRUCTION STORMWATER MANAGEMENTS PLANS FOR LOW IMPACT/NO COMPACTION TECHNIQUES FOR THE EXCAVATION AND PLACEMENT OF THE PROPOSED FILL MATERIALS.
4. PRIOR TO REMOVAL OF TOPSOIL, REFER TO THE ESPC PLAN SHEET FOR LOCATION OF SOIL STOCKPILES. TEMPORARY AND PERMANENT SEEDING SHALL BE IN ACCORDANCE WITH REQUIREMENTS LISTED AND AS NOTED IN THE PROJECT NARRATIVE AND AS LISTED ON THE ESPC PLAN SHEET. COMPOST FILTER SOCK SHALL BE INSTALLED DOWNSLOPE OF ALL TOPSOIL STOCKPILES.
   A. PRIOR TO ANY SEEDING AND LIME AND FERTILIZE APPLICATION, A SOIL TEST SHALL BE PERFORMED TO DETERMINE THE PH FACTOR. ADDITIONAL LIME AND FERTILIZER MAY BE REQUIRED.
5. DISTURBED AREAS SHALL NOT BE STRIPPED OF TOPSOIL FOR MORE THAN FOUR (4) DAYS WITHOUT TEMPORARY STABILIZATION.
6. PLACE ROCK CONSTRUCTION ENTRANCE AT THE ENTRANCE TO LOT 63 FROM COMMERCE CENTER BOULEVARD AS SHOWN ON SHEET 10. ALL CONSTRUCTION TRAFFIC FOR THE SITE IS TO ENTER AT THIS LOCATION. ALTERNATE ENTRANCES ARE PROHIBITED, UNLESS APPROVED BY THE CONSERVATION DISTRICT.
7. INSTALL INLET PROTECTION AT ALL EXISTING INLETS ALONG THE FRONTAGE OF THE LOT 63 WITHIN COMMERCE CENTER BOULEVARD AS SHOWN ON SHEET 10.
8. INSTALL HIGH VISIBILITY FENCING AS SHOWN ON SHEET 10. IMMEDIATELY STABILIZE ALL DISTURBED AREAS.
9. PLACE ALL COMPOST FILTER SOCKS CFS-1 THROUGH CFS-20 AS SHOWN ON SHEET 10 AND IMMEDIATELY STABILIZE ANY DISTURBED AREAS.
10. CLEAR AND GRUB ENTIRETY OF SITE WITHIN THE LIMIT OF DISTURBANCE PRIOR TO ANY EARTHMOVING ACTIVITIES. REMOVE STOCKPILE OF SLAG AND FILL MATERIAL. REMOVE ALL WASTE MATERIALS, AS OUTLINED ON SHEET 11.
11. INSTALL STORM SEWER RUN BETWEEN FES #1 TO PROPOSED MANHOLE 2, INCLUDING THE INSTALLATION OF RIP RAP APRON AT FES#1. IMMEDIATELY STABILIZE ANY EARTH DISTURBANCE ASSOCIATED WITH THE INSTALLATION OF THE FES AND RIP RAP APRON. INSTALL THE FOLLOWING STORM RUNS: MANHOLE 2 TO MANHOLE 6A, MANHOLE 2 TO INLET 2A AND MANHOLE 3 TO MANHOLE 3B. BACKFILL AND STABILIZE AREA OF EXCAVATIONS. IF STORMWATER FILLS IN EXCAVATION TRENCH, UTILIZE FILTER BAG TO REMOVE.
12. INSTALL STORM SEWER RUN BETWEEN FES #7 TO PROPOSED MANHOLE 7A, INCLUDING THE INSTALLATION OF RIP RAP APRON AT FES#7. IMMEDIATELY STABILIZE ANY EARTH DISTURBANCE ASSOCIATED WITH THE INSTALLATION OF THE FES AND RIP RAP APRON. INSTALL THE FOLLOWING STORM SEWER RUNS: MANHOLE 7A TO PROPOSED MANHOLE 12, MANHOLE 11 TO INLET 11C AND INLET 8 TO INLET 8A. BACKFILL AND STABILIZE AREA OF EXCAVATIONS. IF STORMWATER FILLS IN EXCAVATION TRENCH, UTILIZE FILTER BAG TO REMOVE.
13. ROUGH GRADE SITE INCLUDING RETAINING WALLS, BUILDING PAD, PARKING AREAS, AND LOADING DOCK AREAS. IMMEDIATELY STABILIZE DISTURBED AREAS.
14. CONSTRUCT BUILDING AND CONNECT ROOF LEADERS TO PREVIOUSLY CONSTRUCTED STORM SEWER COLLECTION SYSTEM AS NEEDED.
15. INSTALL SITE UTILITIES INCLUDING SANITARY SEWER LATERAL, WATER SERVICE, GAS LATERAL, SITE LIGHTING, UNDERGROUND ELECTRIC AND COMMUNICATION LINES. IMMEDIATELY STABILIZE DISTURBED AREAS. IF STORMWATER FILLS IN EXCAVATION TRENCH, UTILIZE FILTER BAG TO REMOVE. THIS STEP CAN BE COMPLETED CONCURRENTLY WITH STEP 14 (BUILDING CONSTRUCTION).
16. INSTALL ALL CONCRETE CURBING AND SIDEWALKS. ALL DISTURBANCE GENERATED DURING THE INSTALLATION OF THESE ITEMS SHOULD BE IMMEDIATELY STABILIZED.
17. PLACE SUBBASE STONE AGGREGATE FOR ALL AREAS TO BE PAVED.
18. SAW CUT COMMERCE CENTER BOULEVARD FOR THE WESTERN DRIVEWAY AND THE PORTION OF THE EASTERN DRIVEWAY WHICH IS BEING WIDEN AND INSTALL THE CONCRETE CURBING AT THE EXISTING ENTRANCE TO BE CLOSED TO COMMERCE CENTER BOULEVARD.
19. FINISH PAVING ALL ASPHALT AREAS AND LINE STRIPE PARKING FACILITIES.
20. INSTALL CAPPING MATERIAL AND PROPOSED LANDSCAPING. IMMEDIATELY STABILIZE ALL AREAS.
21. A VEGETATED AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OVER THE ENTIRE DISTURBED AREA AND/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.
22. NO SOIL IS TO BE HAULED OFF SITE WITHOUT SEPARATE EROSION AND SEDIMENTATION POLLUTION CONTROL PLAN REVIEWED BY THE DESIGN ENGINEER. A VEGETATED AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OVER THE ENTIRE DISTURBED AREA AND/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.

Standard Construction Detail # 4-1

COMPOST FILTER SOCK

NOT TO SCALE



SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL (MAR. 2012). COMPOST SHALL MEET THE FOLLOWING STANDARDS:

ORGANIC MATTER CONTENT	25% - 100% (DRY WEIGHT BASIS)
ORGANIC PORTION	FIBROUS AND ELONGATED
pH	5.5 - 8.5
MOISTURE CONTENT	30% - 60%
PARTICLE SIZE	30% - 50% PASS THROUGH 3/8" SIEVE
SOLUBLE SALT CONCENTRATION	5.0 dS/m (mmhos/cm) MAXIMUM

General Notes:

1. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN SOCK ALIGNMENT (SEE FIGURE 4.1 OF THE PA DEP EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL, MAR. 2012). MAXIMUM SLOPE LENGTH ABOVE ANY SOCK SHALL NOT EXCEED THAT SHOWN OF FIGURE 4.2 OF THE PA DEP EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL (MAR. 2012). STAKES MAY BE INSTALLED IMMEDIATELY DOWNSLOPE OF THE SOCK IF SO SPECIFIED BY THE MANUFACTURER.
2. TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS.
3. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE ABOVEGROUND HEIGHT OF THE SOCK AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.
4. SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
5. BIODEGRADABLE FILTER SOCK SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
6. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

TABLE 4.1
COMPOST SOCK FABRIC MINIMUM SPECIFICATIONS

MATERIAL TYPE	3 mil HDPE	5 mil HDPE	5 mil HDPE	MULTI-FILAMENT POLYPROPYLENE (MFPP)	HEAVY DUTY MULTI-FILAMENT POLYPROPYLENE (HDMFPP)
MATERIAL CHARACTERISTICS	PHOTO - DEGRADABLE	PHOTO - DEGRADABLE	BIO - DEGRADABLE	PHOTO - DEGRADABLE	PHOTO - DEGRADABLE
SOCK DIAMETERS	12" 18"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"
MESH OPENING	3/8"	3/8"	3/8"	3/8"	1/8"
TENSILE STRENGTH		26 psi	26 psi	44 psi	202 psi
ULTRAVIOLET STABILITY % ORIGINAL STRENGTH (ASTM G-155)	23% AT 1000 HR.	23% AT 1000 HR.		100% AT 1000 HR.	100% AT 1000 HR.
MINIMUM FUNCTIONAL LONGEVITY	6 MONTHS	9 MONTHS	6 MONTHS	1 YEAR	2 YEARS
TWO-PLY SYSTEMS					
INNER CONTAINMENT NETTING			HDPE BIAXIAL NET		
			CONTINUOUSLY WOUND		
			FUSION-WELD JUNCTURES		
			3/4" X 3/4" MAX. APERTURE SIZE		
OUTER FILTRATION MESH			COMPOSITE POLYPROPYLENE FABRIC (WOVEN LAYER & NON-WOVEN FLEECE MECHANICALLY FUSED VIA NEEDLE PUNCH)		
			3/16" MAX. APERTURE SIZE		

SOCK FABRICS COMPOSED OF BURLAP MAY BE USED ON PROJECTS LASTING 6 MONTHS OR LESS.

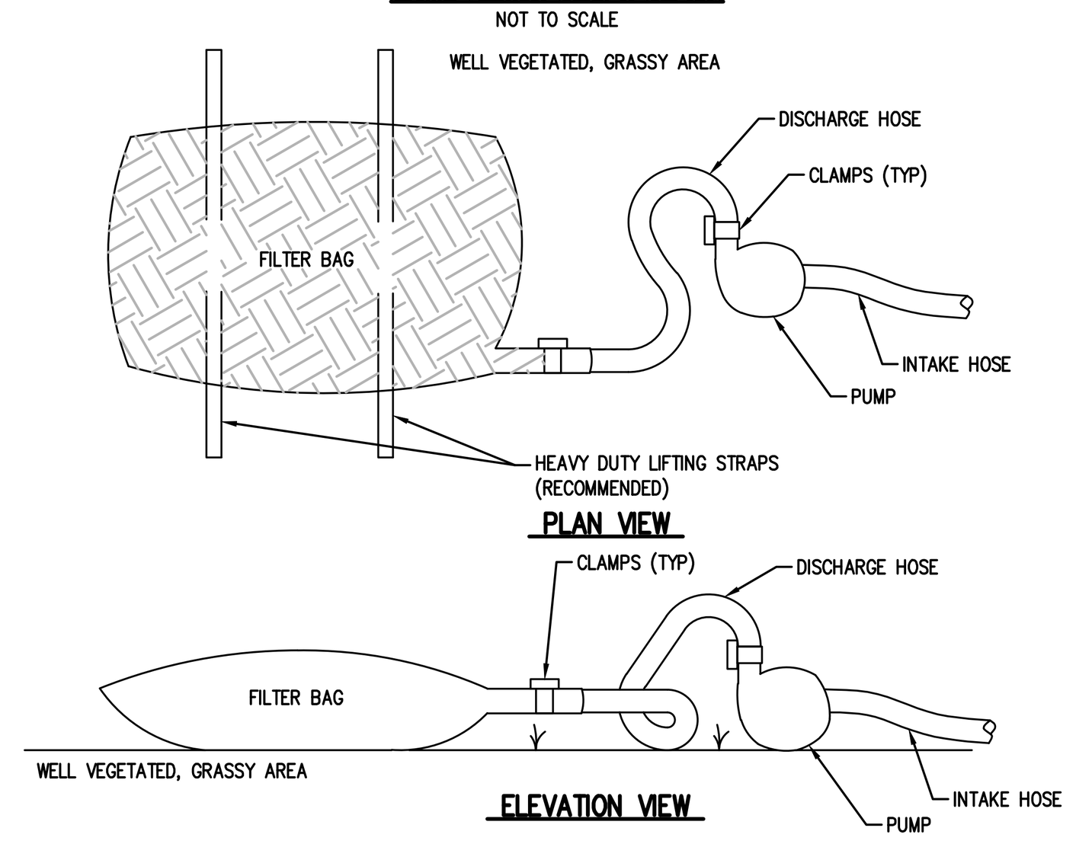
TABLE 4.2

COMPOST STANDARDS	
ORGANIC MATTER CONTENT	25% - 100% (DRY WEIGHT BASIS)
ORGANIC PORTION	FIBROUS AND ELONGATED
pH	5.5 - 8.5
MOISTURE CONTENT	30% - 60%
PARTICLE SIZE	30% - 50% PASS THROUGH 3/8" SIEVE
SOLUBLE SALT CONCENTRATION	5.0 dS/m (mmhos/cm) MAXIMUM

Standard Construction Detail # 3-16

PUMPED WATER FILTER BAG

NOT TO SCALE



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 FOLLOWING STANDARDS:

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D-4884	60 lb/in
GRAB TENSILE	ASTM D-4632	205 lb
PUNCTURE	ASTM D-4833	110 lb
MULLEN BURST	ASTM D-3786	350 psi
UV RESISTANCE	ASTM D-4355	70%
AOS % RETAINED	ASTM D-4751	80 Sieve

General Notes:

1. 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 BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.
2. BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE 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 AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.
3. NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER ROCK 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.
4. 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.
5. 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.
6. FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

DRAWN BY: DM	CHECKED BY: AB
SCALE: AS NOTED	DATE: 3/01/22
PROJECT NO. 4920	
SHEET NO. 11 OF 14	

NO.	REVISIONS	DATE
1	PER CITY COMMENT LETTER	6/06/22

SEAL: COMMONWEALTH OF PENNSYLVANIA, REGISTERED PROFESSIONAL ENGINEER, ANDREW THOMAS BOHL, PE062856

PRELIMINARY/FINAL LAND DEVELOPMENT

PLAN TITLE: EROSION & SEDIMENTATION CONTROL DETAILS

PROJECT TITLE: LVIP VII - LOT 63, 2680 COMMERCE CENTER BLVD.

CITY OF BETHLEHEM
NORTHAMPTON COUNTY
PENNSYLVANIA

HanoverEngineering
Bethlehem Office
252 Brodhead Road, Suite 100
Bethlehem, PA 18017-8944
P:610.691.5644
F:610.691.6968
HanoverEng.com

TABLE 11.1
Cubic Yards of Topsoil Required for Application to Various Depths

Depth (in)	Per 1,000 Square Feet	Per Acre
1	3.1	134
2	6.2	268
3	9.3	403
4	12.4	537
5	15.5	672
6	18.6	806
7	21.7	940
8	24.8	1,074

Adapted from VA DSWC

TABLE 11.2
Soil Amendment Application Rate Equivalents

Soil Amendment	Permanent Seeding Application Rate			Notes
	Per Acre	Per 1,000 sq. ft.	Per 1,000 sq. yd.	
Agricultural lime	6 tons	240 lb.	2,480 lb.	Or as per soil test; may not be required in agricultural fields
10–20–20 [redacted]fertilizer	1,000 lb.	25 lb.	210 lb.	Or as per soil test; may not be required in agricultural fields
	Temporary Seeding Application Rate			
Agricultural lime	1 ton	40 lb.	410 lb.	Typically not required for topsoil stockpiles
10-10-10 fertilizer	500 lb.	12.5 lb.	100 lb.	Typically not required for topsoil stockpiles

Adapted from Penn State, "Erosion Control and Conservation Plantings on Noncropland"

NOTE: A compost blanket which meets the standards of this chapter may be substituted for the soil amendments shown in Table 11.2.

TABLE 11.3
Plant Tolerances of Soil Limitation Factors

Species	Growth Habit[1]	Tolerates: Wet Soil	Tolerates: Dry Site	Tolerates: Low Fertility	Tolerates: Acid Soil (pH 5-5.5)[2]	Min. Seed Spec.[3]: Purity (%)	Ready Germ (%)	Hard Seed (%)	Total Germ (%)	Seeds/lb (1,000s)
Warm-Season Grasses										
Deertongue	bunch	yes	yes	yes	yes	95	75		75	250
Weeping lovegrass	bunch	no	yes	yes	yes	97	75		75	1,500
Switchgrass[4]	bunch	yes	yes	yes	yes	(60 PLS)				390
Big bluestem	bunch	no	yes	yes	yes	(60 PLS)				150
Cool-Season Grasses										
Tall Fescue	bunch	yes	no	yes	no	95	80		80	227
Redtop	sod	yes	yes	yes	yes	92	80		80	5,000
Fine fescues	sod	no	no	yes	no	95	80		80	400
Perennial ryegrass	bunch	yes	no	no	no	95	85		85	227
Annual ryegrass	bunch	yes	no	yes	no	95	85		85	227
Kentucky bluegrass	sod	no	no	no	no	85	75		75	2,200
Reed canarygrass	sod	yes	yes	yes	no	95	70		70	520
Orchardgrass	bunch	yes	yes	yes	yes	95	80		80	654
Timothy	bunch	yes	no	yes	yes	95	80		80	1,230
Smooth bromegrass	sod	no	yes	yes	no	95	80		80	136
Legumes[5]										
Crownvetch	sod	no	yes	yes	no	98	40	30	65	120
Birdsfoot trefoil[6]	bunch	yes	no	yes	yes	98	60	20	80	400
Flatpea	sod	no	no	yes	yes	98	55	20	75	10
Serecia lespedeza	bunch	no	yes	yes	yes	98	60	20	80	335
Cereals										
Winter wheat	bunch	no	no	no	no	98	85		85	15
Winter rye	bunch	no	no	yes	yes	98	85		85	18
Spring oats	bunch	no	no	no	no	98	85		85	13
Sundangrass	bunch	no	yes	no	no	98	85		85	55
Japanese millet	bunch	yes	no	yes	yes	98	80		80	155

1 Growth habit refers to the ability of the species to either form a dense sod by vegetative means (stolons, rhizomes, or roots) or remain in a bunch or single plant form. If seeded heavily enough, even bunch formers can produce a very dense stand. This is sometimes called a sod, but not in the sense of a sod formed by vegetative means.

2 Once established, plants may grow at a somewhat lower pH, but cover generally is only adequate at pH 6.0 or above.

3 *Minimum seed lots are truly minimum, and seed lots to be used for revegetation purposes should equal or exceed these standards.* Thus, deertongue grass should germinate 75% or better. Crownvetch should have at least 40% readily germinable seed and 30% hard seed. Commonly, seed lots are available that equal or exceed minimum specifications. Remember that disturbed sites are adverse for plant establishment. Ready germination refers to seed that germinates during the period of the germination test and that would be expected, if conditions are favorable, to germinate rapidly when planted. The opposite of ready germination is dormant seed, of which hard seed is one type.

4 Switchgrass seed is sold only on the basis of PLS.

5 Need specific legume inoculant. Inoculant suitable for garden peas and sweetpeas usually is satisfactory for flatpea.

6 Birdsfoot trefoil is adapted over the entire state, except in the extreme southeast where crown and root rots may injure stands.

Penn State, "Erosion Control and Conservation Plantings on Noncropland,"

TABLE 11.4
Recommended Seed Mixtures

Mixture Number	Species	Seeding Rate - Pure Live Seed[1]: Most Sites	Adverse Sites
1[2]	Spring oats (spring), or Annual ryegrass (spring or fall), or Winter wheat (fall), or Winter rye (fall)	64 10 90 56	96 15 120 112
2[3]	Tall fescue, or Fine fescue, or Kentucky bluegrass, plus Redtop[4], or Perennial ryegrass	60 35 25 3 15	75 40 30 3 20
3	Birdsfoot trefoil, plus Tall fescue	6 30	10 35
4	Birdsfoot trefoil, plus Reed canarygrass	6 10	10 15
5[8]	Crownvetch, plus Tall fescue, or Perennial ryegrass	10 20 20	15 25 25
6[5,8]	Crownvetch, plus Annual ryegrass	10 20	15 25
7[8]	Birdsfoot trefoil, plus Crownvetch, plus Tall fescue	6 10 20	10 15 30
8	Flatpea, plus Tall fescue, or Perennial ryegrass	20 20 20	30 30 25
9[6]	Serecia lespedeza, plus Tall fescue, plus Redtop[4]	10 20 3	20 25 3
10	Tall fescue, plus Fine fescue	40 10	60 15
11	Deertongue, plus Birdsfoot trefoil	15 6	20 10
12[7]	Switchgrass, or Big Bluestem, plus Birdsfoot trefoil	15 15 6	20 20 10
13	Orchardgrass, or Smooth bromegrass, plus Birdsfoot trefoil	20 25 6	30 35 10

Penn State, "Erosion Control and Conservation Plantings on Noncropland"

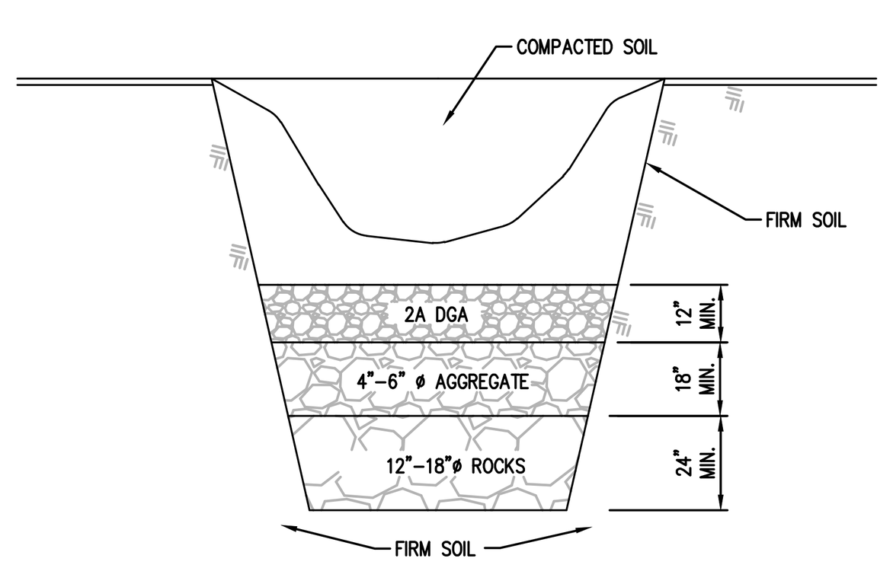
1. PLS is the product of the percentage of pure seed times percentage germination divided by 100. For example, to secure the actual planting rate for switchgrass, divide 12 pounds PLS shown on the seed tag. Thus, if the PLS content of a given seed lot is 35%, divide 12 PLS by 0.35 to obtain 34.3 pounds of seed required to plant one acre. All mixtures in this table are shown in terms of PLS.
2. If high-quality seed is used, for most sites seed spring oats at a rate of 2 bushels per acre, winter wheat at 11.5 bushels per acre, and winter rye at 1 bushel per acre. If germination is below 90%, increase these suggested seeding rates by 0.5 bushel per acre.
3. This mixture is suitable for frequent mowing. Do not cut shorter than 4 inches.
4. Keep seeding rate to that recommended in table. These species have many seeds per pound and are very competitive. To seed small quantities of small seeds such as weeping lovegrass and redtop, dilute with dry sawdust, sand, rice hulls, buckwheat hulls, etc.
5. Use for highway slopes and similar sites where the desired species after establishment is crownvetch.

TABLE 11.5
Recommended Seed Mixtures for Stabilizing Disturbed Areas

Site Condition	Nurse Crop	Seed Mixture (Select one mixture)
Slopes and Banks (not mowed)		
Well-drained	1 plus	3, 5, 8, or 12[1]
Variable drainage	1 plus	3 or 7
Slopes and Banks (mowed)		
Well-drained	1 plus	2 or 10
Slopes and Banks (grazed/hay)		
Well-drained	1 plus	2, 3, or 13
Gullies and Eroded Areas	1 plus	3, 5, 7, or 12[1]
Erosion Control Facilities (BMPs)		
Sod waterways, spillways, frequent water flow areas	1 plus	2, 3, or 4
Drainage ditches		
Shallow, less than 3 feet deep	1 plus	2, 3, or 4
Deep, not mowed	1 plus	5 or 7
Pond banks, dikes, levees, dams, diversion channels, And occasional water flow areas		
Mowed areas	1 plus	2 or 3
Non-mowed areas	1 plus	5 or 7
For hay or silage on diversion channels and occasional water flow areas	1 plus	3 or 13
Highways[2]		
Non-mowed areas		
Pure crownvetch[3]	1 plus	5 or 6
Well-drained	1 plus	5, 7, 8, 9, or 10
Variable drained	1 plus	3 or 7
Poorly drained	1 plus	3 or 4
Areas mowed several times per year	1 plus	2, 3, or 10
Utility Right-of-way		
Well-drained	1 plus	5, 8, or 12[1]
Variable drained	1 plus	3 or 7
Well-drained areas for grazing/hay	1 plus	2, 3, or 13
Effluent Disposal Areas	1 plus	3 or 4
Sanitary Landfills	1 plus	3, 5, 7, 11[1], or 12[1]
Surface mines		
Spoils, mine wastes, fly ash, slag, settling basin		
Residues and other severely disturbed areas (lime to soil test)	1 plus	3, 4, 5, 7, 8, 9, 11[1], or 12[1]
Severely disturbed areas for grazing/hay	1 plus	3 or 13

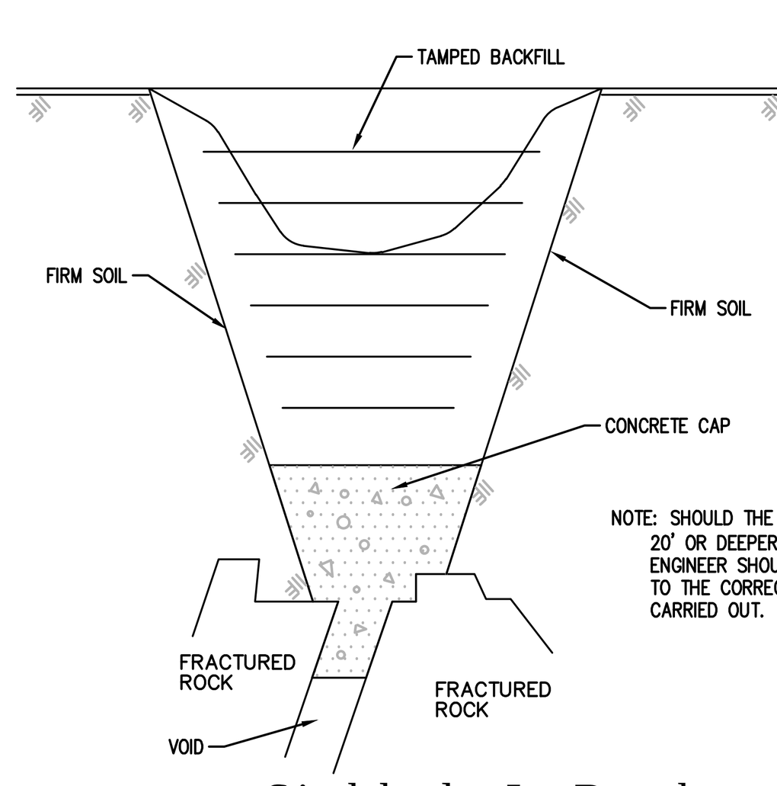
Penn State, "Erosion Control and Conservation Plantings on Noncropland"

1. For seed mixtures 11 and 12, only use spring oats or weeping lovegrass (included in mix) as nurse crop.
2. Contact the Pennsylvania Department of Transportation district roadside specialist for specific suggestions on treatment techniques and management practices.
3. Seed mixtures containing crown vetch should not be used in areas adjacent to wetlands or stream channels due to the invasive nature of this species.



Sinkhole In Soil
NOT TO SCALE

1. THE REPAIR TECHNIQUES AS DESCRIBED BELOW ARE SUITABLE ONLY IF THE SINKHOLE IS LOCATED IN AN OPEN AREA. IF THE SINKHOLE IS LOCATED UNDER OR NEAR A STRUCTURE OR A BUILDING, COMPACTION GROUTING MAY BE NECESSARY FOR REMEDIATION, AS DETERMINED BY A GEOTECHNICAL ENGINEER LICENSED IN THE COMMONWEALTH OF PENNSYLVANIA.
2. EXCAVATE DOWN TO ROCK TO SINKHOLE THROAT OR TO A DEPTH OF 15 FEET BELOW GRADE, WHICHEVER OCCURS FIRST.
3. IF ROCK IS ENCOUNTERED WITHIN 10 FEET, STOP EXCAVATION. THE LIMIT OF EXCAVATION SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER. GENERALLY, A ZONE OF SOFT, IN-FILL MATERIAL WILL BE FOUND WHICH COVERS MOST OF THE BOTTOM OF THE EXCAVATION. COVER THIS AREA WITH A GRADED ROCK FILTER AS SHOWN ABOVE.
4. BACKFILL HOLE WITH RELATIVELY IMPERMEABLE CLAY SOIL. COMPACT SOIL IN 6" LIFTS WITH A POWER TAMPER OR RAMMER TO AT LEAST 95% OF THE STANDARD PROCTOR.
5. BACKFILL HOLE ABOVE EXISTING GRADE TO DIVERT SURFACE WATER.

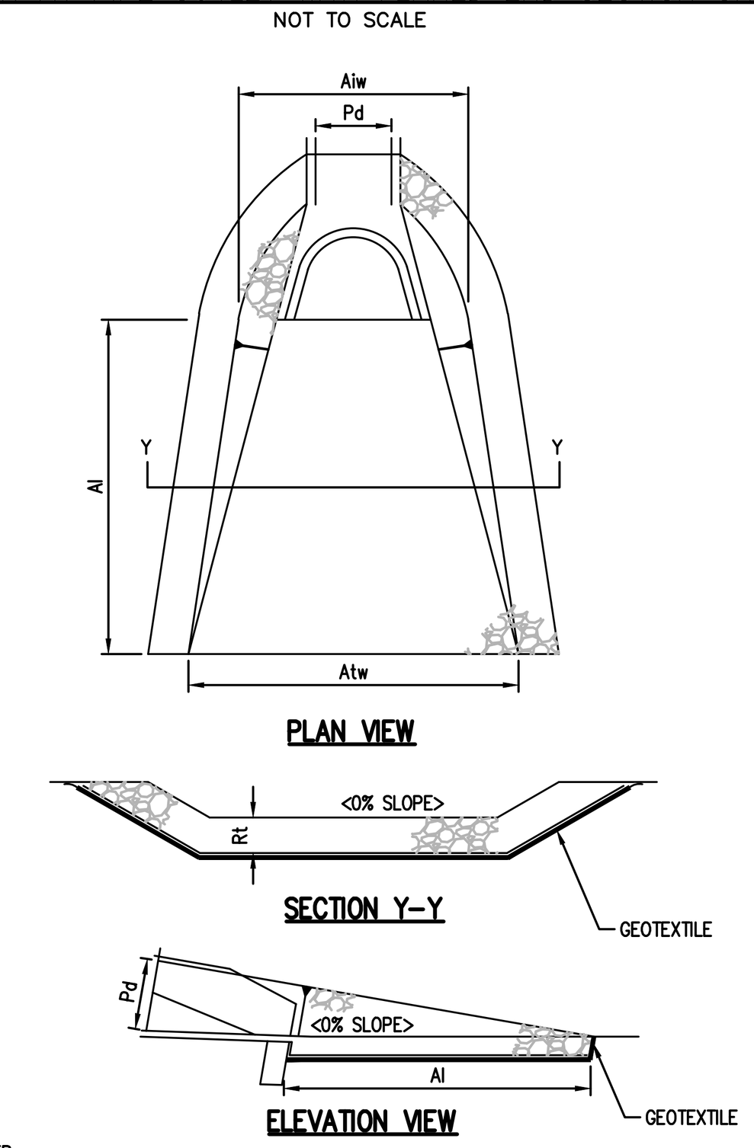


Sinkhole In Rock
NOT TO SCALE

1. THE REPAIR TECHNIQUES AS DESCRIBED BELOW ARE SUITABLE ONLY IF THE SINKHOLE IS LOCATED IN AN OPEN AREA. IF THE SINKHOLE IS LOCATED UNDER OR NEAR A STRUCTURE OR A BUILDING, COMPACTION GROUTING MAY BE NECESSARY FOR REMEDIATION, AS DETERMINED BY A GEOTECHNICAL ENGINEER LICENSED IN THE COMMONWEALTH OF PENNSYLVANIA.
2. EXCAVATE DOWN TO BEDROCK OR TO THE SINKHOLE THROAT .
3. EXPOSE THE ROCK SURFACE BY WASHING THE AREA WITH A SMALL HOSE WATER SPRAY AND INSTALL HIGHSUMP CEMENT INTO VOIDS AND CREVICES UNTIL VOIDS ARE FILLED AND A CAP COVERS THE AREA. THE LIMIT OF EXCAVATION AND CONCRETE SHALL BE DETERMINED BY THE ENGINEER.
4. AFTER CONCRETE HAS SET OVERNIGHT, BACKFILL HOLE WITH RELATIVELY IMPERMEABLE CLAY SOIL. COMPACT SOIL IN 6" LIFTS WITH A POWER TAMPER OR RAMMER TO AT LEAST 95% OF THE STANDARD PROCTOR. THE TOP THREE(3) FEET SHALL BE BACKFILLED WITH 2RC CRUSHED AGGREGATE.
5. BACKFILL HOLE ABOVE EXISTING GRADE TO DIVERT SURFACE WATER.
6. WHEN SINKHOLE IS UNDER A PROPOSED UTILITY. CONCRETE IS TO BE SET 6" BELOW THE UTILITY TO ALLOW FOR A STONE BEDDING.

STANDARD CONSTRUCTION DETAIL # 9-1
RIPRAP APRON AT PIPE OUTLET WITH FLARED END SECTION OR ENDWALL

NOT TO SCALE



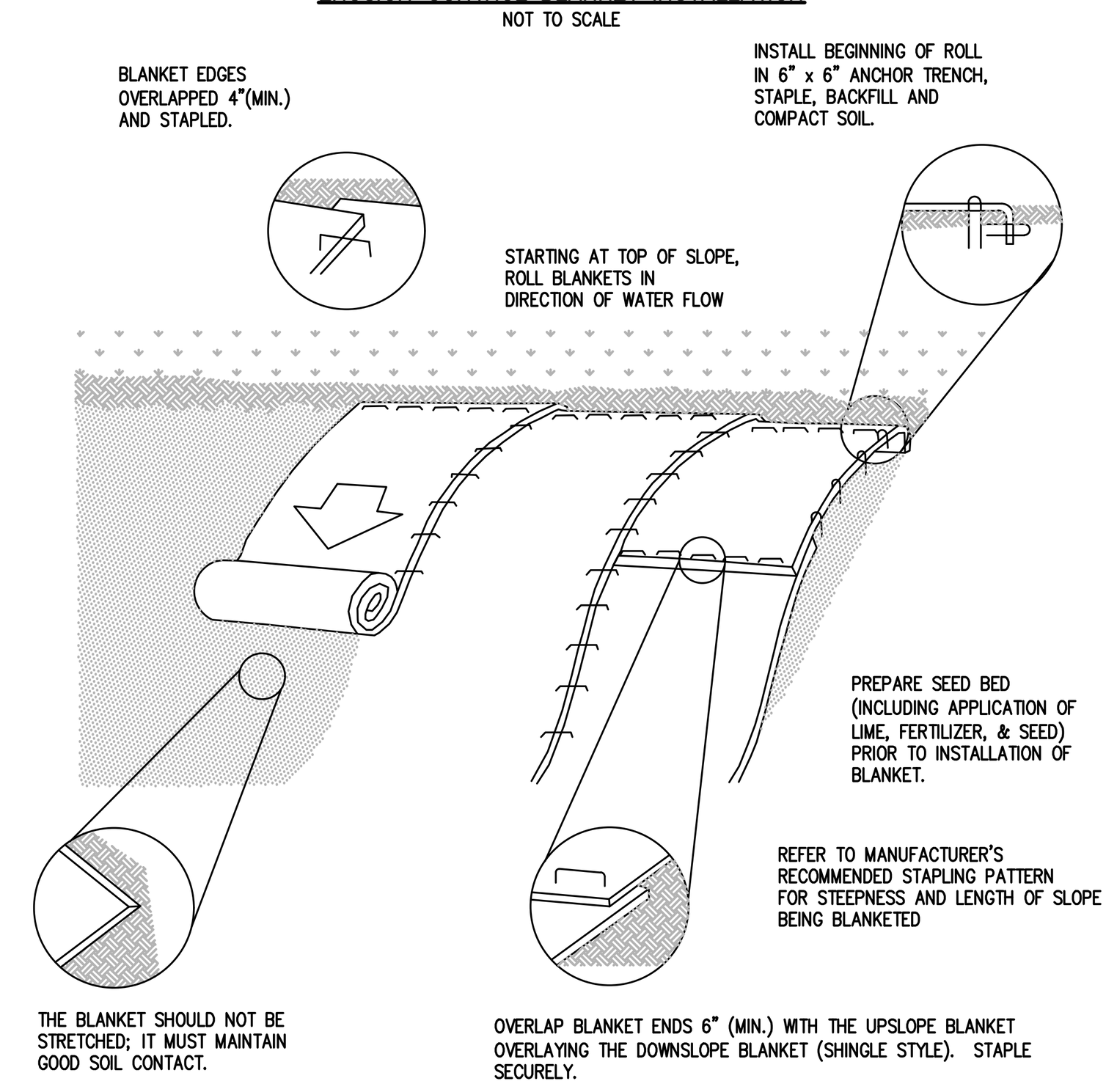
PA DEP

OUTLET NO.	PIPE DIA Pd (IN)	RIPRAP: SIZE (R-)	RIPRAP: THICK Rt (IN)	APRON: LENGTH Al (FT)	APRON: INITIAL WIDTH Aiw (FT)	APRON: TERMINAL WIDTH Atw (FT)
FES 1	24	R-4	18	15	6	21
FES 7	24	R-4	18	15	6	21

General Notes:
1. ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.
2. ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.

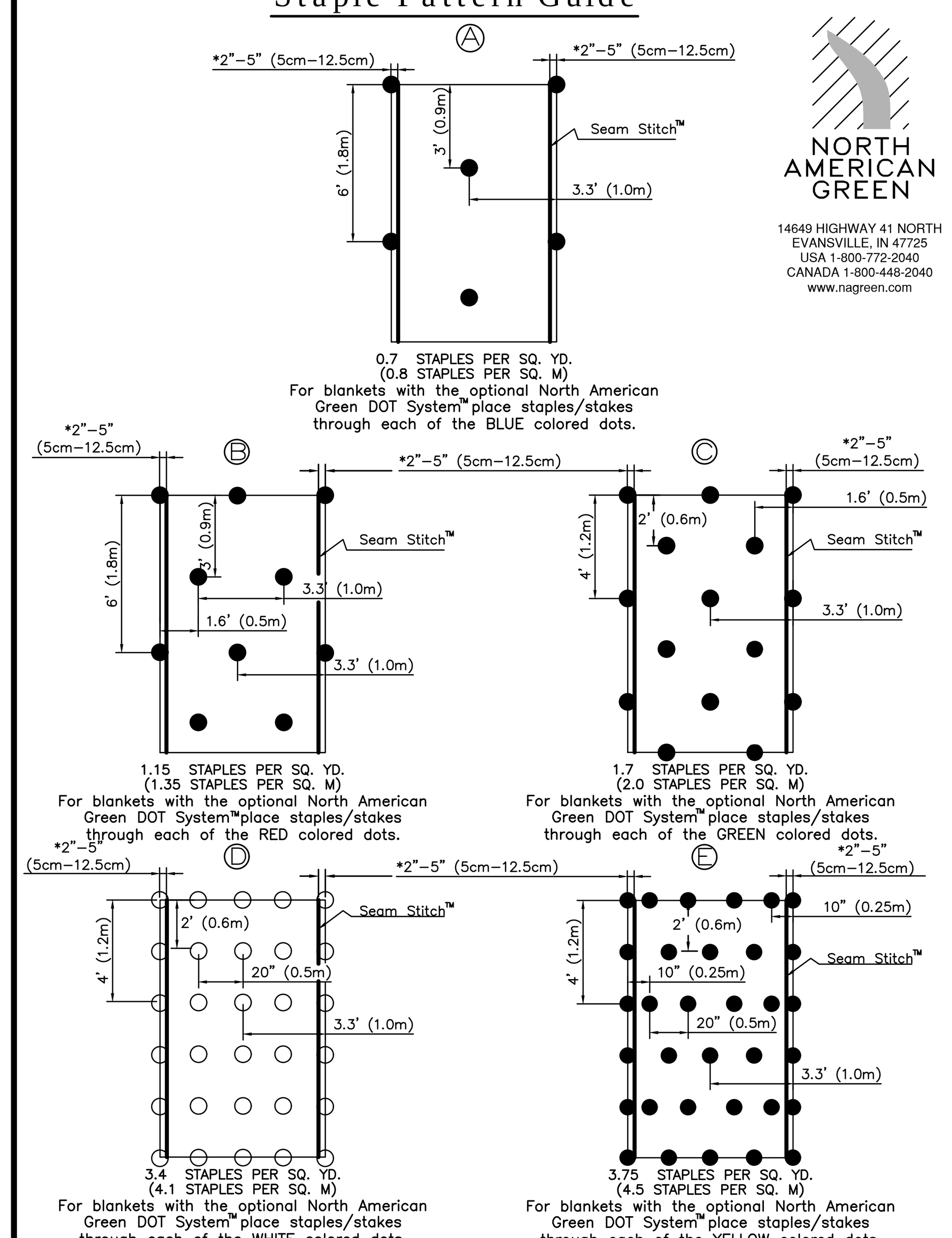
Standard Construction Detail # 11-1
EROSION CONTROL BLANKET INSTALLATION

NOT TO SCALE



General Notes:
1. SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PRIOR TO INSTALLING THE BLANKET.
2. PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.
3. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.
4. BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.
5. THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
6. BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE BLANKETED AREA. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.

Staple Pattern Guide

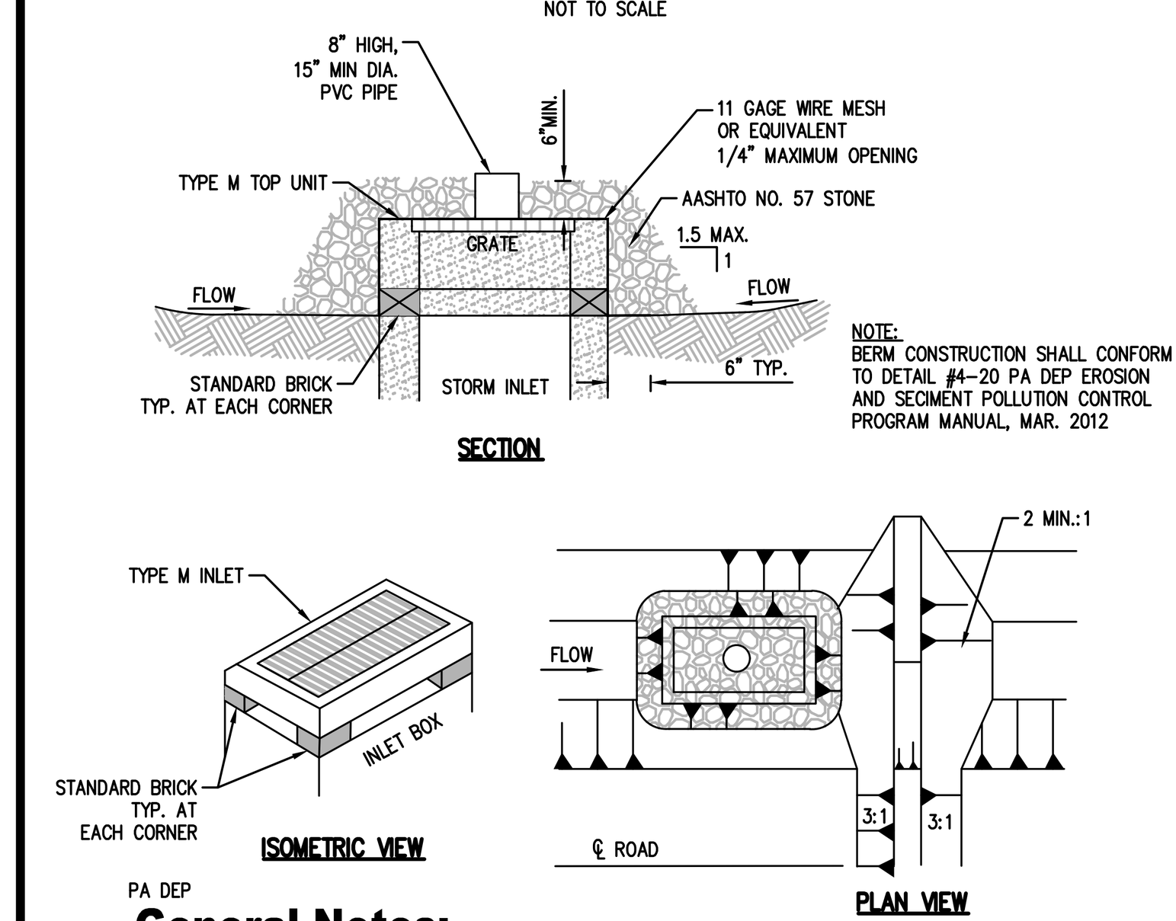


NORTH AMERICAN GREEN
14649 HIGHWAY 41 NORTH
EVANSVILLE, IN 47725
USA 1-800-772-2040
CANADA 1-800-448-2040
www.nagreen.com

*Location of Seam Stitch™ will vary depending on North American Green product type:

Standard Construction Detail # 4-23
ALTERNATE TYPE M INLET PROTECTION – NOT AT GRADE

NOT TO SCALE



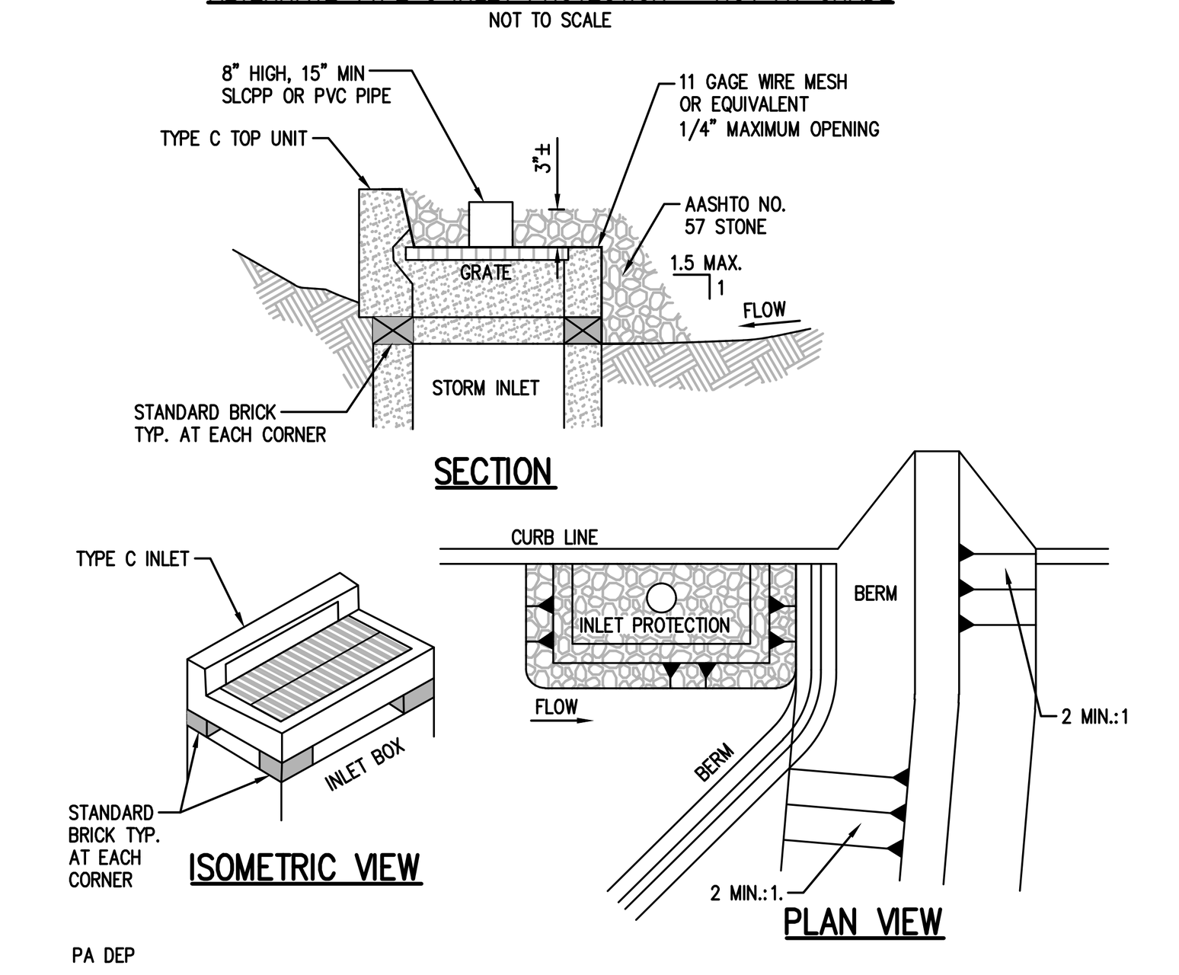
PA DEP

General Notes:
1. INLET PROTECTION SHALL NOT BE REQUIRED FOR INLETS TRIBUTARY TO SEDIMENT BASINS OR SEDIMENT TRAPS. ALTERNATE TYPE C INLET PROTECTION CAN BE USED ON ONE ACRE MAXIMUM DRAINAGE AREA WITH 15" OVERFLOW PIPE AND 4" HEAD.
2. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS NOT LOCATED AT LOW POINTS. EARTHEN BERMS SHALL BE STABILIZED WITH VEGETATION AND MAINTAINED UNTIL ROADWAY IS STONED OR TRIBUTARY AREA IS PERMANENTLY VEGETATED. ROAD SUBBASE BERMS SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED.
3. INLETS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE HEIGHT OF THE STONE. DAMAGED INSTALLATIONS SHALL BE REPAIRED OR REPLACED WITHIN 24 HOURS OF INSPECTION.
4. FOR SYSTEMS DISCHARGING TO HQ OR EV SURFACE WATER, A 6 INCH THICK COMPOST LAYER SHALL BE SECURELY ANCHORED ON OUTSIDE AND OVER TOP OF STONE. COMPOST SHALL MEET THE FOLLOWING STANDARDS:

ORGANIC MATTER CONTENT	80%–100% (DRY WEIGHT BASIS)
ORGANIC PORTION	FIBROUS AND ELONGATED
pH	5.5–8.0
MOISTURE CONTENT	35%–55%
PARTICLE SIZE	98% PASS THROUGH 1" SCREEN
SOLUBLE SALT CONCENTRATION	5.0 dS/m (mmhos/cm) MAXIMUM

Standard Construction Detail # 4-22
ALTERNATE TYPE C INLET PROTECTION – NOT AT GRADE

NOT TO SCALE



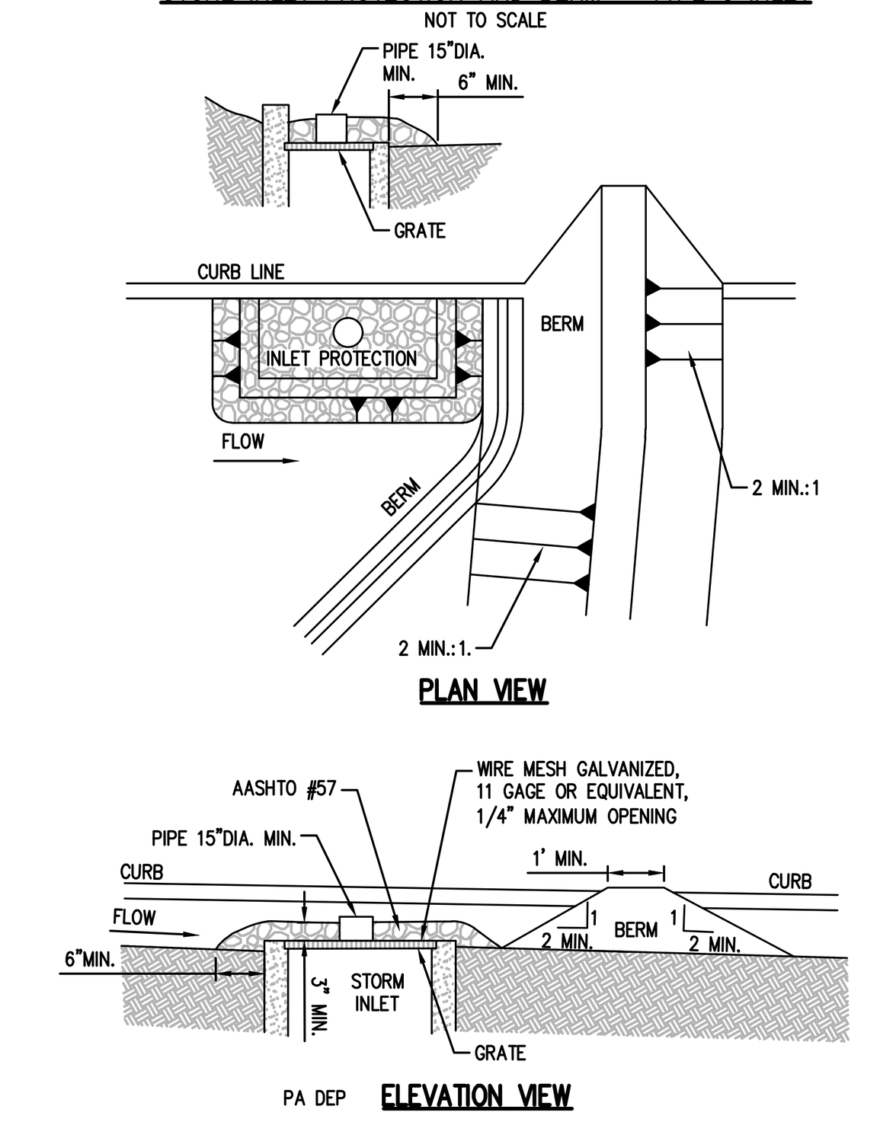
PA DEP

General Notes:
1. INLET PROTECTION SHALL NOT BE REQUIRED FOR INLETS TRIBUTARY TO SEDIMENT BASINS OR SEDIMENT TRAPS. ALTERNATE TYPE C INLET PROTECTION CAN BE USED ON ONE ACRE MAXIMUM DRAINAGE AREA WITH 15" OVERFLOW PIPE AND 4" HEAD.
2. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS NOT LOCATED AT LOW POINTS. EARTHEN BERMS SHALL BE STABILIZED WITH VEGETATION AND MAINTAINED UNTIL ROADWAY IS STONED OR TRIBUTARY AREA IS PERMANENTLY VEGETATED. ROAD SUBBASE BERMS SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED.
3. INLETS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE HEIGHT OF THE STONE. DAMAGED INSTALLATIONS SHALL BE REPAIRED OR REPLACED WITHIN 24 HOURS OF INSPECTION.
4. FOR SYSTEMS DISCHARGING TO HQ OR EV SURFACE WATER, A 6 INCH THICK COMPOST LAYER SHALL BE SECURELY ANCHORED ON OUTSIDE AND OVER TOP OF STONE. COMPOST SHALL MEET THE FOLLOWING STANDARDS:

ORGANIC MATTER CONTENT	80%–100% (DRY WEIGHT BASIS)
ORGANIC PORTION	FIBROUS AND ELONGATED
pH	5.5–8.0
MOISTURE CONTENT	35%–55%
PARTICLE SIZE	98% PASS THROUGH 1" SCREEN
SOLUBLE SALT CONCENTRATION	5.0 dS/m (mmhos/cm) MAXIMUM

Standard Construction Detail # 4-19
STONE INLET PROTECTION AND BERM – TYPE C INLET

NOT TO SCALE



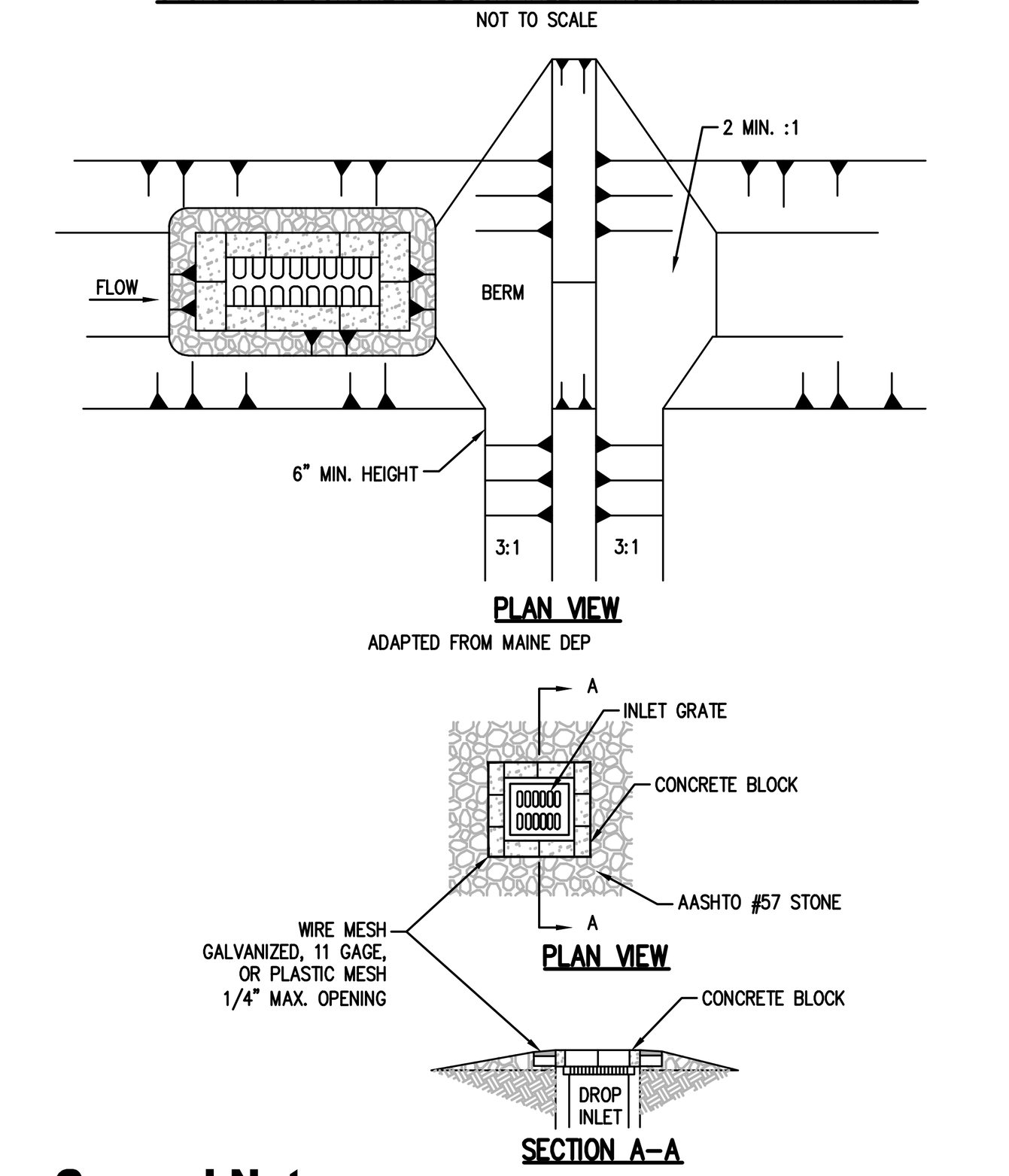
PA DEP

General Notes:
1. INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.
2. ROLLED EARTHEN BERM SHALL BE MAINTAINED IMMEDIATELY DOWN GRADIENT OF THE PROTECTED INLET UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. A 6" MINIMUM HEIGHT ASPHALT BERM SHALL BE MAINTAINED UNTIL ROADWAY SURFACE RECEIVES FINAL COAT.
3. STONE INLET PROTECTION AND BERM FOR A TYPE C INLET CAN BE USED IN ONE ACRE MAXIMUM DRAINAGE AREA WITH 15" OVERFLOW PIPE AND 4" HEAD. A PERFORATED PLATE WELDED TO A METAL RISER MAY NOT BE SUBSTITUTED FOR THE WIRE MESH. A SLOTTED PLATE WELDED TO THE RISER MAY BE USED IN CONJUNCTION WITH THE WIRE MESH IF CALCULATIONS ARE PROVIDED TO SHOW SUFFICIENT CAPACITY OF THE INLET TO ACCEPT THE PEAK RUNOFF FOR A 2-YEAR STORM EVENT FROM THE TRIBUTARY DRAINAGE AREA.
4. SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE HEIGHT OF THE STONE. DAMAGED OR CLOGGED INSTALLATIONS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.
5. DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.
6. FOR SYSTEMS DISCHARGING TO HQ OR EV SURFACE WATER, A 6" THICK COMPOST LAYER SHALL BE SECURELY ANCHORED ON OUTSIDE AND OVER TOP OF STONE. COMPOST SHALL MEET THE FOLLOWING STANDARDS:

ORGANIC MATTER CONTENT	80%–100% (DRY WEIGHT BASIS)
ORGANIC PORTION	FIBROUS AND ELONGATED
pH	5.5–8.0
MOISTURE CONTENT	35%–55%
PARTICLE SIZE	98% PASS THROUGH 1" SCREEN
SOLUBLE SALT CONCENTRATION	5.0 dS/m (mmhos/cm) MAXIMUM

Standard Construction Detail # 4-18
STONE AND CONCRETE BLOCK INLET PROTECTION–TYPE M INLET

NOT TO SCALE

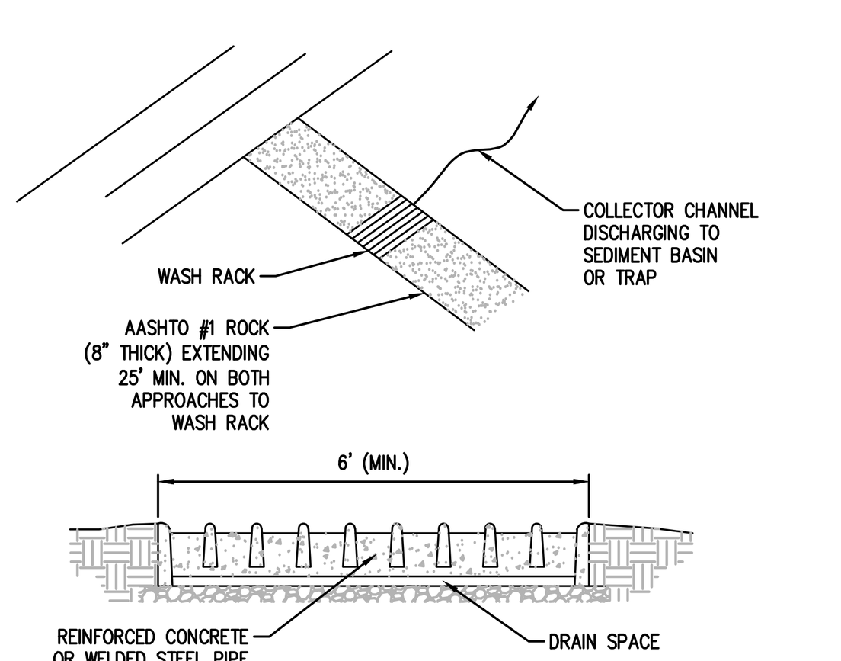


General Notes:
1. MAXIMUM DRAINAGE AREA = 1 ACRE.
2. INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS NOT LOCATED AT A LOW POINT.
3. ROLLED EARTHEN BERM IN ROADWAY SHALL BE PROVIDED AND MAINTAINED IMMEDIATELY DOWN GRADIENT OF THE PROTECTED INLET 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 TO REMAIN PERMANENTLY.
4. TOP OF BLOCK SHALL BE AT LEAST 6 INCHES BELOW ADJACENT ROADS IF PONDED WATER WOULD POSE A SAFETY HAZARD TO TRAFFIC.
5. SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE HEIGHT OF THE STONE. DAMAGED OR CLOGGED INSTALLATIONS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.
6. FOR SYSTEMS DISCHARGING TO AN HQ OR EV SURFACE WATER, A 6 INCH THICK COMPOST LAYER SHALL BE SECURELY ANCHORED ON OUTSIDE AND OVER TOP OF STONE. COMPOST SHALL MEET THE FOLLOWING STANDARDS:

ORGANIC MATTER CONTENT	80%–100% (DRY WEIGHT BASIS)
ORGANIC PORTION	FIBROUS AND ELONGATED
pH	5.5–8.0
MOISTURE CONTENT	35%–55%
PARTICLE SIZE	98% PASS THROUGH 1" SCREEN
SOLUBLE SALT CONCENTRATION	5.0 dS/m (mmhos/cm) MAXIMUM

STANDARD CONSTRUCTION DETAIL # 3-2
ROCK CONSTRUCTION ENTRANCE WITH WASH RACK

NOT TO SCALE

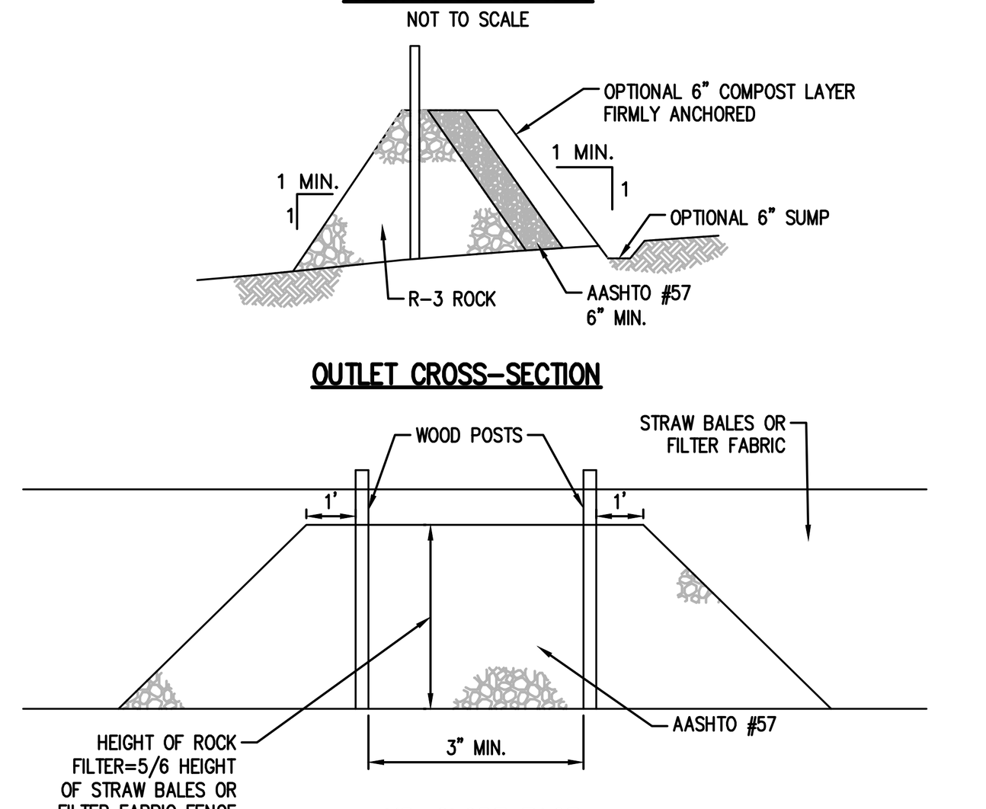


GENERAL NOTES:
1. WASH RACK SHALL BE 20 FEET (MIN.) WIDE OR TOTAL WIDTH OF ACCESS.
2. WASH RACK SHALL BE DESIGNED AND CONSTRUCTED TO ACCOMMODATE ANTICIPATED CONSTRUCTED VEHICULAR TRAFFIC.
3. A WATER SUPPLY SHALL BE MADE AVAILABLE TO WASH THE WHEELS OF ALL VEHICLES EXITING THE SITE.

MAINTENANCE:
ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE OF ROCK MATERIAL SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. DRAIN SPACE UNDER WASH RACK SHALL BE KEPT OPEN AT ALL TIMES. DAMAGE TO THE WASH RACK SHALL BE REPAIRED PRIOR TO FURTHER USE OF THE RACK. ALL SEDIMENT DEPOSITED ON ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

Standard Construction Detail # 4-6
ROCK FILTER OUTLET

NOT TO SCALE



General Notes:
1. A ROCK FILTER OUTLET SHALL BE INSTALLED WHERE FAILURE OF A STRAW BALE BARRIER OR FILTER FABRIC FENCE HAS OCCURRED DUE TO CONCENTRATED FLOW. ANCHORED COMPOST LAYER SHALL BE USED ON UPSLOPE FACE IN HQ AND EV WATERSHEDS.
2. SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/3 THE HEIGHT OF THE OUTLET.

PRELIMINARY/FINAL LAND DEVELOPMENT

PLAN TITLE: EROSION & SEDIMENTATION CONTROL DETAILS

PROJECT TITLE: LVIP VII – LOT 63
2680 COMMERCE CENTER BLVD.

CITY OF BETHLEHEM
NORTHAMPTON COUNTY
PENNSYLVANIA

HanoverEngineering
Bethlehem Office
252 Brodhead Road, Suite 100
Bethlehem, PA 18017-8944
P:610.691.5644
F:610.691.6968
HanoverEng.com

SEAL: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER ANDREW THOMAS BOHL PE062856

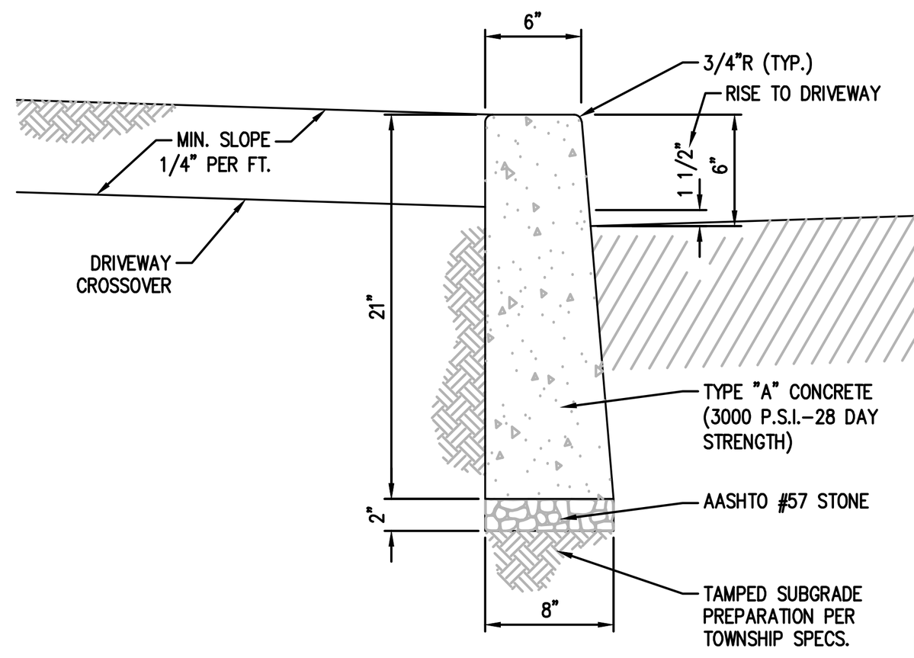
NO.	REVISIONS	DATE
1	PER CITY COMMENT LETTER	6/06/22

DRAWN BY: DM
CHECKED BY: AB
SCALE: AS NOTED
DATE: 3/01/22
PROJECT NO. 4920
SHEET NO. 12 OF 14

Y:\Projects\Private\4920-Lot 63 LVIP\DWG\Current Plan Set\Land Development Plan\ 4920_PLANS-001-Cover-details.dwg Jun 07,2022 – 2:13pm

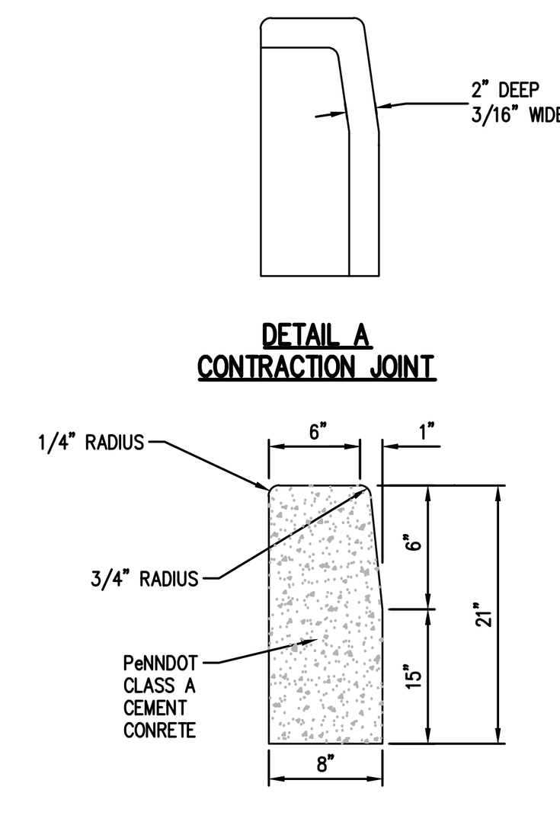
1. 1/2" PREMOLDED EXPANSION JOINTS SHALL BE PLACED AT CONTACTS WITH EXISTING CURB, ANY INLET STRUCTURE AND AT 30 FT. MAXIMUM INTERVALS.

2. CONTRACTION JOINTS ARE TO BR SPACED AT EQUAL INTERVALS, NOT EXCEEDING 10 FT. BETWEEN EXPANSION JOINTS.



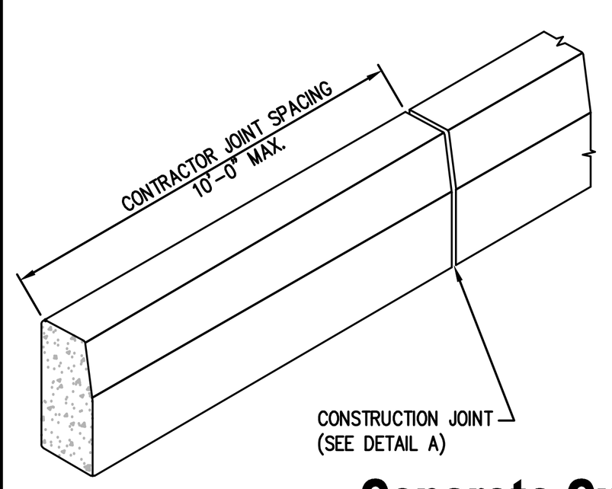
Upright Curb Detail

NOT TO SCALE



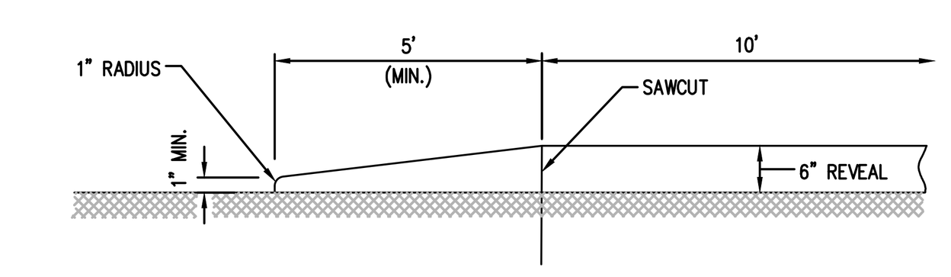
Notes:

1. MATERIALS AND CONSTRUCTION SHALL MEET THE REQUIREMENTS OF PUBLICATION 408, SECTION 630.
2. SPACE CONTRACTION JOINTS IN UNIFORM LENGTHS OR SECTIONS.
3. PLACE 3/4" PREMOLDED EXPANSION JOINT FILLER MATERIAL AT STRUCTURES AND AT THE END OF THE WORK DAY. CUT MATERIAL TO CONFORM TO AREA ADJACENT TO CURB OR TO CONFORM TO CROSS SECTIONAL AREA OF CURB.



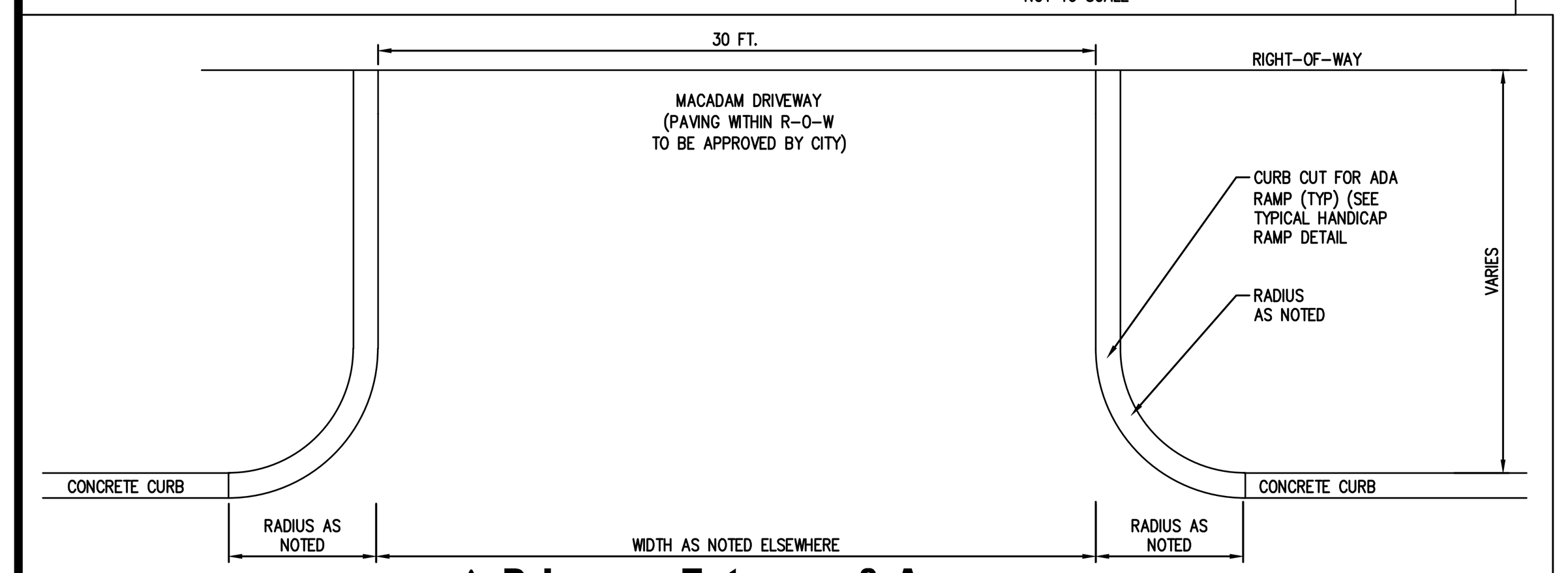
Concrete Curb

NOT TO SCALE



Typical Curb Taper Detail

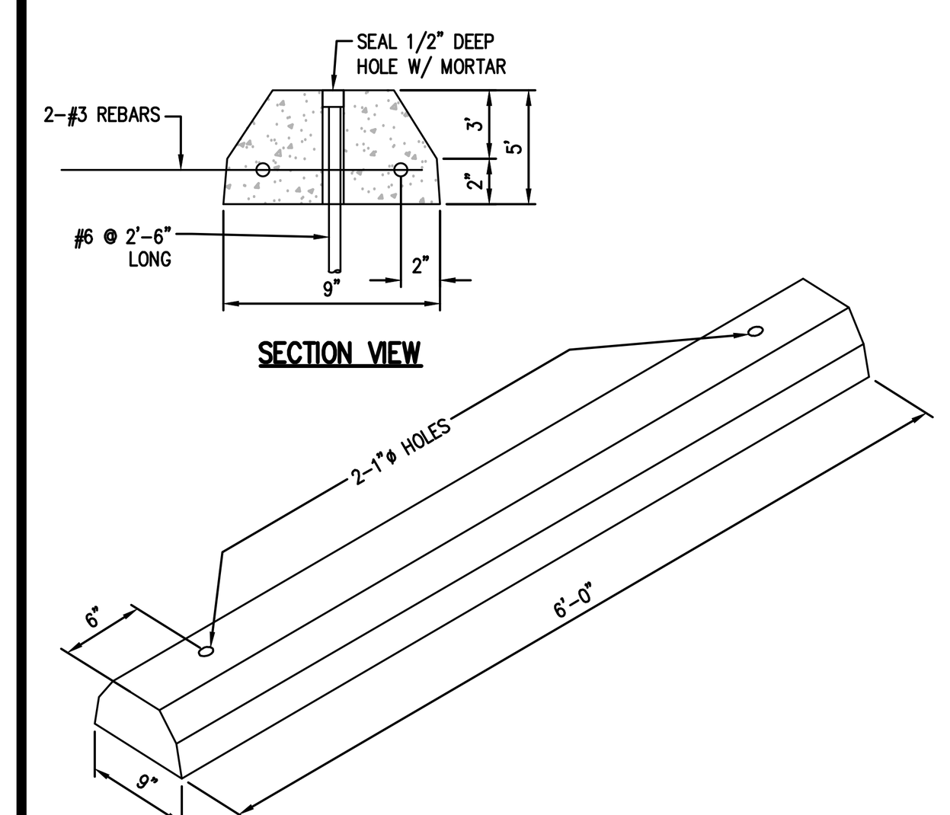
NOT TO SCALE



1 Driveway Entrance & Apron

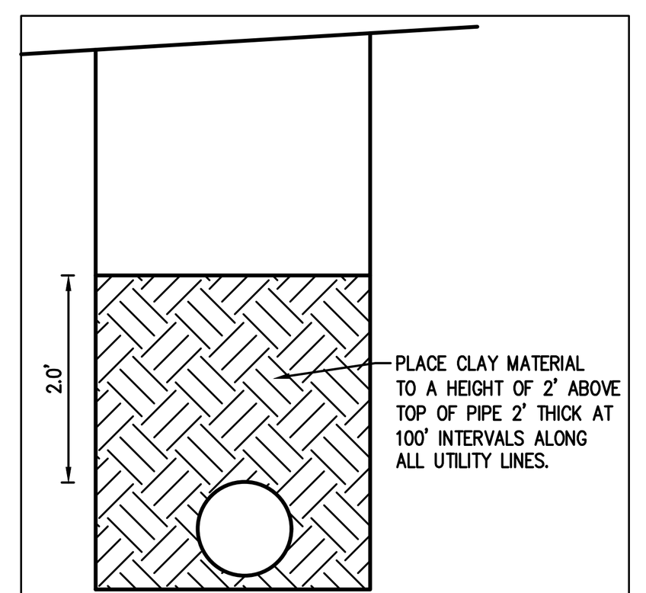
(WITHIN CITY R.O.W.)

NOT TO SCALE



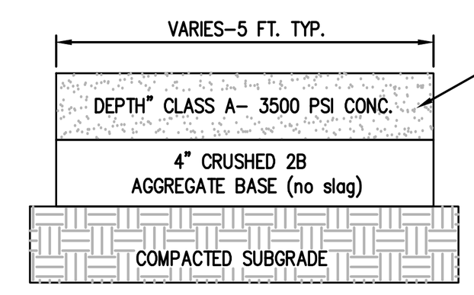
Precast Concrete Wheel Stop Detail

NOT TO SCALE



Typical Trench Plug

NOT TO SCALE



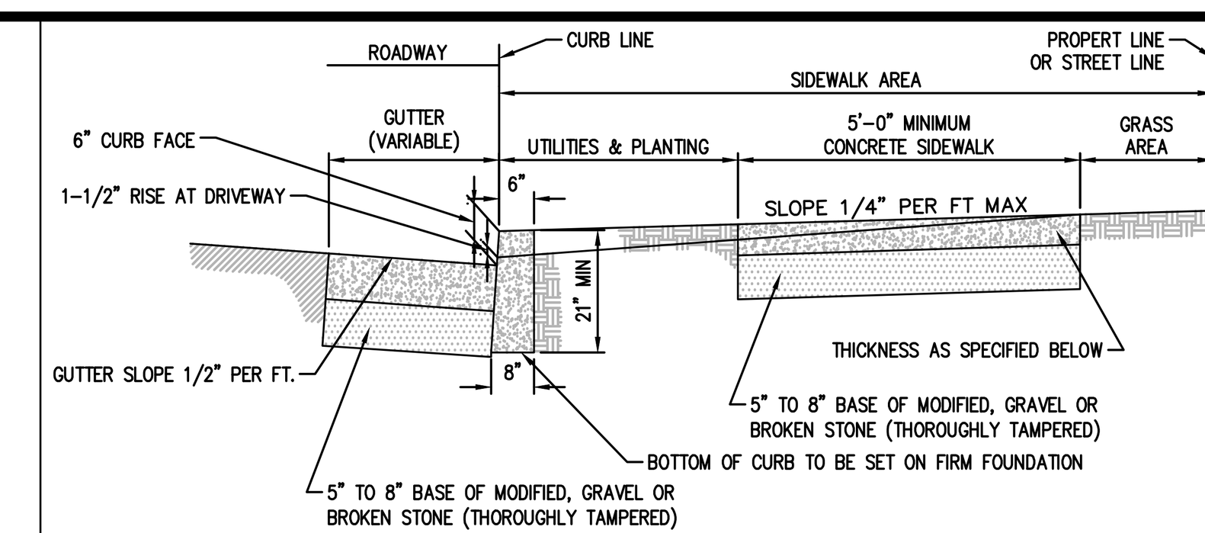
Note:

1. CONSTRUCT IN SECTIONS NOT OVER 10 FEET WITH VERTICAL JOINTS FOR FULL DEPTH OF PAVEMENT. THE JOINTS SHALL BE MADE BY REMOVABLE METAL PLATES SO THAT ADJACENT BLOCKS WILL BE MADE ON DIFFERENT DAYS.
2. EXPANSION JOINTS LOCATED 30' O.C.
3. TOOLED JOINTS LOCATED 5' O.C.
4. SIDEWALK IS TO BE LIGHT BROOM FINISHED IN THE DIRECTION OF SIDEWALK WIDTH
5. ALL MATERIAL AND CONSTRUCTION PROCEDURES SHALE COMPLY WITH THE CITY OF BETHLEHEM ORDINANCE
6. ALL SIDEWALK OUTSIDE OF THE ROW SHALL USE ABOVE DETAIL. ALL SIDEWALK WITHIN THE ROW SHALL FOLLOW THE CITY STANDARD "CONSTRUCTION STANDARD No. 1".

Concrete Sidewalk Detail

(ON-SITE)

NOT TO SCALE



General Requirements:

ONE COURSE (MONOLITHIC) CONSTRUCTION FOR ALL CURB, GUTTER AND SIDEWALK CONCRETE MIX: TO BE CLASS A CONCRETE 3300# 6 BAG MIX – 5.6 GAL. WATER PER BAG THROUGHTOUT; USE POWER BATCH MIXER. NO SLAG.

CURB: 21" MINIMUM DEPTH WITH APPROVED FINISH ON TOP AND EXPOSE FACE.

GUTTER: 8" DEPTH – SLOPE OF GUTTER 1/2" RISE PER FOOT AWAY FROM CURB.

SIDEWALK: THICKNESS – RESIDENTIAL AREA – 5", BUSINESS AND INDUSTRIAL AREAS – 6"
AT RESIDENTIAL DRIVEWAYS – 6", AT BUSINESS AND INDUSTRIAL DRIVEWAYS – 8"
FINISH – USE WOOD FLOAT TO PRODUCE SKID RESISTANCE SURFACE.
ONGRADES OF 5% OR MORE PRODUCE A ROUGHER FINISH.
SLOPE – WALK AND PARKWAY AREAS 1/4" PER FOOT (2%) TOWARD CURB.

EXPANSION AND CONTRACTION JOINTS: SEE CITY CONSTRUCTION STANDARD NO. 1A.

HANDICAP RAMPS: REQUIRED ON ALL RADII IN ACCORDANCE WITH CURRENT ADA REQUIREMENTS.

DRIVEWAYS: SEE CITY STANDARD DRIVEWAY ENTRANCE AND APRON SKETCH.

EXCAVATION IN CARTWAY WHEN EXCAVATING IN THE CARTWAY OF THE CITY STREET, A CLEAN, FULL DEPTH CUT-BY JACK HAMMERING OR SAWCUTTING-SHALL BE MADE IN THE STREET BETWEEN THE AFFECTED AND THE UNAFFECTED WORK AREAS. FURTHER, FINAL RESTORATION IN THE AFFECTED AREA OF THE STREET SHALL CONSIST OF CREATING A NEW CLEAN CUT BY SAWCUTTING 12" BEYOND THE EDGE OF ANY AFFECTED WORK AREAS, BACKFILLING WITH PENNDOT 2A MODIFIED STONE, AND PROPERLY COMPACTING THIS STONE TO THE ELEVATION OF THE TOP OF THE SUBBASE (I.E. BOTTOM OF THE BASE COURSE OF MACADAM), BUT NO HIGHER THAN 3-INCHES BELOW THE FINISH GRADE-EXCEPT AS REQUIRED TO PROVIDE REASONABLE TEMPORARY ACCESS AT DRIVEWAYS.

Ordinance Requirements:

WARRANT OF SURVEY – PROCURED FROM THE CITY ENGINEER'S OFFICE; PROVIDES FOR ESTABLISHING LINE & GRADES; STAKES TO BE PROTECTED BY APPLICANT AND USED WITHIN 30 DAYS.

EXCAVATION PERMIT – PROCURED FROM THE CITY ENGINEER'S OFFICE; FOR SIDEWALK AND DRIVEWAY CONSTRUCTION

DETAIL REQUIREMENTS:
FOR FURTHER DETAILS AND OTHER REQUIREMENTS SEE THE FOLLOWING DOCUMENTS ON FILE IN THE OFFICE OF THE CITY ENGINEER:
"STANDARD SPECIFICATIONS FOR THE CONSTRUCTION OF CONCRETE CURB, GUTTER AND SIDEWALK"
CODIFIED ORDINANCES OF THE CITY OF BETHLEHEM, ARTICLES 903 AND 909.

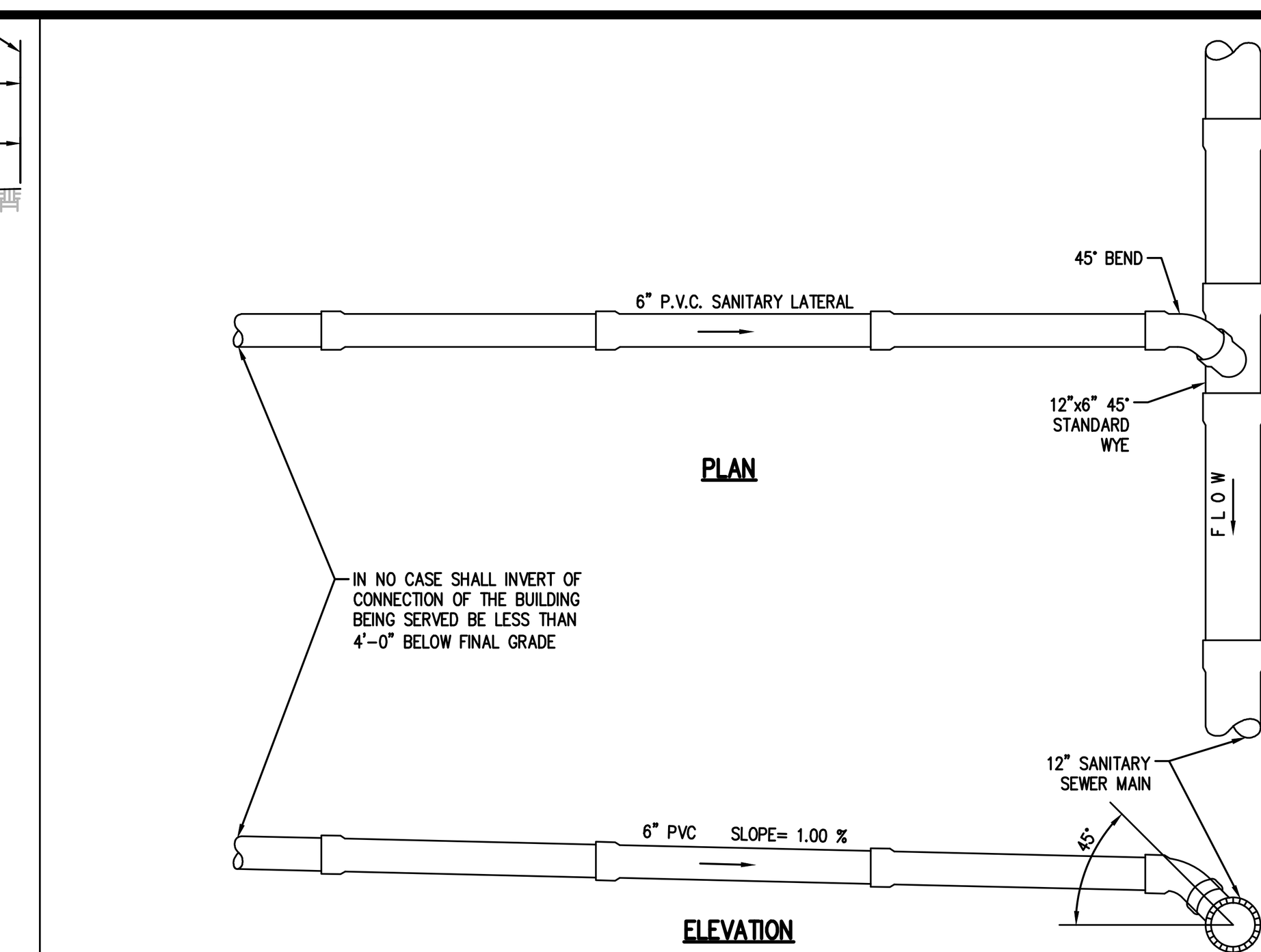
NOTE:
* WHENEVER A CURB, GUTTER AND/OR SIDEWALK IS LOCATED IN THE HISTORIC DISTRICT, SPECIAL REQUIREMENTS MAY APPLY.
* CHANGES TO DIMENSIONAL REQUIREMENTS MAY BE CONSIDERED IN CASES WHERE OBSTRUCTIONS OR ENCROACHMENTS EXIST. ANY EXCEPETIONS MUST BE APPROVED BY THE CITY ENGINEER. CURRENT ADA REQUIREMENTS MUST BE IN ALL CASES.

CITY OF BETHLEHEM, PA.
BUREAU OF ENGINEERING

Construction Standard No. 1

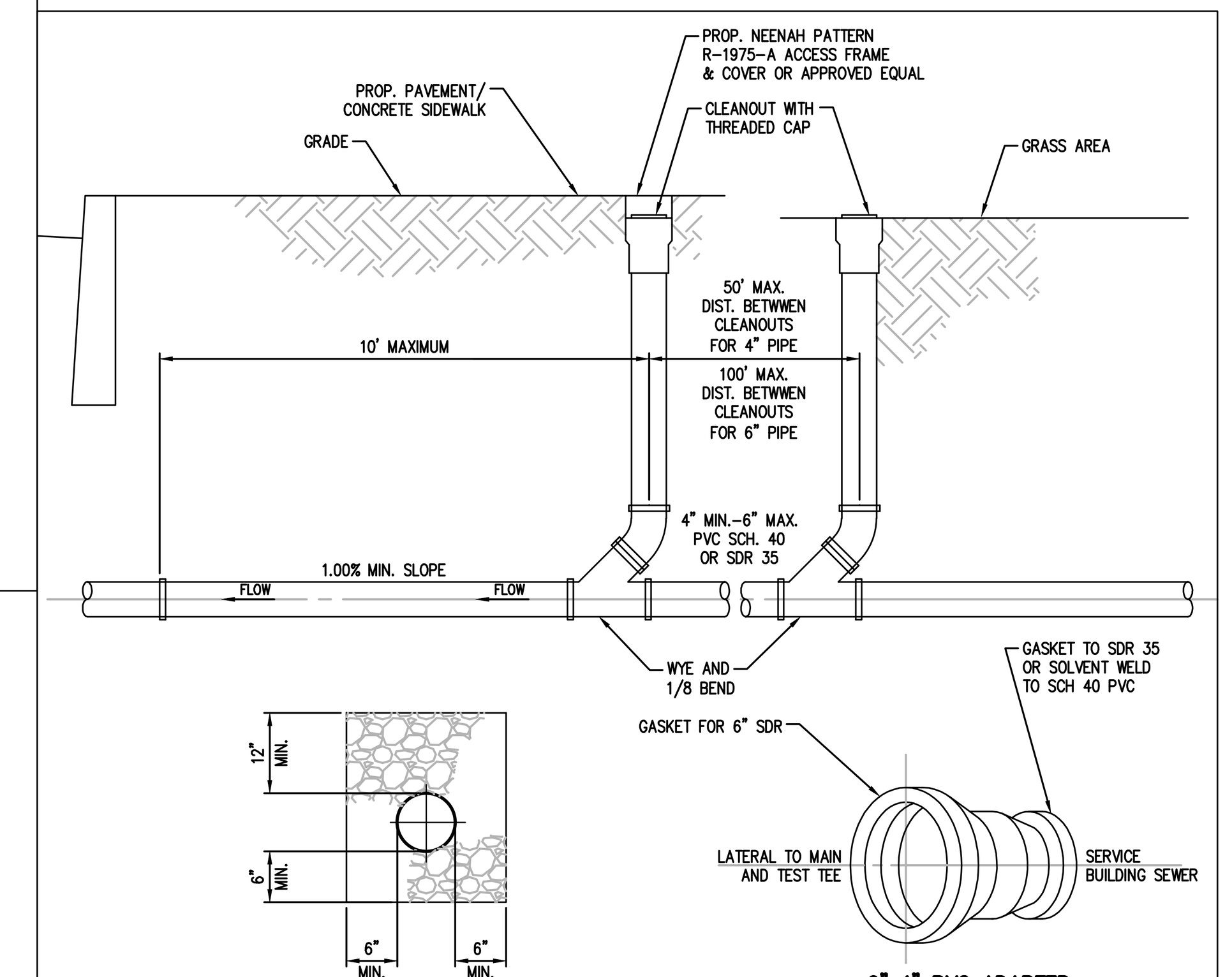
NOT TO SCALE

FOR CONCRETE CURB, GUTTER AND SIDEWALK
FEBRUARY 7, 2001
REVISED JUNE 4, 2013



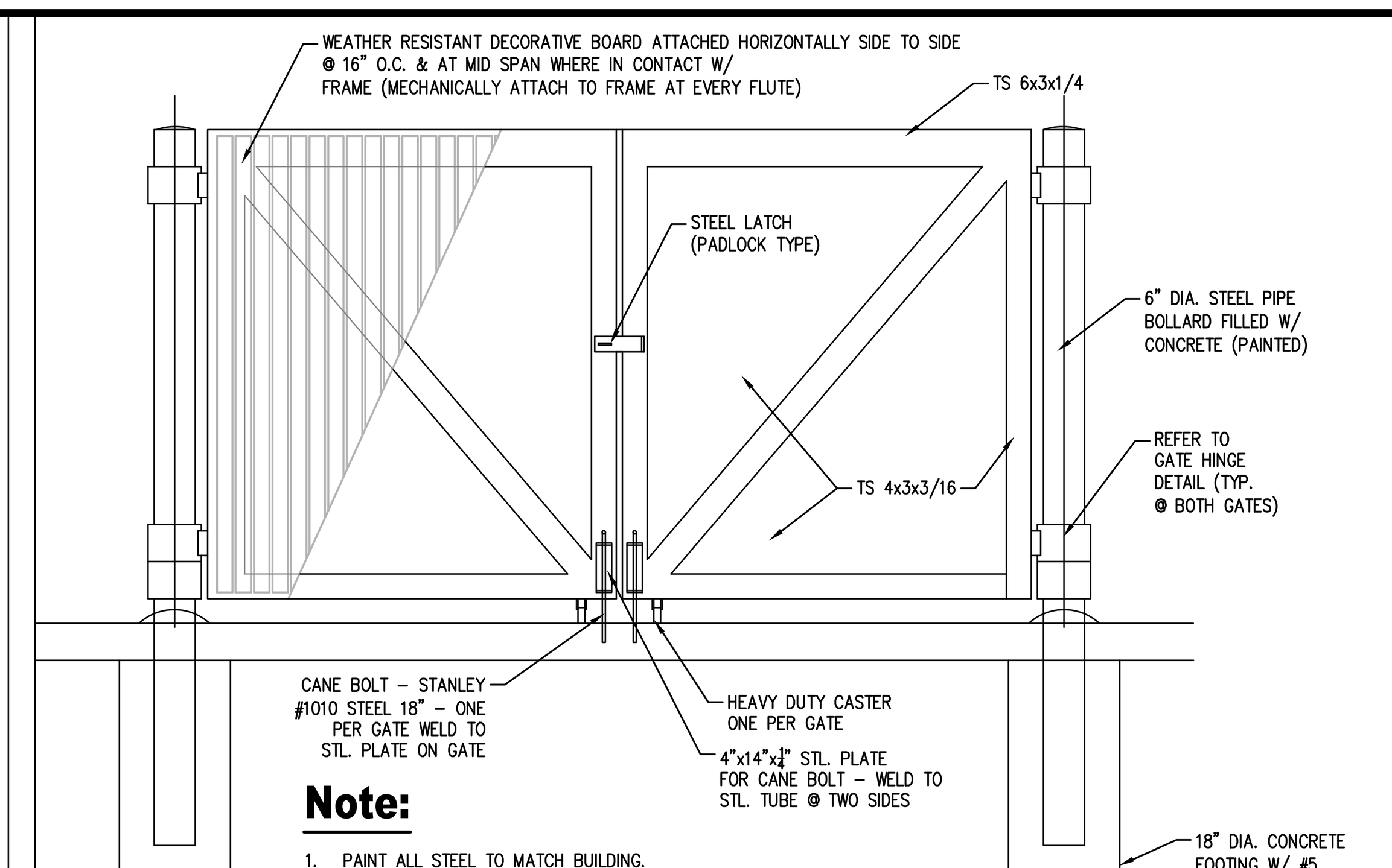
Typical Sanitary Sewer Lateral Connection

NOT TO SCALE



Service Lateral Detail

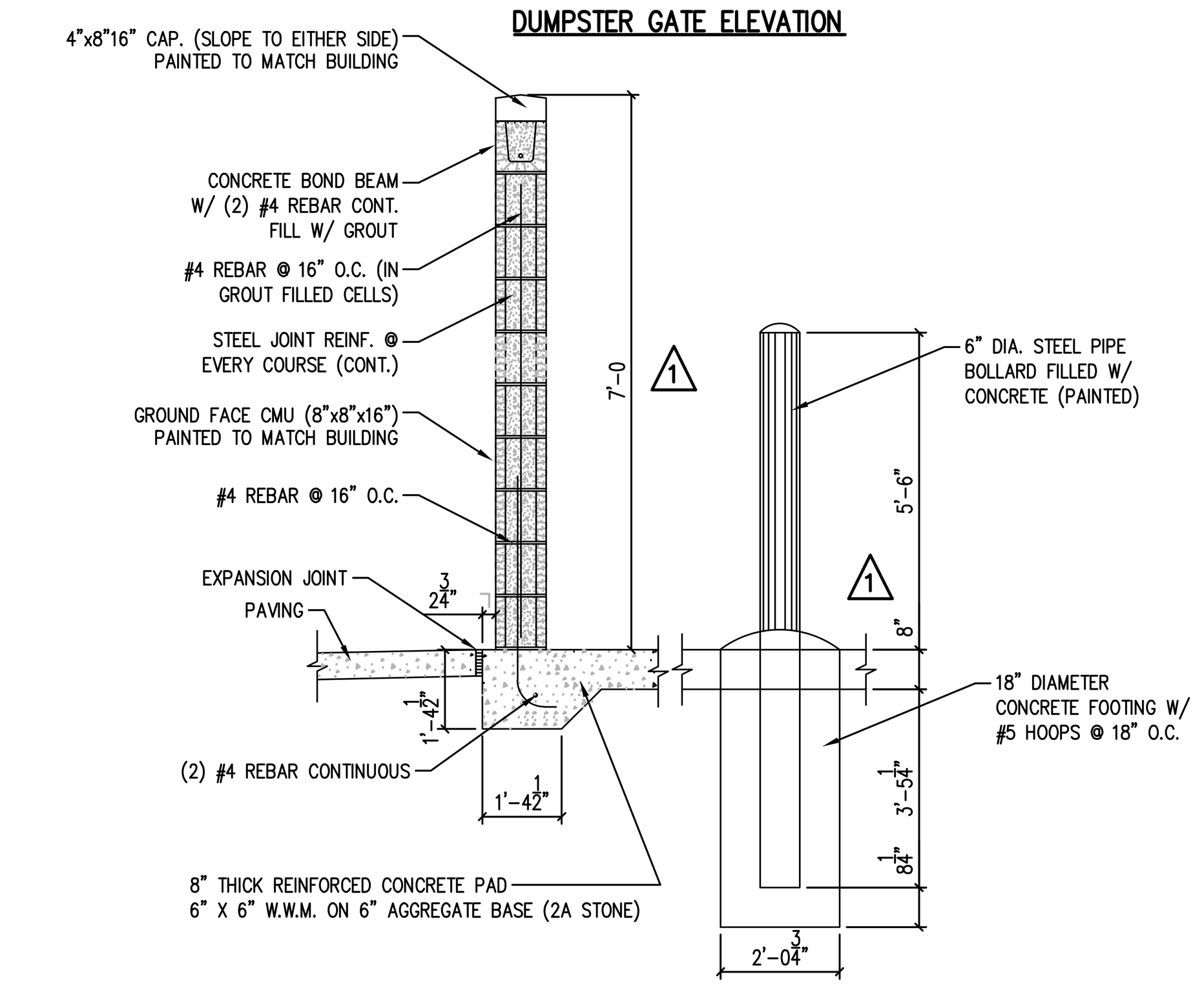
NOT TO SCALE



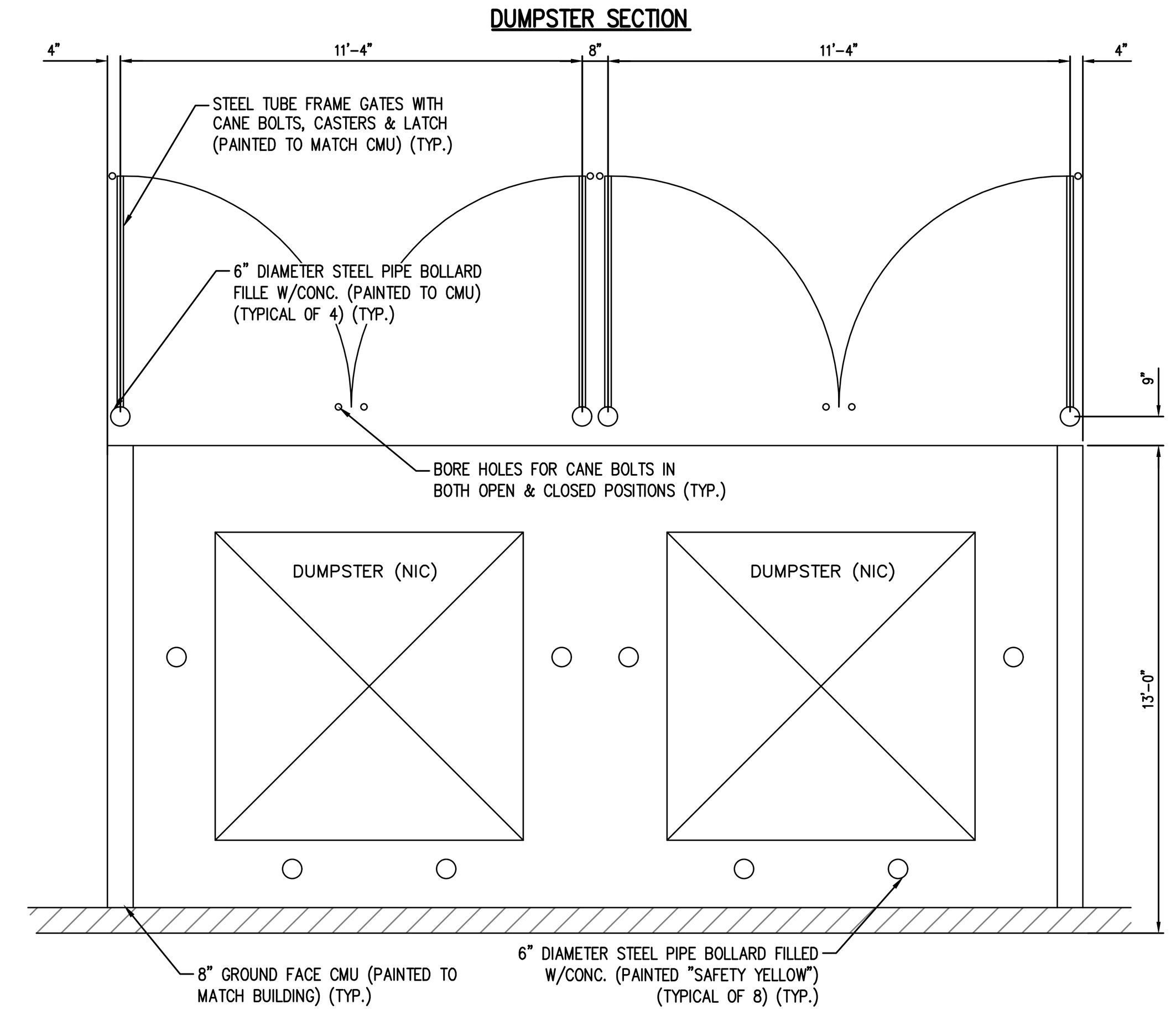
Note:

1. PAINT ALL STEEL TO MATCH BUILDING.
2. PAINT GATE TO MATCH BUILDING SIDING. CONTRACTOR TO COORDINATE COLOR WITH PROJECT ARCHITECT.

DUMPSTER GATE ELEVATION



DUMPSTER SECTION



PLAN VIEW

Notes:

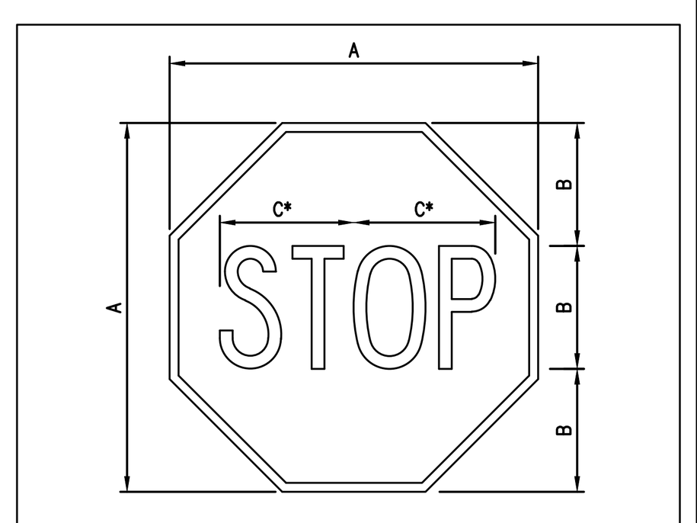
1. GATE TO PROVIDE 100% SCREENING.
2. WALL SECTIONS AND GATES SHALL BE HIGHER THAN ANYTHING STORED WITHIN THEIR CONFINES.

Dumpster Enclosure & Gate Details

NOT TO SCALE

Note:

THE DETAIL SHOWN IS FOR A TWO BIN DUMPSTER ENCLOSURE. SHOULD THE ACTUAL ENCLOSURE NEED TO HOLD THREE DUMPSTERS, THE SIZE SHALL INCREASE ACCORDINGLY TO ACCOMMODATE THE THREE DUMPSTERS. PRIOR TO CONSTRUCTION, SPECIFIC DETAILS SHALL BE PROVIDED FOR REVIEW.

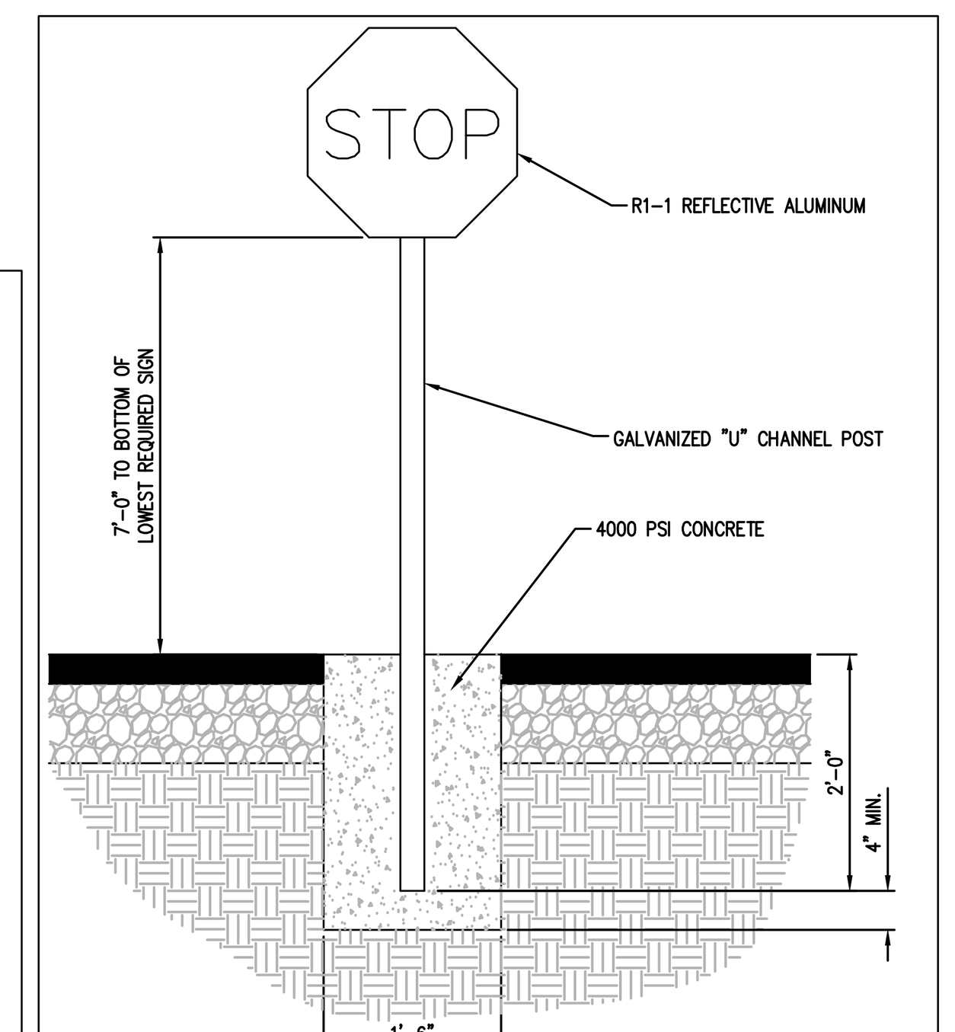


COLOR: LEGEND AND BORDER WHITE(REFLECTORIZED)
BACKGROUND RED(REFLECTORIZED)

SIGN SIZE	DIMENSIONS A	B	C	SER-IES	BOR-DER	BLANK STD.
24X24	30	10	12.5	C	3/4	BI-30

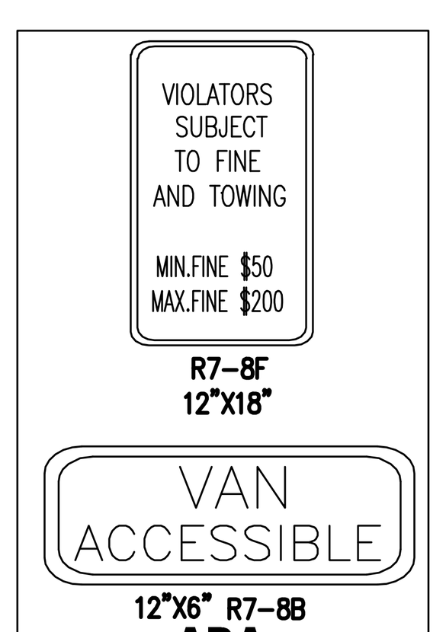
SIGNAGE	
SERIES	MESSAGE
R1-1	STOP SIGN

(HIGH INTENSITY SIGNS REQUIRED)



Stop Sign Detail

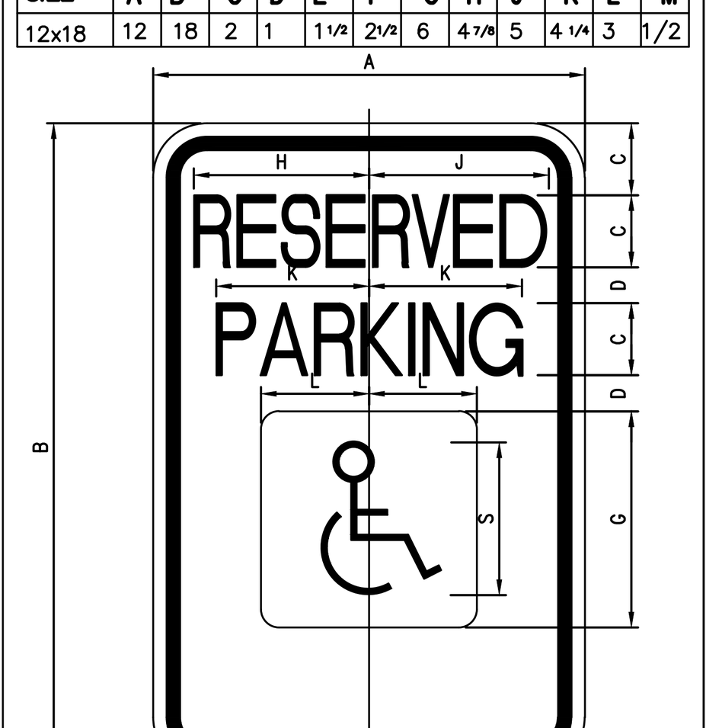
NOT TO SCALE



ADA Parking Signs

NOT TO SCALE

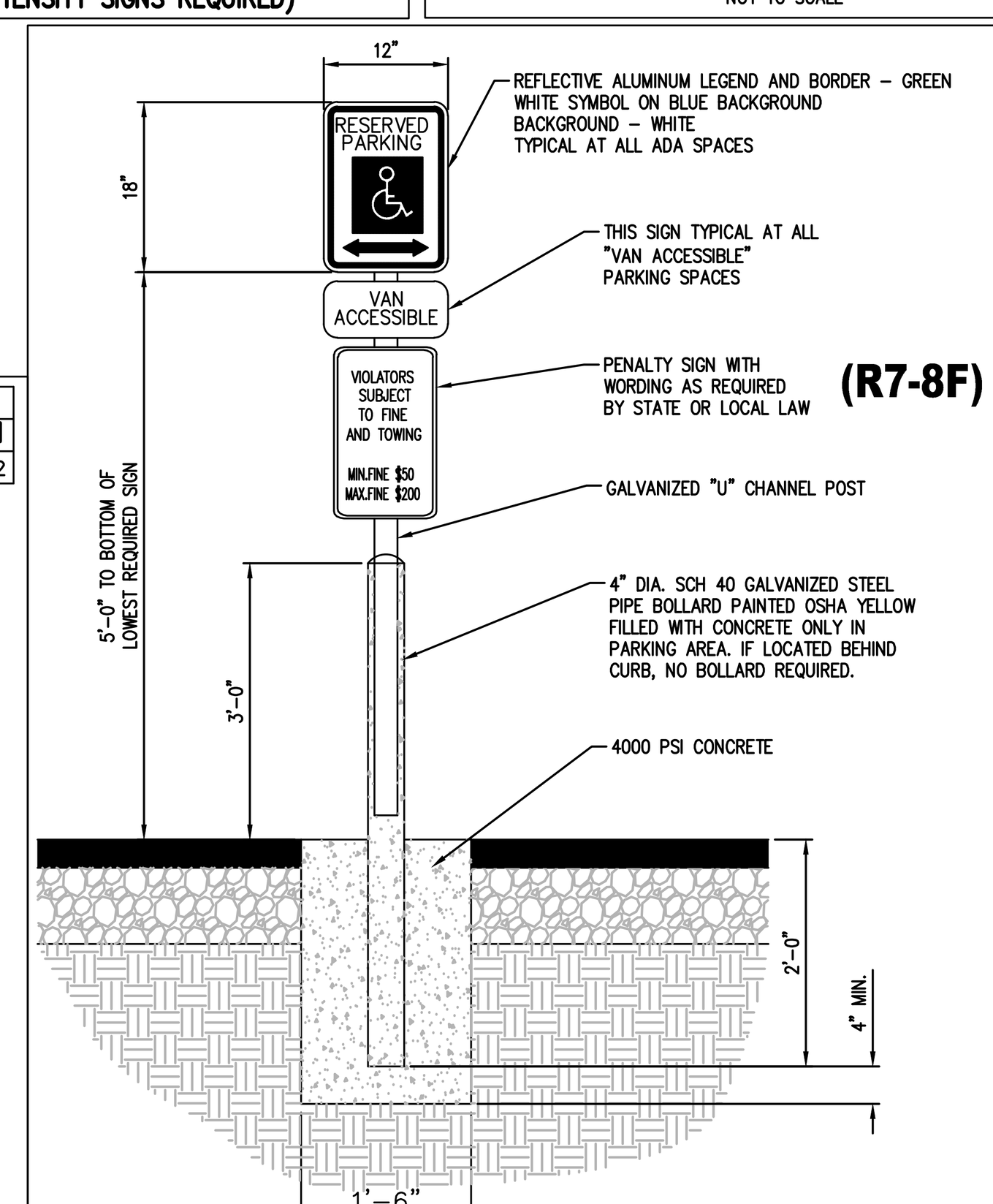
SIGN SIZE	DIMENSIONS A	B	C	D	E	F	G	H	J	K	L	M
12x18	12	18	2	1	1 1/2	2 1/2	6	4 7/8	5	4 1/4	3	1/2



COLOR: LEGEND AND BORDER GREEN (NON-REFLECTORIZED)
BACKGROUND WHITE (NON-REFLECTORIZED)
SYMBOL WHITE (NON-REFLECTORIZED)
BACKGROUND BLUE (NON-REFLECTORIZED)

" Revised Parking" Sign
PennDOT R7-8

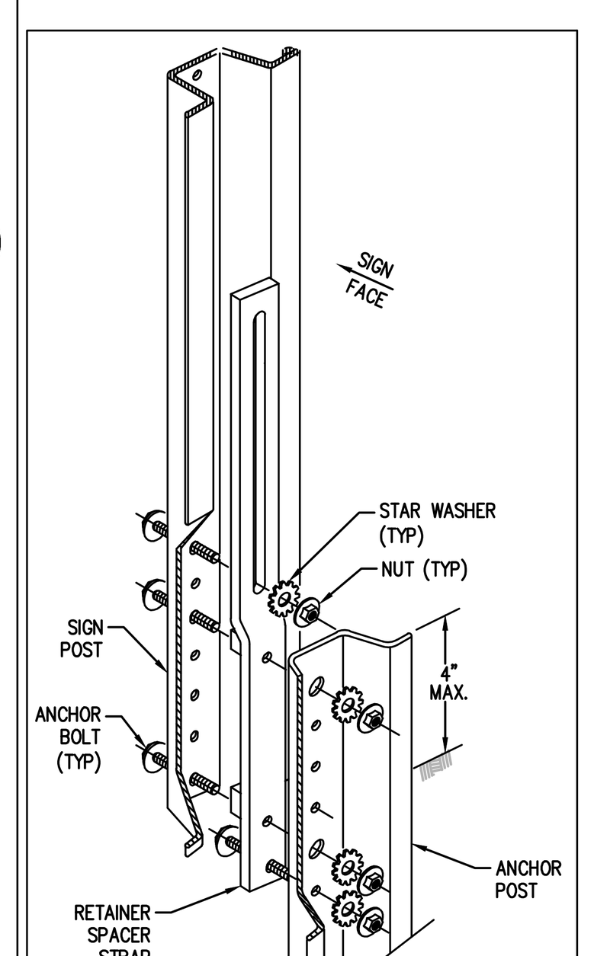
NOT TO SCALE



ADA Parking Sign

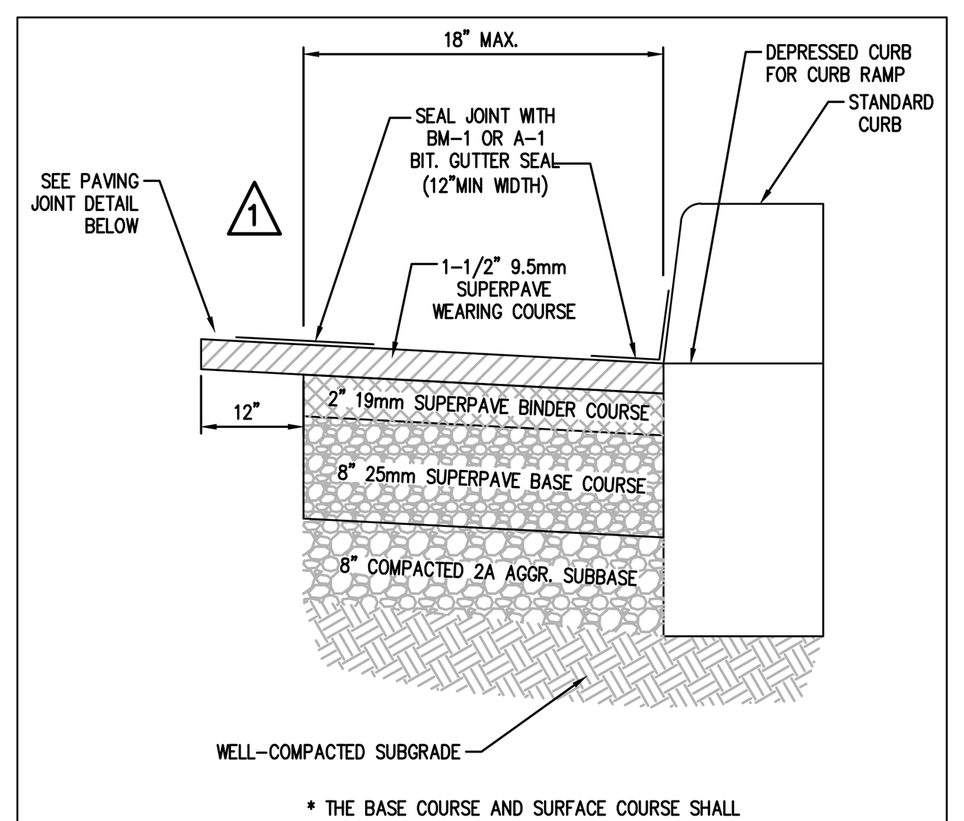
NOT TO SCALE

NOTE:
ONE AT EACH ADA SPACE. WHERE ADA SPACES FACE EACH OTHER WITHOUT WALKWAY, THERE SHALL BE ONE POST WITH SIGNS MOUNTED BOTH SIDES.



Break Away Sign Post Installation Detail

NOT TO SCALE

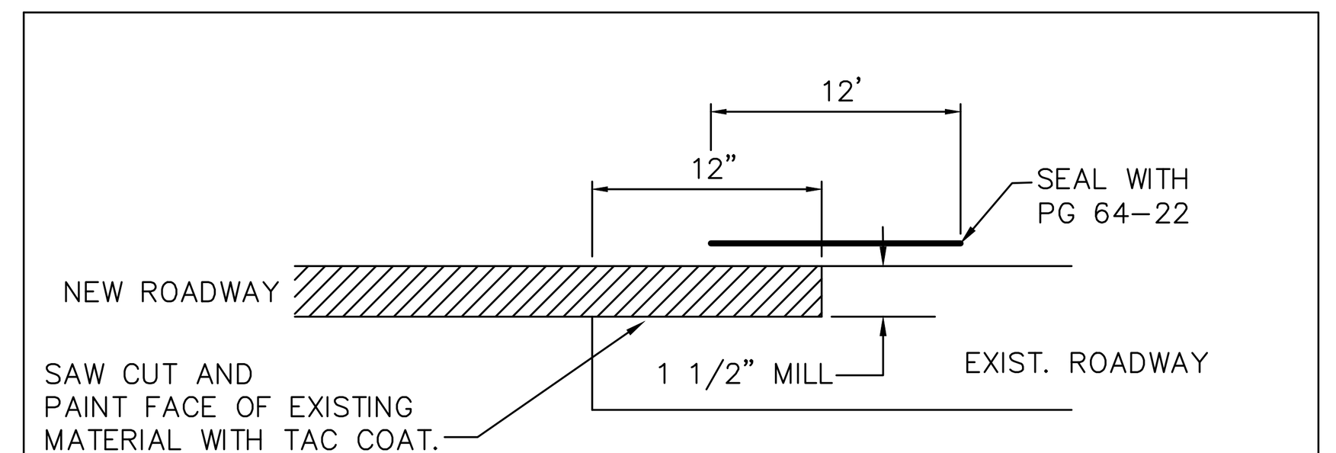


* THE BASE COURSE AND SURFACE COURSE SHALL MATCH EXISTING DEPTHS OF PAVING OF SPILLMAN DRIVE.

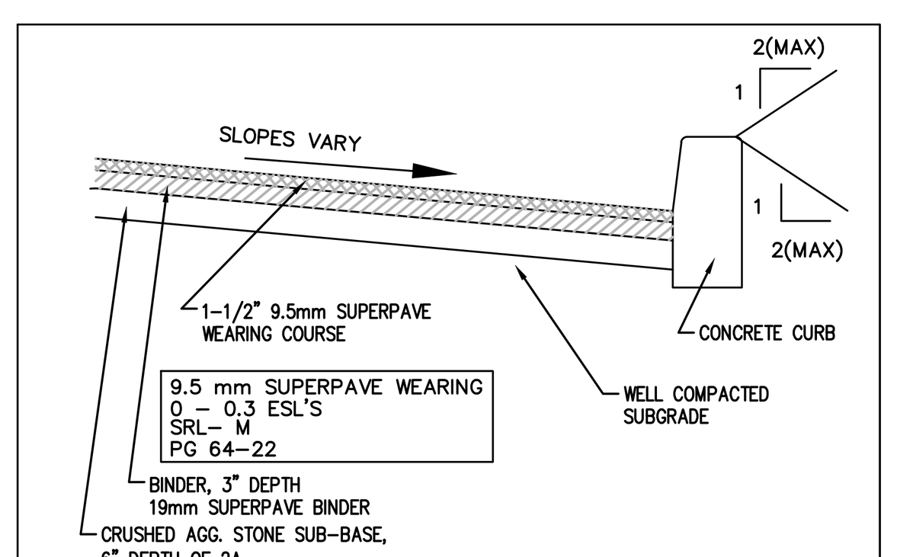
Pavement Restoration For Curb Replacement

NOT TO SCALE

(WITHIN CITY R.O.W.)

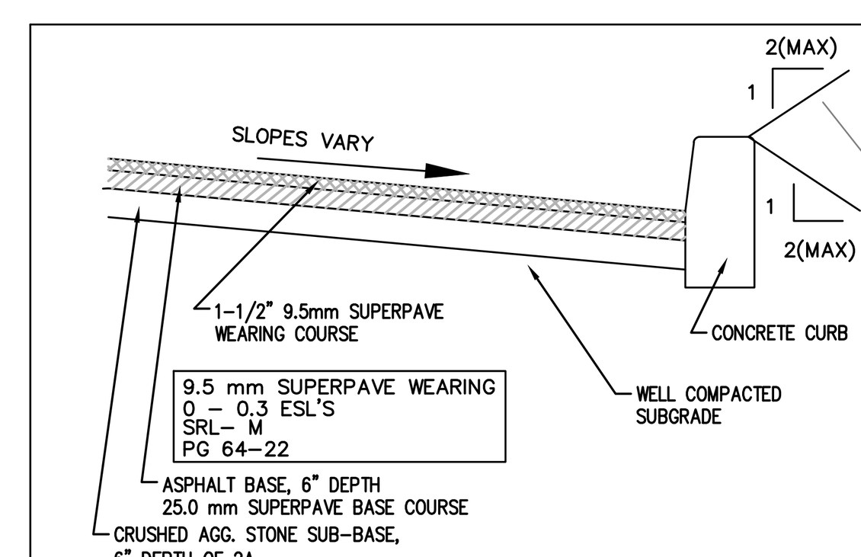


PAVING JOINT
(TIE INTO EXISTING PAVEMENT)
NO SCALE



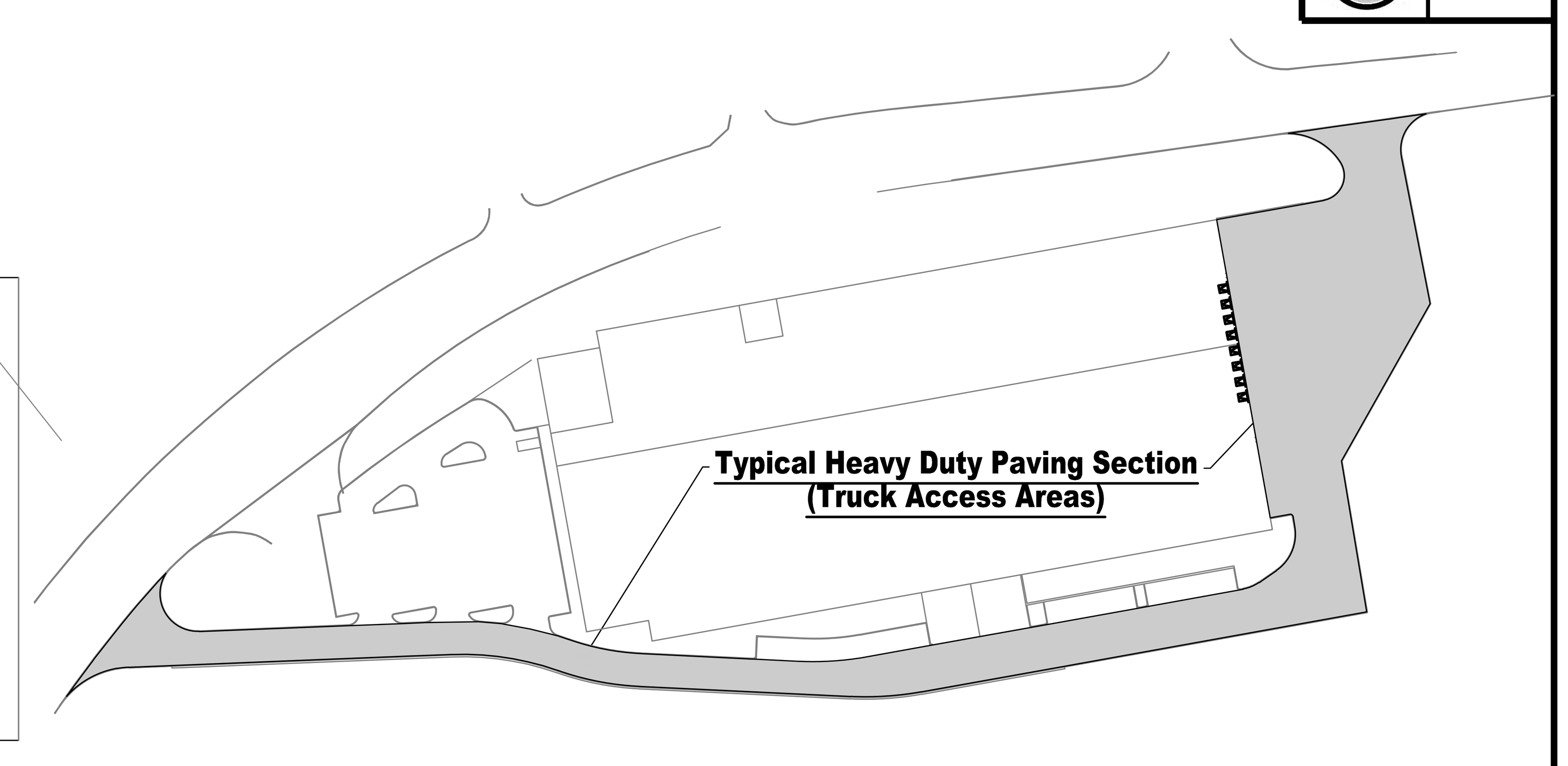
Typical Light Duty Paving Section (Parking Lots)

(WITH CURB)
NOT TO SCALE



Typical Heavy Duty Paving Section (Truck Access Areas)

(WITH CURB)
NOT TO SCALE



PRELIMINARY/FINAL LAND DEVELOPMENT

PLAN TITLE: CONSTRUCTION DETAIL PLAN

PROJECT TITLE: LVIP VII – LOT 63
2680 COMMERCE CENTER BLVD.

NO.	REVISIONS	DATE
1	PER CITY COMMENT LETTER	6/06/22

DRAWN BY: DM
CHECKED BY: AB
SCALE: AS NOTED
DATE: 3/01/22
PROJECT NO. 4920
SHEET NO. 13 OF 14

SEAL: COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
ANDREW THOMAS BOHL
PE062856

CITY OF BETHLEHEM
NORTHAMPTON COUNTY
PENNSYLVANIA

HanoverEngineering
Bethlehem Office
252 Brodhead Road, Suite 100
Bethlehem, PA 18017-8944
P:610.691.5644
F:610.691.6968
HanoverEng.com

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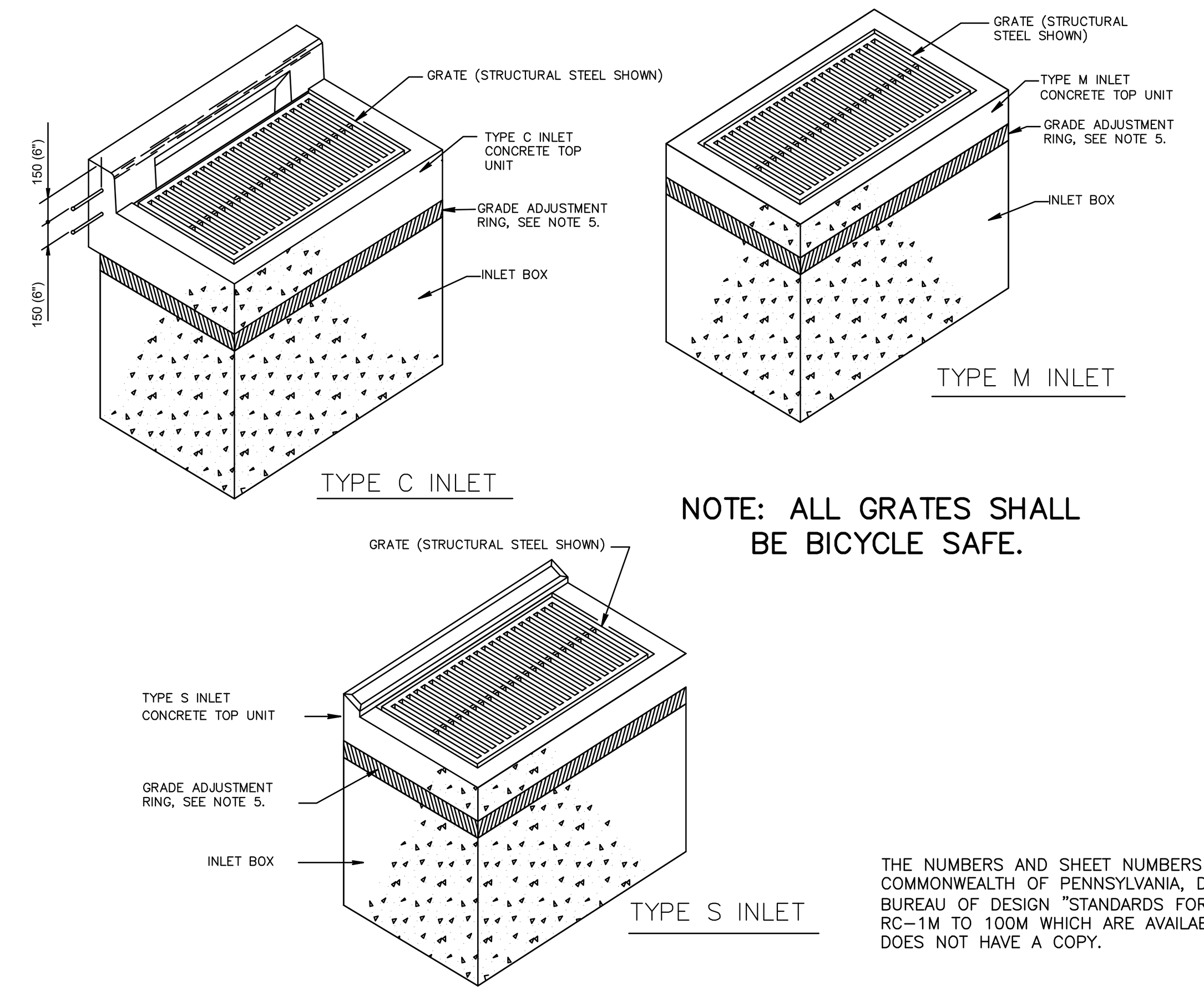


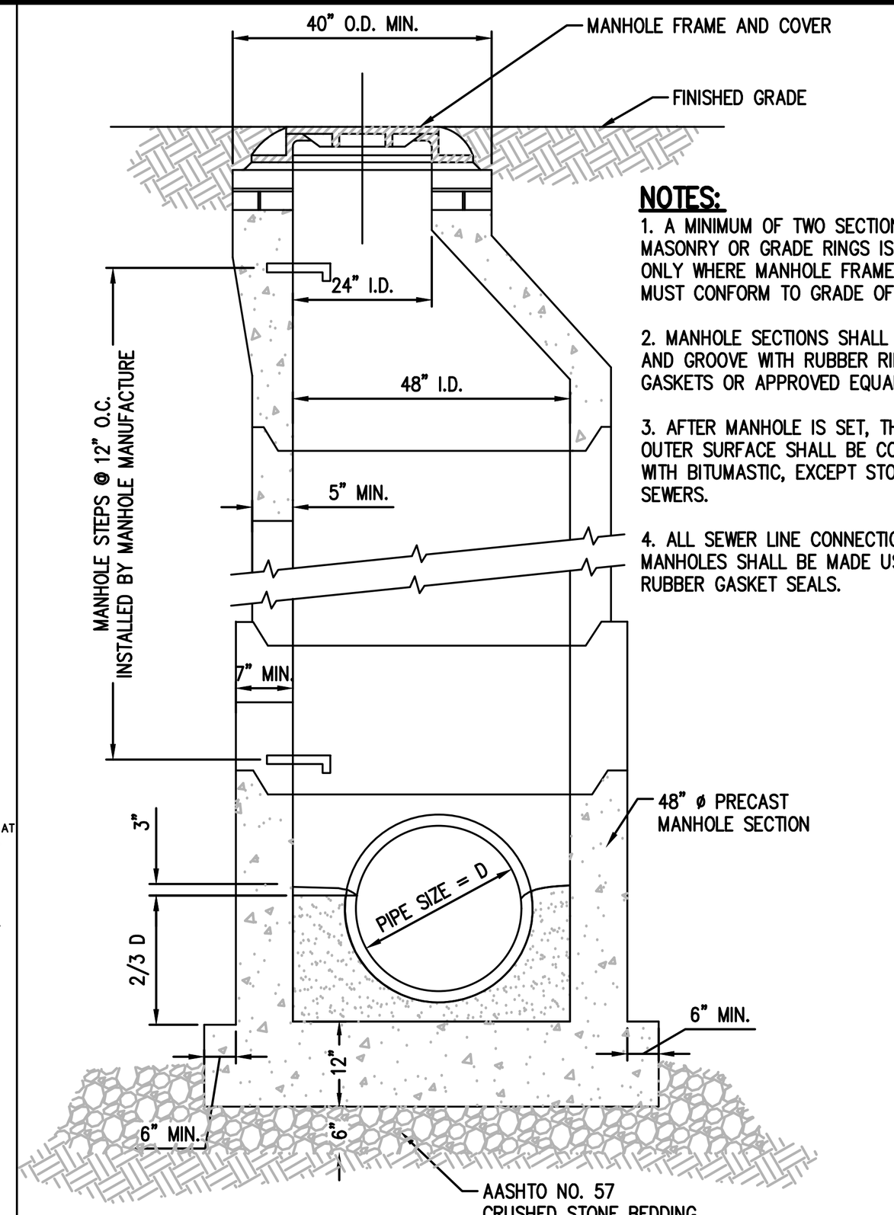
NOTE: ALL GRATES SHALL BE BICYCLE SAFE.

NOTES

1. CONSTRUCTION REQUIREMENTS:
   - A. CONSTRUCT IN ACCORDANCE WITH PUBLICATION 408, SECTIONS 605, 606 AND 714; AND AS MODIFIED HEREIN.
   - B. MINIMUM CONCRETE CLASS: CAST-IN-PLACE CLASS A; PRECAST CLASS AA
   - C. PROVIDE STEEL REINFORCEMENT IN ACCORDANCE WITH PUBLICATION 408, SECTION 709. PROVIDE MINIMUM YIELD STRENGTH OF 400 MPa (60,000 PSI).
   - D. CLEAR COVER FOR STEEL: WALLS: CAST-IN PLACE 50 (2"), PRECAST 40 (1½"); FOOTINGS: CAST-IN PLACE 60 (2½") TOP BARS, 80 (3") BOTTOM BARS, 50 (2") SIDE COVER; PRECAST 50 (2") TOP BARS, 40 (1½") BOTTOM BARS, 40 (1½") SIDE COVER; SLABS: CAST-IN PLACE 50 (2") TOP & BOTTOM BARS
2. THIS SHEET DEPICTS THE VARIOUS COMPONENTS REQUIRED FOR COMPLETE INLET ASSEMBLIES. FOR INDIVIDUAL COMPONENTS AND OTHER SPECIAL DETAILS, SEE THE FOLLOWING:
   SHEET 2 OF 10 FOR CONCRETE TOP UNITS.
   SHEET 3, 4 & 5 OF 10 FOR GRATES AND GRADE ADJUSTMENT RINGS.
   SHEET 6 OF 10 FOR FRAMES.
   SHEET 7 OF 10 FOR STANDARD INLET BOXES (CAST-IN-PLACE).
   SHEET 8 OF 10 FOR STANDARD INLET BOXES (PRECAST).
   SHEET 9 OF 10 FOR MODIFIED INLET BOXES (CAST-IN-PLACE AND PRECAST).
   SHEET 10 OF 10 FOR TYPE D-H INLET.
3. EACH TYPE OF INLET SHOWN IS SUITED FOR A PARTICULAR SITUATION AS FOLLOWS:
   TYPE C INLET IS DESIGNATED FOR INSTALLATION WITH NON-MOUNTABLE CURBS.
   TYPE M INLET IS DESIGNATED FOR INSTALLATION IN MEDIAN AREAS AND MOUNTABLE CURBS.
   TYPE S INLET IS DESIGNATED FOR INSTALLATION IN SHOULDER SWALE AREAS.
4. THE SELECTION OF COMPONENTS TO ACHIEVE A SPECIFIED INLET ASSEMBLY IS THE CONTRACTOR'S RESPONSIBILITY.
5. USE PRECAST CONCRETE ADJUSTMENT RINGS WHEN REQUIRED. (REHABILITATION PROJECTS)
6. FOR WALL REINFORCEMENT, BOTH DIRECTIONS, USE 250 (10") /m² MIN EACH WAY, EACH FACE 152 (6") MAX. SPACING.
7. FOR FOOTING REINFORCEMENT, TOP AND BOTTOM, USE #13 (#4) BARS AT 300 (12") CENTERS EACH WAY OR 420 (17") /m WWF 152 (6") MAX. SPACING.
8. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. U.S. CUSTOMARY UNITS IN () PARENTHESIS.
9. PROVIDE WEEP HOLES ON ALL INLET BOXES LOCATED IN PAVED AREAS.
10. PIPES MAY BE CONNECTED TO DRAINAGE STRUCTURES (PRECAST INLETS, ETC.) WITH MORTAR OR WATERTIGHT RUBBER FLEXIBLE CONNECTORS.

NOTE: EITHER ALL METRIC OR ALL ENGLISH VALUES MUST BE USED ON PLANS. METRIC AND ENGLISH VALUES SHOWN MAY NOT BE MIXED.

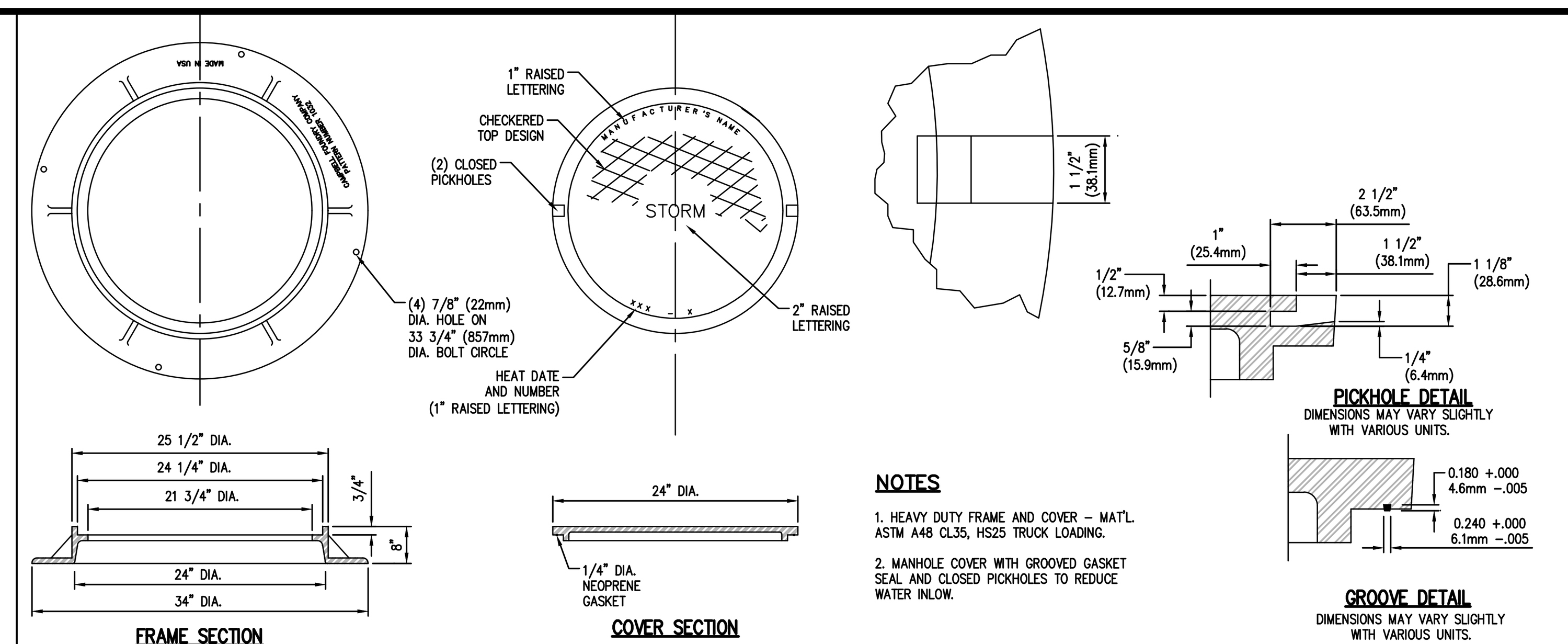
THE NUMBERS AND SHEET NUMBERS LISTED ABOVE REFER TO THE COMMONWEALTH OF PENNSYLVANIA, DEPARTMENT OF TRANSPORTATION, BUREAU OF DESIGN "STANDARDS FOR ROADWAY CONSTRCUTION"-SERIES RC-1M TO 100M WHICH ARE AVAILABLE ON-LINE IF THE CONTRACTOR DOES NOT HAVE A COPY.



NOTES:
1. A MINIMUM OF TWO SECTIONS OF BRICK MASONRY OR GRADE RINGS IS REQUIRED ONLY WHERE MANHOLE FRAME AND COVER MUST CONFORM TO GRADE OF STREET.
2. MANHOLE SECTIONS SHALL BE TONGUE AND GROOVE WITH RUBBER RING GASKETS OR APPROVED EQUAL.
3. AFTER MANHOLE IS SET, THE ENTIRE OUTER SURFACE SHALL BE COATED WITH BITUMASTIC, EXCEPT STORM SEWERS.
4. ALL SEWER LINE CONNECTIONS TO MANHOLES SHALL BE MADE USING RUBBER GASKET SEALS.

Standard Storm Manhole

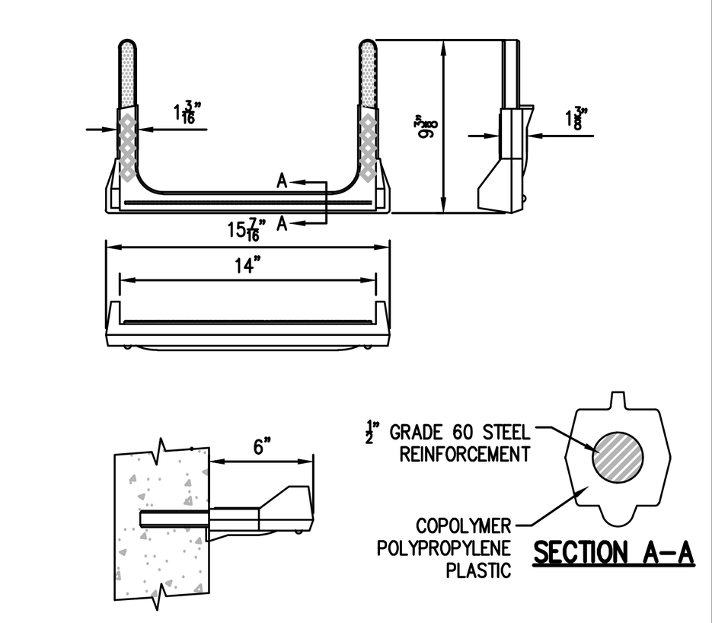
NOT TO SCALE



NOTES
1. HEAVY DUTY FRAME AND COVER – MAT'L. ASTM A48 CL35, HS25 TRUCK LOADING.
2. MANHOLE COVER WITH GROOVED GASKET SEAL AND CLOSED PICKHOLES TO REDUCE WATER INLOW.

Manhole Frame and Cover Detail

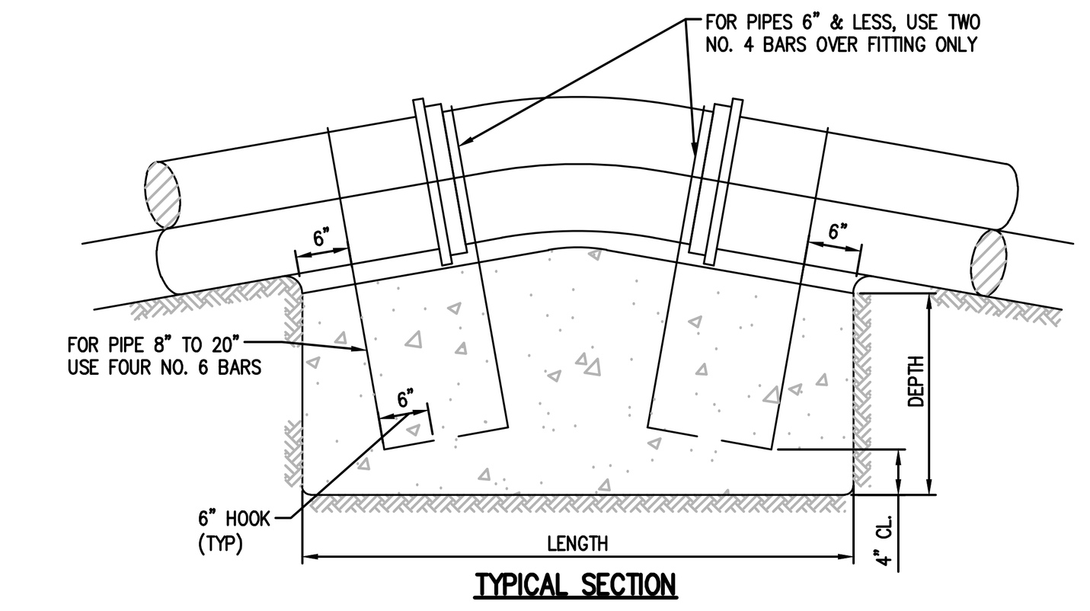
NOT TO SCALE



MANUFACTURED BY M.A. INDUSTRIES INC.

Polypropylene Manhole Step

NOT TO SCALE



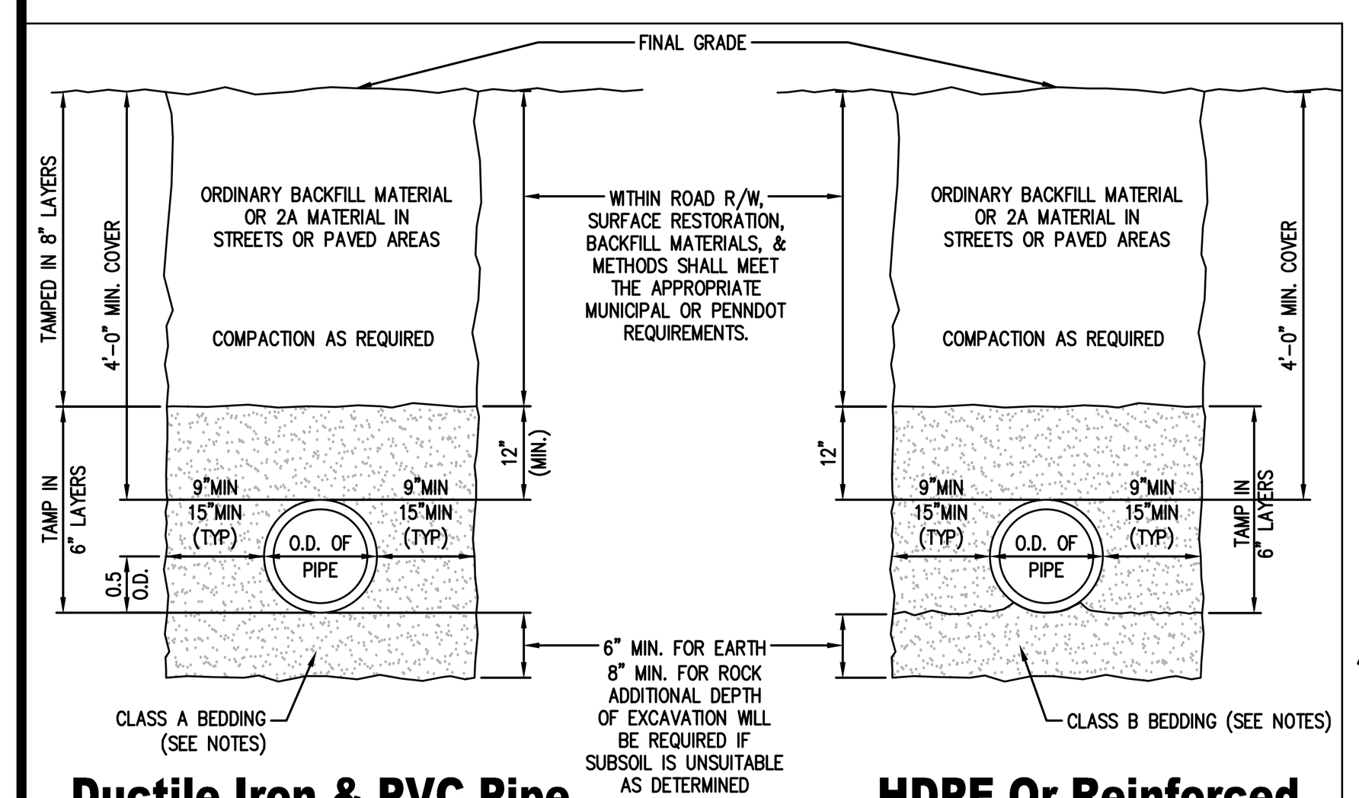
PIPE SIZES (inches)	DIMENSIONS OF CONCRETE BLOCKING								
	LENGTH			WIDTH			DEPTH		
	11¼°	22½°	45°	11¼°	22½°	45°	11¼°	22½°	45°
4 & SMALLER	2'	4'	4'	1.5'	3'	3'	1'	2'	3'
6 & 8	3'	4'	6'	3'	3'	3'	2'	3'	4'
10 & 12	4.5'	6'	8'	3'	3'	4'	3'	4.5'	5'
14 & 16	6'	8'	11'	3.5'	3.5'	5'	3.5'	5'	5'
18 & 20	7'	9'	13'	4'	5'	5.5'	4'	5'	6'

Notes:
1. NO COUPLING OR JOINTS SHALL BE COVERED WITH CONCRETE.
2. REINFORCING BAR STRAPS TO BE SHAPED TO PIPE CURVATURE.
3. ALL EXPOSED STEEL TO BE PAINTED WITH TWO COATS ASPHALTIC PAINT.

Thrust Blocking - Vertical Thrusts

NOT TO SCALE

VERTICAL THRUSTS UPWARD UP TO 150 PSI WORKING PRESSURE



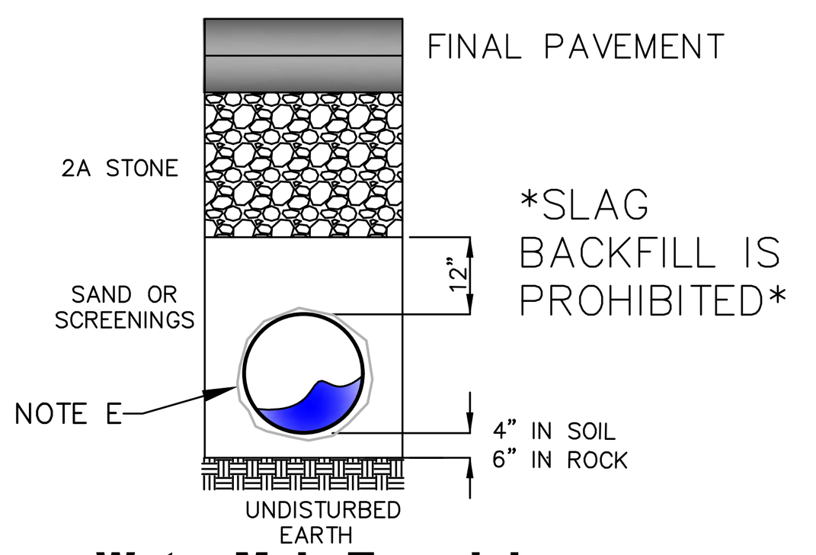
Ductile Iron & PVC Pipe

HDPE Or Reinforced Concrete Pipe

Typical Trench Details

NOT TO SCALE

Notes:
1. ALL BACKFILL MATERIAL IS SUBJECT TO CITY APPROVAL OR UGI APPROVAL FOR GAS MAIN.
2. CLASS A BEDDING: APPROVED SCREENINGS TO 12" ABOVE PIPE.
3. CLASS B BEDDING: FINE AGGREGATE
4. SELECT BACKFILL: CLEAN DRY EARTH WITH A MAXIMUM STONE SIZE 3-INCHES.
5. ORDINARY BACKFILL: CLEAN DRY EARTH WITH A MAXIMUM STONE SIZE 6-INCHES.
6. SLAG MATERIAL IS PERMITTED ABOVE THE 12 INCHES OF INTIAL COVER MATERIAL ABOVE THE PIPE.
7. HYDRO HAMMERS CAN BE USED AT DISTANCES GREATER THAN 3' ABOVE THE TOP OF THE PIPE IF THE SOIL DENSITY HAS BEEN PREVIOUSLY COMPACTED TO A MINIMUM 95% STANDARD PROCTOR.
8. PVC PIPE TO BE SDR 35 FOR PIPE RUNS LESS THEN 15' DEEP. FOR SANITARY SEWER RUNS GREATER THEN 15' IN DEPTH, SDR 26 SHALL BE USED.

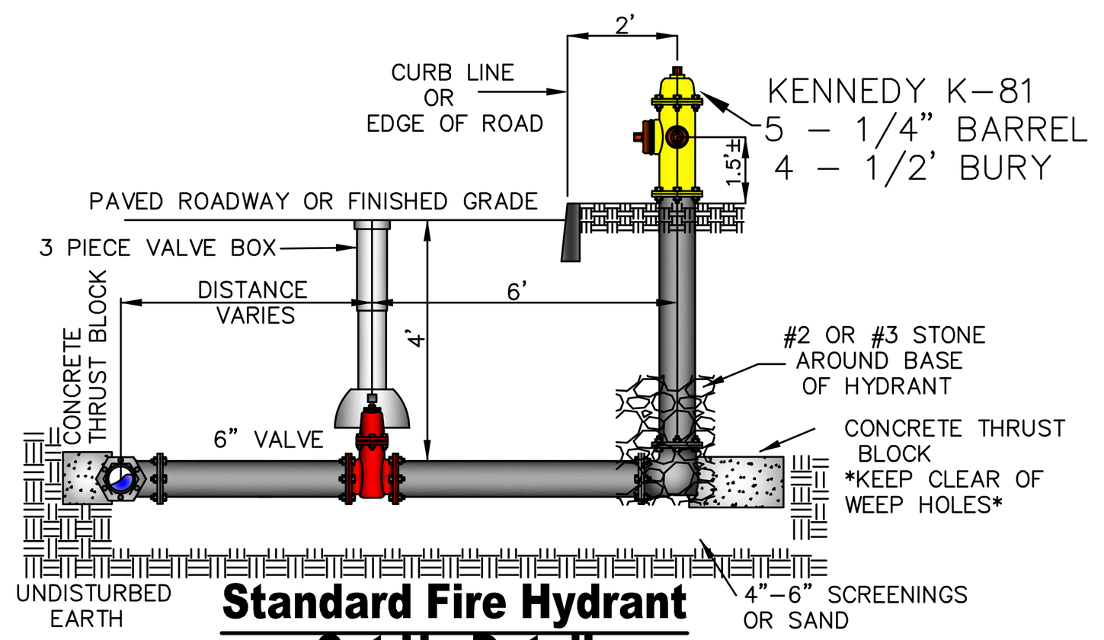


SLAG BACKFILL IS PROHIBITED

Water Main Trench in Paved Area Detail

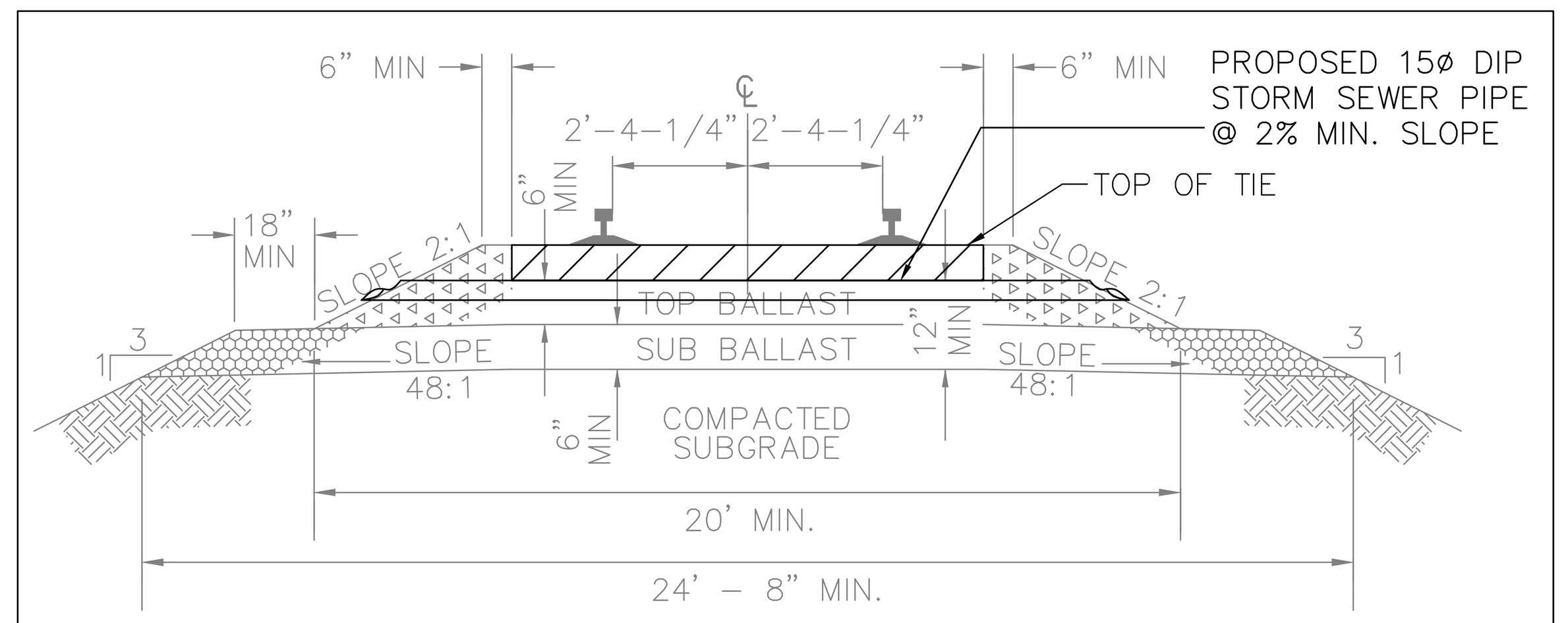
NOT TO SCALE

⚠4 NOTE E:
THE PROPOSED FIRE AND DOMESTIC WATER SERVICES SHALL BE ENCASED WITH A POLYETHYLENE ENCASEMENT IN ACCORDANCE WITH AWWA C105/A21.5-82, SECTION 5.4.



Standard Fire Hydrant Set-Up Detail

NOT TO SCALE



TYPICAL SECTION

NOTES: DEPTH OF BALLAST TO BE USED WILL DEPEND ON SUBGRADE STRENGTH, TRAFFIC DENSITY, AND WHEEL LOADS. MINIMUM DEPTH OF BALLAST/SUBBALLAST IS 12 INCHES BELOW BOTTOM OF TIE. THICKNESS OF BALLAST AND SUBBALLAST MAY BE VARIED TO OBTAIN BEST STUCTURAL AND ECONOMIC DESIGN WHILE MEETING MINIMUM THICKNESSS REQUIREMENTS.

DRAINAGE PIPE CROSS SECTION DETAIL

Type of Bearing Material and Allowable loads, psf	4" and less DEGREE BEND				6" and 8" DEGREE BEND				10" and 12" DEGREE BEND			
	11¼	22½	45	90	11¼	22½	45	90	11¼	22½	45	90
LOOSE SAND OR MEDIUM CLAY – 2,000	1.0	2.0	2.7	4.0	1.5	3.0	6.0	10.0	3.0	6.2	12.0	22.0
PACKED GRAVEL AND SAND – 4,000	1.0	1.0	1.5	2.0	1.0	1.5	3.0	5.0	1.5	3.1	6.0	11.0
ROCK – 10,000	1.0	1.0	1.0	1.0	1.0	1.0	1.2	2.0	1.0	1.3	2.4	4.4

BEARING AREA REQUIRED, SQUARE FEET

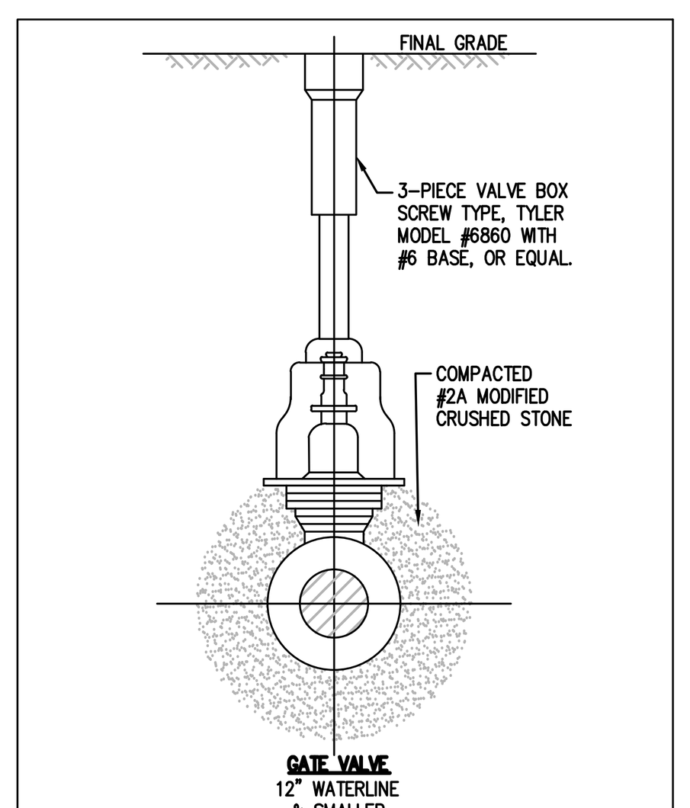
Type of Bearing Material and Allowable Loads	14" and 16" DEGREE BEND OR DEFLECTION				18" and 20" DEGREE BEND OR DEFLECTION			
	11¼	22½	45	90	11¼	22½	45	90
LOOSE SAND OR MEDIUM CLAY –2,000	6.0	12.0	22.5	40.0	9.5	19.0	37.0	67.0
PACKED GRAVEL AND SAND – 4,000	3.0	6.0	11.3	20.0	4.8	9.5	18.5	33.5
ROCK – 10,000	1.2	2.4	4.5	8.0	2.0	3.8	7.4	13.5

Notes:
THRUST BLOCKING FOR TEES SHALL HAVE THE SAME BEARING AREA AS 90° BENDS OF THE PIPE SIZE OF THE OUTLET. DEAD ENDS SHALL HAVE THE SAME BEARING AS 90° BENDS.

Thrust Blocking Schedule

NOT TO SCALE

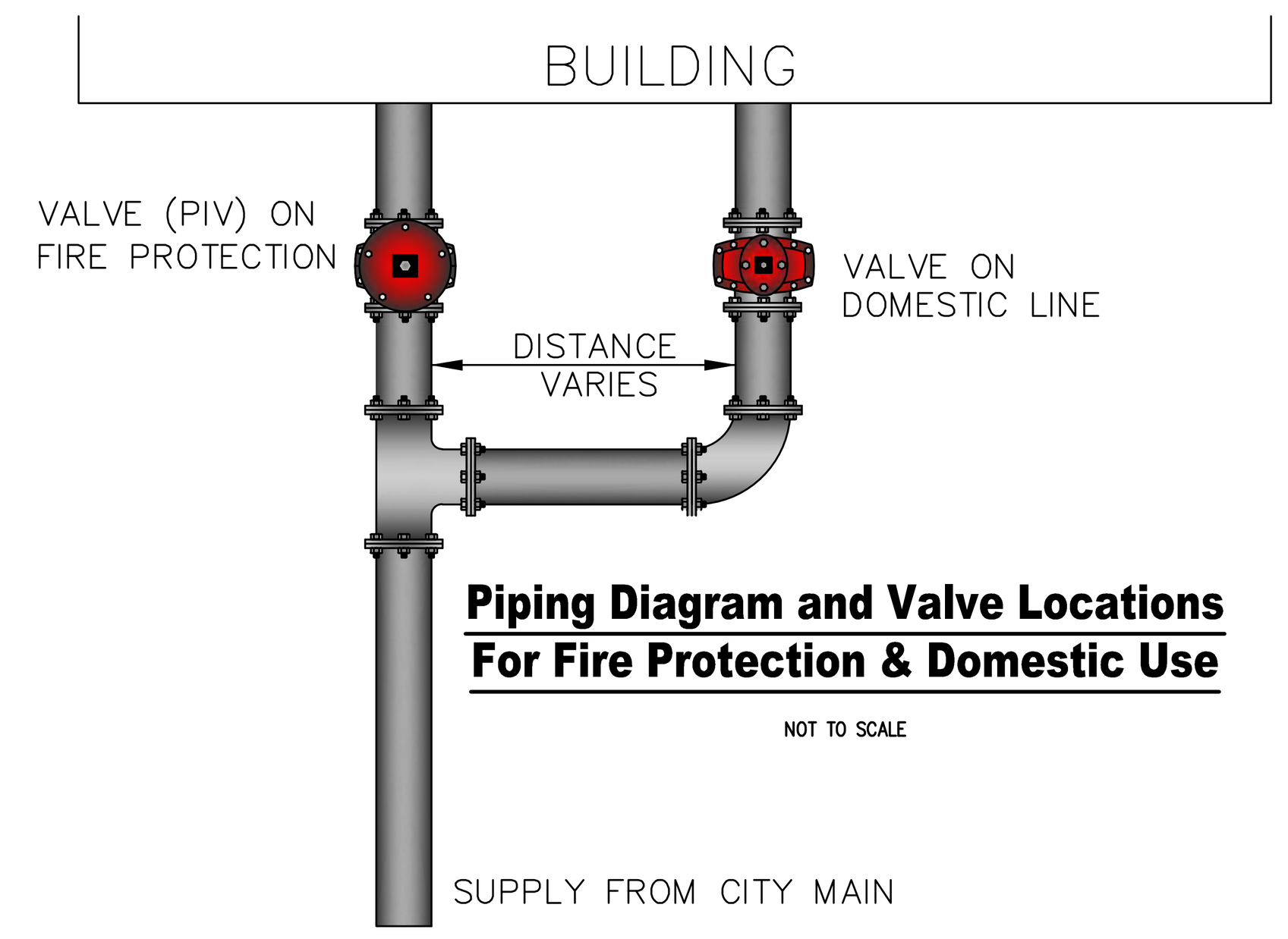
SCHEDULE OF DIMENSIONS UP TO 150 PSI WORKING PRESSURE



Gate Valve Detail

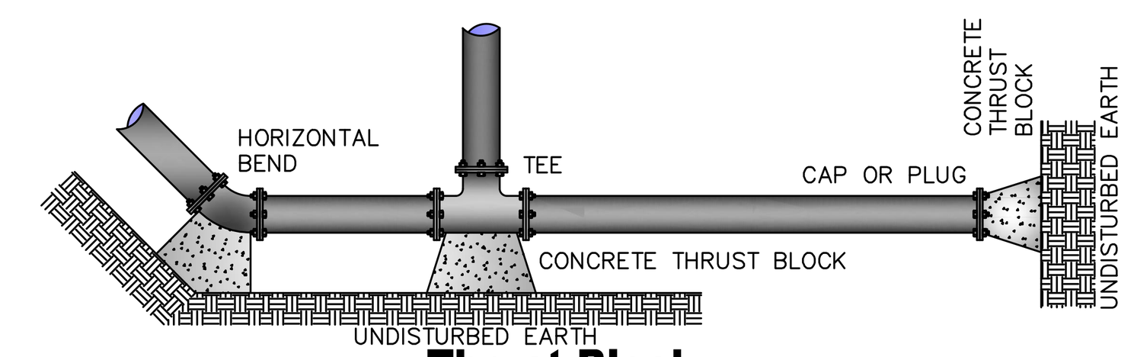
NOT TO SCALE

NOTE:
1. VALVES 8" OR SMALLER SHALL BE RODDED TO A FITTING WITH 2 ALL-THREAD RODS, 12" VALVES WITH 4 ALL-THREAD RODS.
2. ROD DIAMETER SHALL BE EQUAL TO THAT OF THE GLAND BOLTS. RODS SHALL BE GIVEN ONE COAT OF BITUMASTIC PAINT.



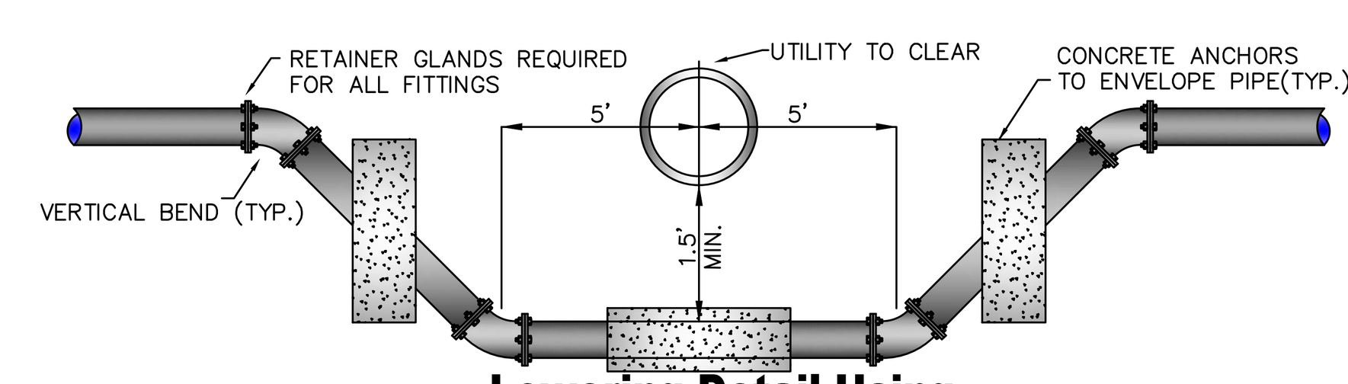
Piping Diagram and Valve Locations For Fire Protection & Domestic Use

NOT TO SCALE



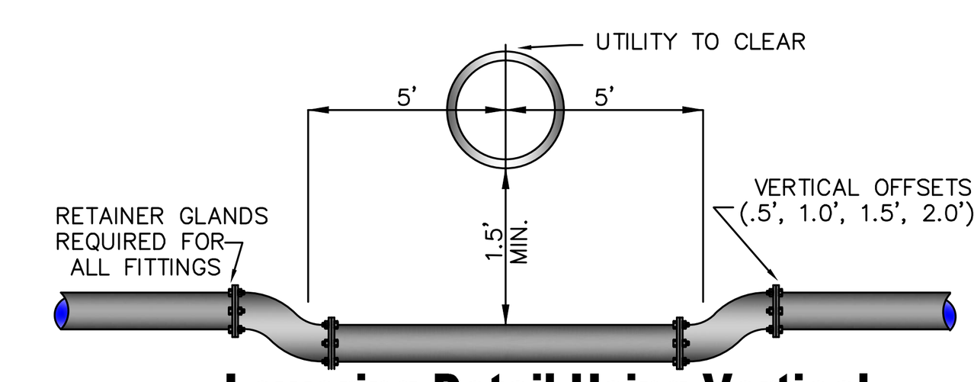
Thrust Block Detail Top View

NOT TO SCALE



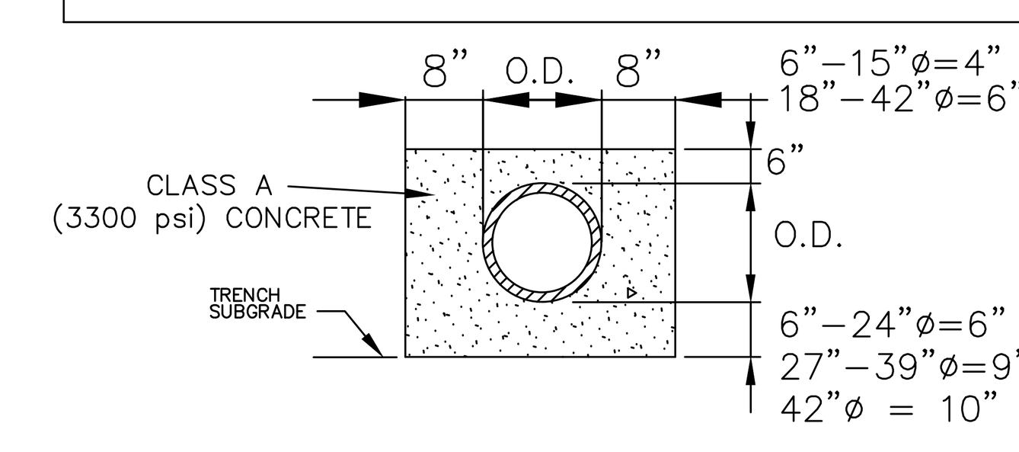
Lowering Detail Using Vertical Bends

NOT TO SCALE



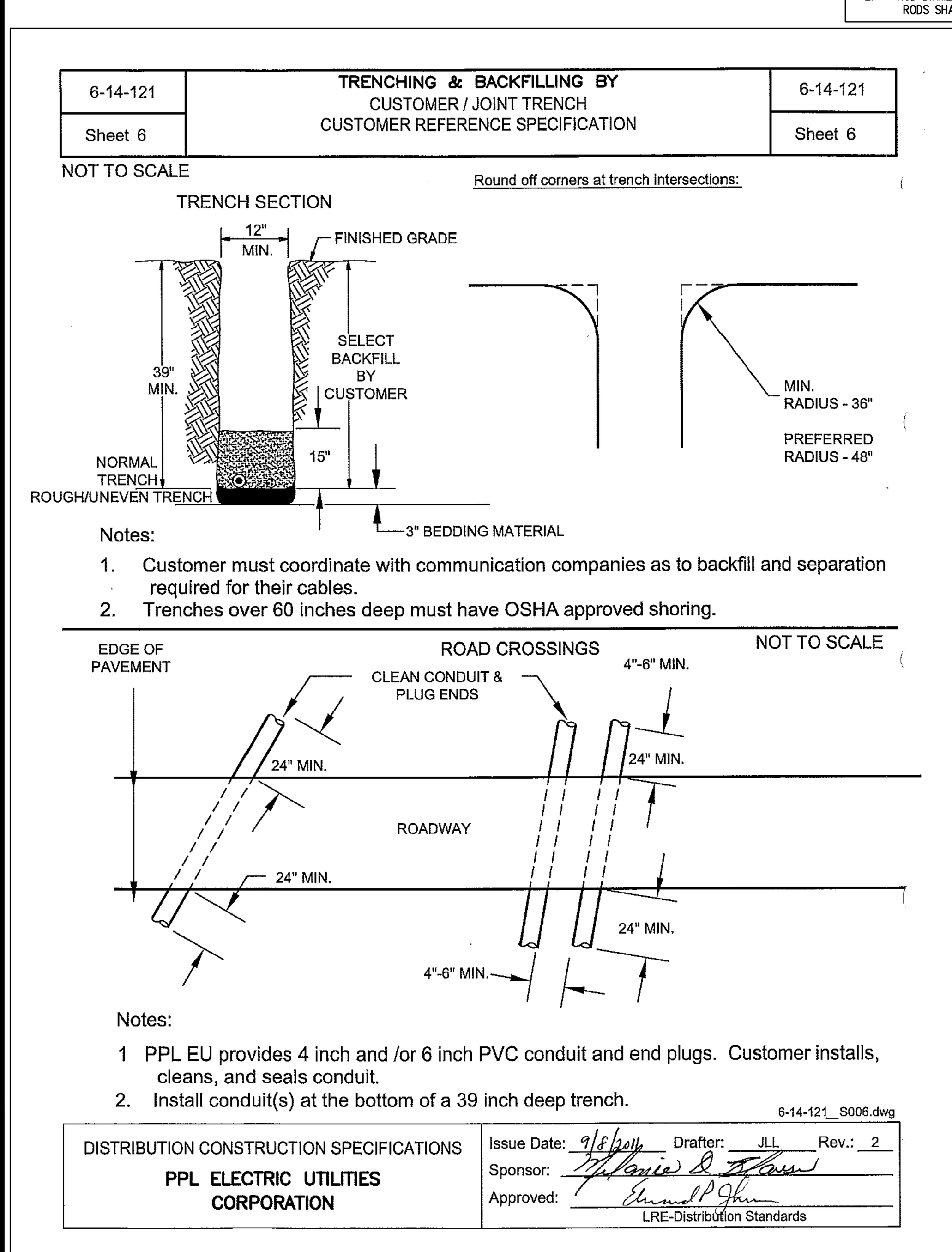
Lowering Detail Using Vertical Offsets No Thrust Blocks Needed

NOT TO SCALE



TYP. SEWER CONCRETE ENCASEMENT DETAIL

NO SCALE



6-14-121	TRENCHING & BACKFILLING BY CUSTOMER / JOINT TRENCH CUSTOMER REFERENCE SPECIFICATION	6-14-121
Sheet 6		Sheet 6

NOT TO SCALE

Round off corners at trench intersections:

TRENCH SECTION

Notes:
1. Customer must coordinate with communication companies as to backfill and separation required for their cables.
2. Trenches over 60 inches deep must have OSHA approved shoring.

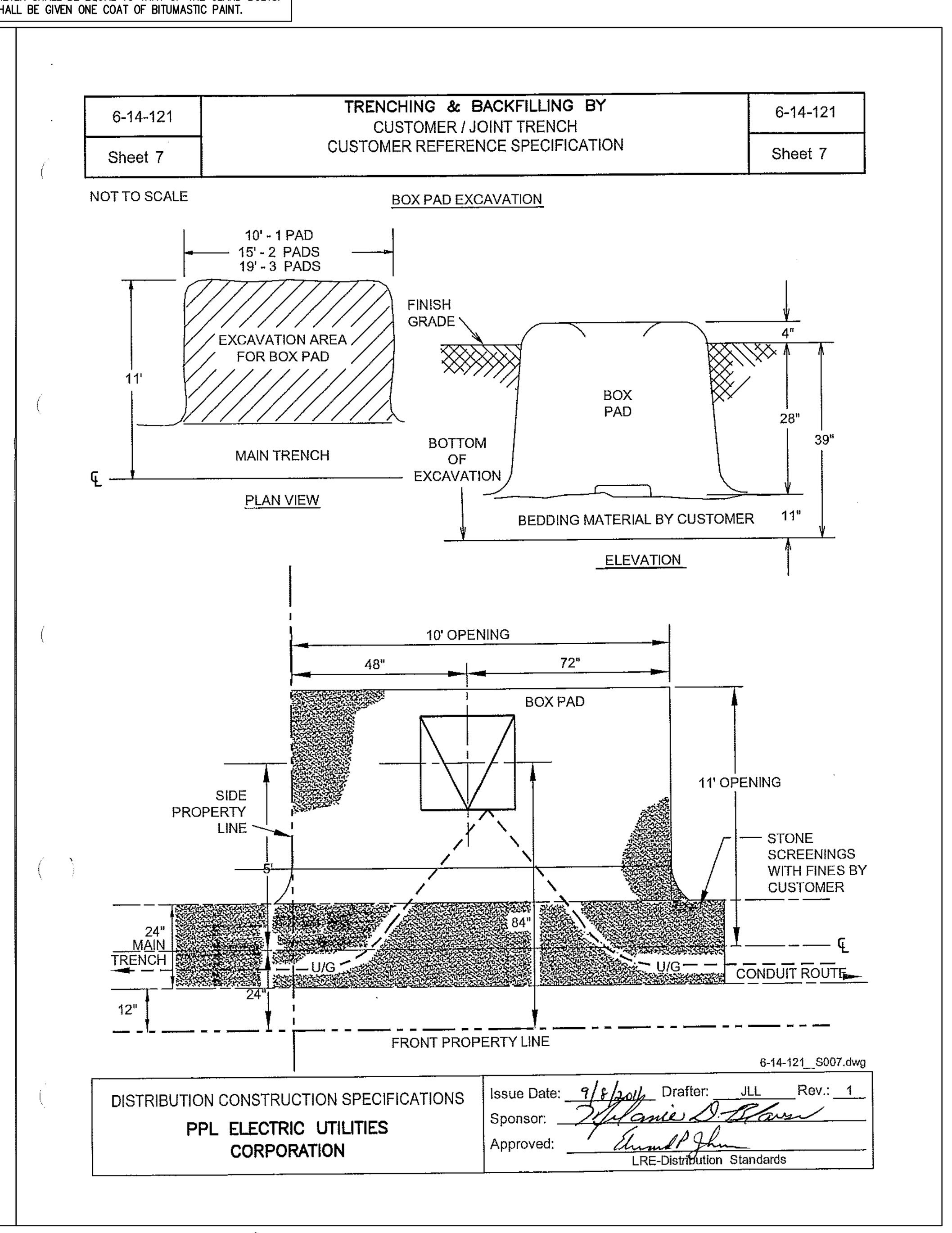
ROAD CROSSINGS

NOT TO SCALE

Notes:
1. PPL EU provides 4 inch and /or 6 inch PVC conduit and end plugs. Customer installs, cleans, and seals conduit.
2. Install conduit(s) at the bottom of a 39 inch deep trench.

6-14-121_S006.dwg

DISTRIBUTION CONSTRUCTION SPECIFICATIONS PPL ELECTRIC UTILITIES CORPORATION	Issue Date: 9/8/2016 Drafter: JLL Rev.: 2 Sponsor: [illegible] Approved: [illegible] LRE-Distribution Standards



6-14-121	TRENCHING & BACKFILLING BY CUSTOMER / JOINT TRENCH CUSTOMER REFERENCE SPECIFICATION	6-14-121
Sheet 7		Sheet 7

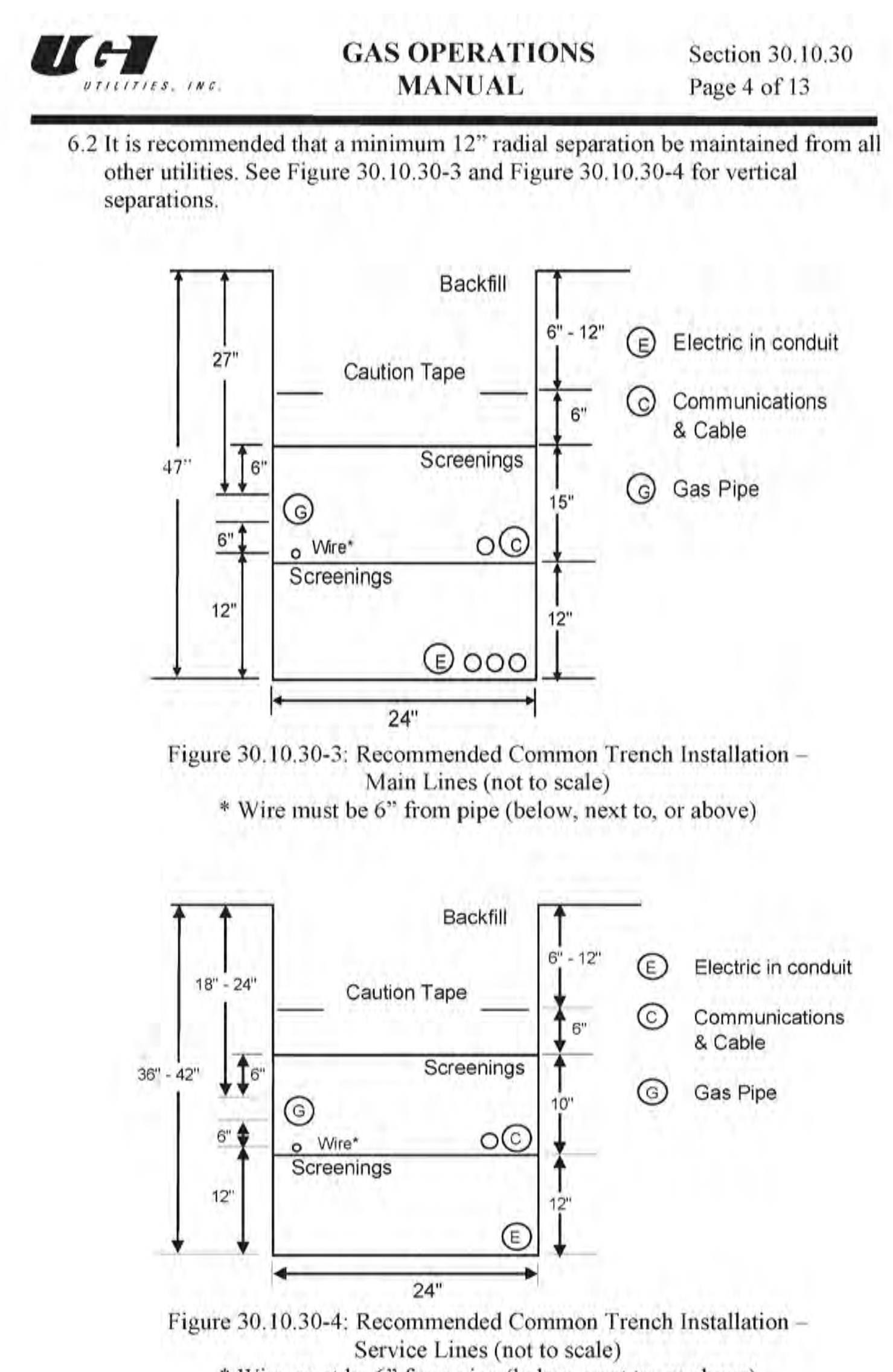
NOT TO SCALE

BOX PAD EXCAVATION

6-14-121_S007.dwg

DISTRIBUTION CONSTRUCTION SPECIFICATIONS PPL ELECTRIC UTILITIES CORPORATION	Issue Date: 9/8/2016 Drafter: JLL Rev.: 1 Sponsor: [illegible] Approved: [illegible] LRE-Distribution Standards

PPL TRENCHING AND BACKFILLING (LATEST VERSION)



UGI UTILITIES, INC. GAS OPERATIONS MANUAL — Section 30.10.30, Page 4 of 13

6.2 It is recommended that a minimum 12" radial separation be maintained from all other utilities. See Figure 30.10.30-3 and Figure 30.10.30-4 for vertical separations.

Figure 30.10.30-3: Recommended Common Trench Installation – Main Lines (not to scale)
* Wire must be 6" from pipe (below, next to, or above)

Figure 30.10.30-4: Recommended Common Trench Installation – Service Lines (not to scale)
* Wire must be 6" from pipe (below, next to, or above)

UGI TRENCHING AND BACKFILLING (LATEST VERSION)

PRELIMINARY/FINAL LAND DEVELOPMENT

NO.	REVISIONS	DATE
1	PER CITY COMMENT LETTER	6/06/22

DRAWN BY: DM — CHECKED BY: AB — SCALE: AS NOTED — DATE: 3/01/22 — PROJECT NO. 4920 — SHEET NO. 14 OF 14

SEAL: COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL ENGINEER — ANDREW THOMAS BOHL — PE062856

PLAN TITLE: CONSTRUCTION DETAIL PLAN

PROJECT TITLE: LVIP VII – LOT 63, 2680 COMMERCE CENTER BLVD.

CITY OF BETHLEHEM
NORTHAMPTON COUNTY
PENNSYLVANIA

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