

PRELIMINARY/FINAL LAND DEVELOPMENT PLAN

LVIP VII - LOT 90

WARD 16 CITY OF BETHLEHEM NORTHAMPTON COUNTY PENNSYLVANIA

Record Notes

1. TRIPLE NET INVESTMENTS LX, LLC(TN 60) IS THE DEVELOPER FOR THIS 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 DOWNSIDE 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. 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, ACTIVATION OF THE AUTOMATIC SPRINKLER SYSTEM SHALL ACTIVATE 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 SUBDIVISION WAS SLAG AND IMPERVIOUS AREA. THIS, NO NEW IMPERVIOUS COVERAGE IS PROPOSED.
15. PROPOSED MONUMENT SIGN LOCATION AND SIZE SHALL CONFORM WITH THE CITY'S ZONING ORDINANCE AND LVP COVENANTS AND WILL REQUIRE A PERMIT FROM THE CITY PRIOR TO CONSTRUCTION.
16. ANY CHANGE IN THE LOCATION OF THE FIRE DEPARTMENT CONNECTION (FDC) MUST BE APPROVED BY THE CITY OF BETHLEHEM FIRE DEPARTMENT.
17. THE CITY OF BETHLEHEM ZONING HEARING BOARD GRANTED A SPECIAL EXCEPTION TO PERMIT DISTRIBUTION AS A PRINCIPAL USE AND WAREHOUSING OR STORAGE AS A PRINCIPAL USE AT THEIR MARCH 23, 2022 HEARING.

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 (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

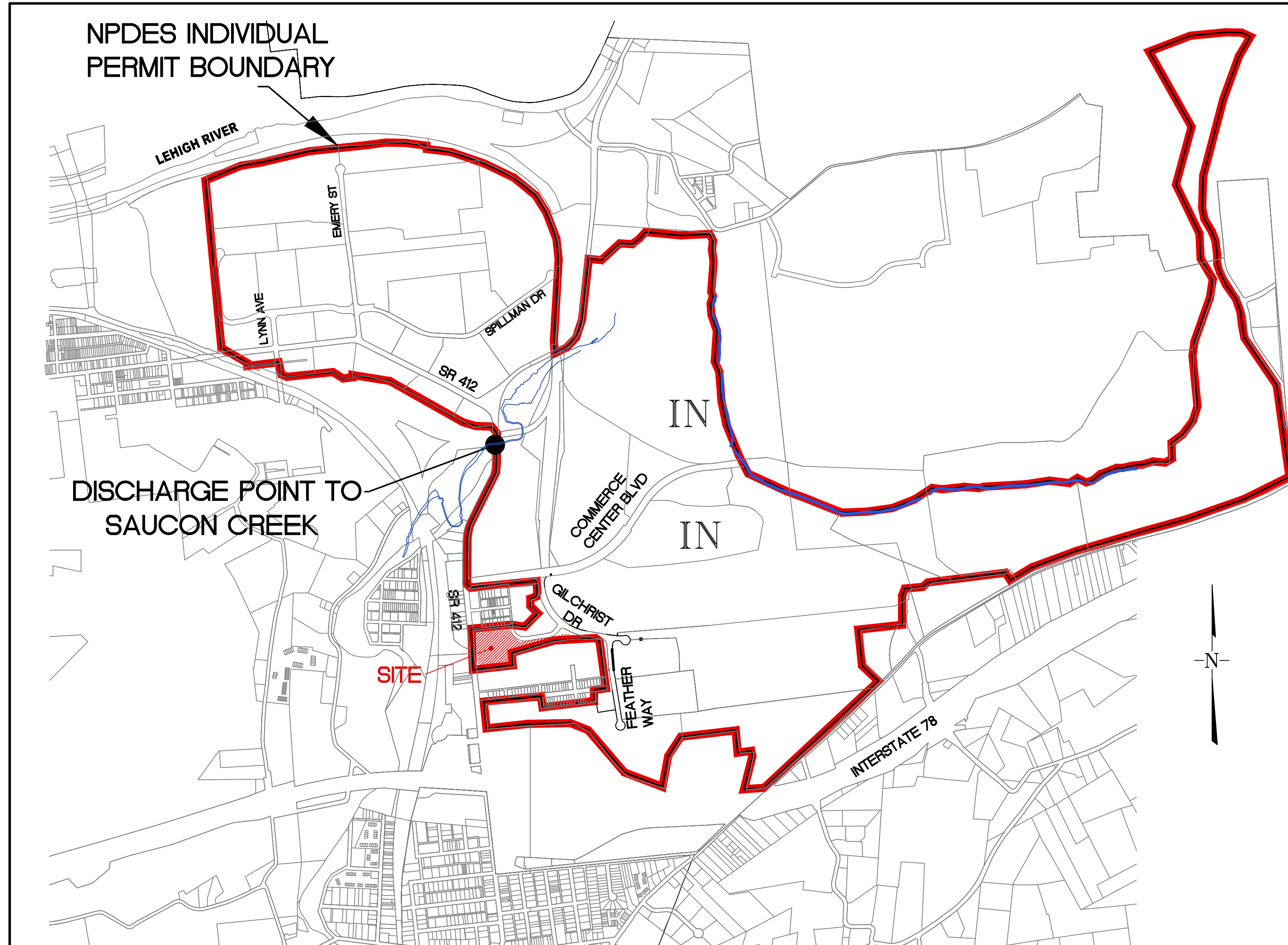
1. THE MAINTENANCE OF STORM WATER FACILITIES NOT DEDICATED TO AND ACCEPTED BY THE CITY, SHALL BE THE OWNER'S RESPONSIBILITY. THE OWNER'S DEED, AND THE DEED TO ANY SUBSEQUENT OWNER, SHALL NOTE THAT THE OWNER SHALL ACCEPT THE MAINTENANCE RESPONSIBILITIES. THE CITY OF BETHLEHEM SHALL BE PERMITTED TO INSPECT 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'

Site Data

CITY PARCEL ID: 216-063574
PARCELS: P7 - 22 - 1B-4
CURRENT SUBDIVISION PLAN: 5.73 ACRES / 249,623 S.F.
TAX MAP REFERENCED: BOOK 2019-5, PAGE 522 RECORDED SEPTEMBER 10, 2019
DEED REFERENCED: MAP P7, BLOCK 22 LOT 1B-4
ZONING DISTRICT: 2005-1-420073
EXISTING USE: IR (INDUSTRIAL)
PROPOSED USE: VACANT LOT
WATER: WAREHOUSE/DISTRIBUTION CENTER (SE)
SEWER: PUBLIC

	REQUIRED/ALLOWED IR DISTRICT	ALLOWED BY LVP COVENANTS	PROPOSED LOT 90
MINIMUM LOT WIDTH:	60 FT	N/A	316 FT.(412)/768 FT.(HARVARD)
MINIMUM DEVELOPMENT AREA:	20,000 S.F.	N/A	5.73 ACRES
MAXIMUM BUILDING COVERAGE:	90%	50%	21.51%
MAXIMUM BUILDING HEIGHT:	200 FT	N/A	45 FT.
IMPERVIOUS COVERAGE:	90%	70%	47.52 % (118,615 S.F.)
SETBACKS:			
FRONT YARD:	10 FT	25 FT	75 FT
REAR YARD:	20 FT (1)	15 FT	N/A
SIDE YARD:	20 FT (1)	15 FT	31 FT
PARKING SETBACKS:			
FRONT YARD:	N/A	15 FT	10 FT. HARVARD (2)
REAR YARD:	N/A	10 FT	N/A
SIDE YARD:	N/A	10 FT	40 FT.
PARKING REQUIREMENTS:			
MINIMUM SIZE:	9' X 18'		9' X 18'
SPACES REQUIRED:			
WAREHOUSING:	1 SPACE PER 1,000 S.F. OF BLDG.		53,700/1000=54
(REQUIRED PARKING FOR MAX. POTENTIAL USE)			
TOTAL SPACES REQUIRED:	54 SPACES		
ACCESSIBLE PARKING:	3 SPACES		4 SPACES
TOTAL SPACES PROVIDED:			63 SPACES
BICYCLE PARKING:	3 SPACES		3 SPACES
BUILDING COVERAGE:	53,700 SF		
	TOTAL 249,623 SF. OR 5.73 AC.		
	(53,700 SF. / 249,623 SF.=21.51%)		

(SE) SPECIAL EXCEPTION - GRANTED ON MARCH 23, 2022 BY THE CITY OF BETHLEHEM ZONING HEARING BOARD.

(1) A REAR YARD OF 50 FT. AND SIDE YARD OF 25 FEET SHALL BE REQUIRED FOR A PRINCIPAL NON-RESIDENTIAL BUILDING WOULD BE ADJACENT TO A LOT IN A RESIDENTIAL DISTRICT. SUCH SIDE AND REAR SHALL BE INCREASED TO 60 FEET FOR ANY BUILDING AREA OR LAND AREA USED FOR MANUFACTURING OR A TRACTOR-TRAILER LOADING AREA.

(2) LVP BUILDING COMMITTEE GRANTED RELIEF OF THE REQUIRED PARKING SETBACK WITHIN THEIR CONSTRAINTS.

AT THE MEETING ON _____, 2022, THE BETHLEHEM CITY PLANNING COMMISSION, BETHLEHEM, PENNSYLVANIA, DULY ENACTED AND APPROVED THIS PLAN OF THE PROPERTY LOT 90, LVP VII LOCATED IN NORTHAMPTON COUNTY AS SHOWN HEREIN.

CHAIRMAN _____

SECRETARY _____

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

LVP/C 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:

TRIPLE NET INVESTMENTS LX, LLC(TN 60)

COMMONWEALTH OF PENNSYLVANIA } SS:

COUNTY OF NORTHAMPTON

I, _____ NAME _____ OF _____ 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.

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 POST CONSTRUCTION STORMWATER MANAGEMENT PLAN
- 9 EROSION & SEDIMENTATION CONTROL PLAN
- 10 EROSION & SEDIMENTATION CONTROL DETAIL SHEET
- 11 EROSION & SEDIMENTATION CONTROL DETAIL SHEET
- 12 CONSTRUCTION DETAIL SHEET
- 13 CONSTRUCTION DETAIL SHEET

Supplemental Plans

VEHICLE MOVEMENT EXHIBIT - 1 OF 1

LIGHTING PLAN - (BY OTHERS)

Statement of Intent

TO CONSTRUCT A WAREHOUSE / DISTRIBUTION CENTER BUILDING WITH ASSOCIATED PARKING AND INFRASTRUCTURE.

Plan Preparer



HanoverEngineering

Bethlehem Office

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Bethlehem, PA 18017-8944 F:610.691.6968
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Owner

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

Equitable Owner/ Applicant

TRIPLE NET INVESTMENTS LX, LLC(TN 60)

171 STATE ROUTE 173, SUITE 100
ASBURY, NJ 08802
(908)-730-6909
mcampbell@gpetrucci.com

Site Address

1010 HARVARD AVE.
BETHLEHEM, PA 18015

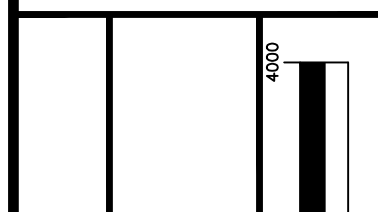
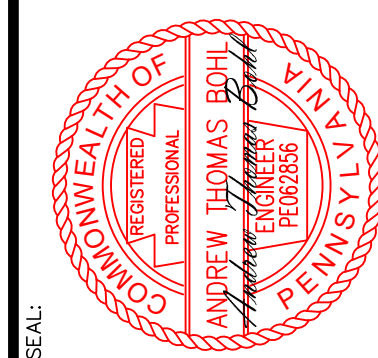
PRELIMINARY/FINAL LAND DEVELOPMENT
(RECORD PLAN 1 OF 2)

COVER SHEET

LVP VII - LOT 90
1010 HARVARD AVENUE

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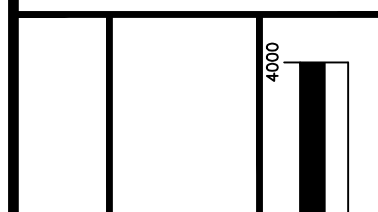
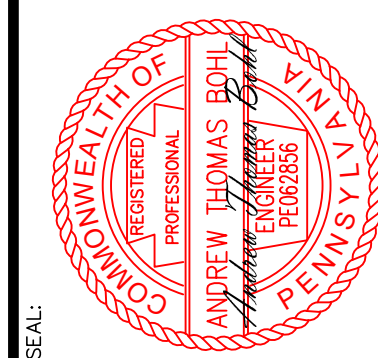
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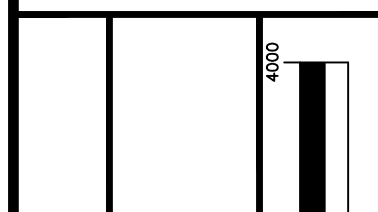
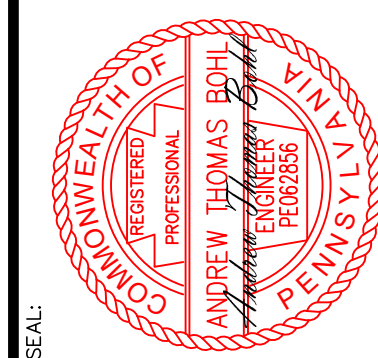
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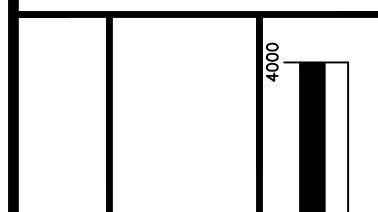
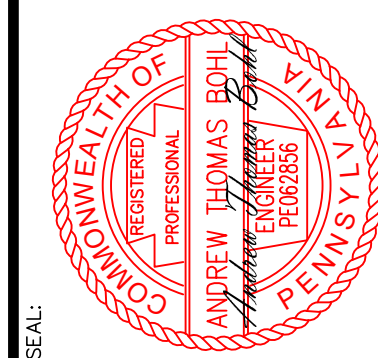
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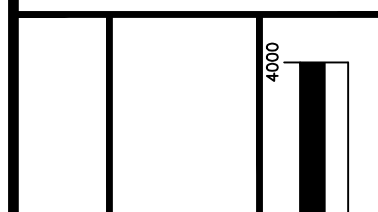
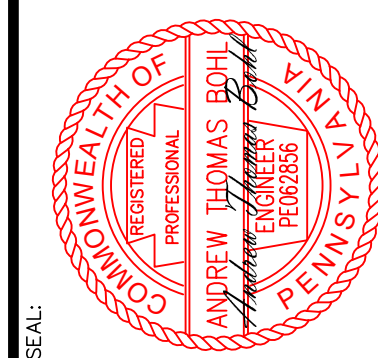
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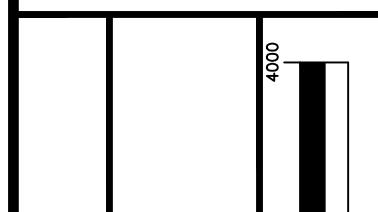
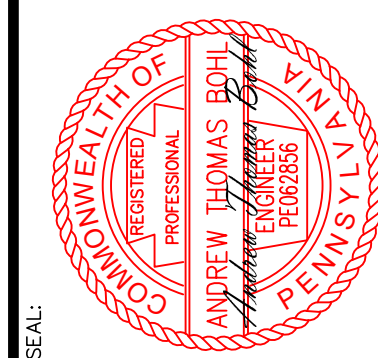
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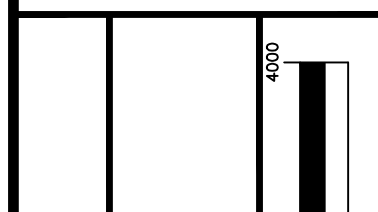
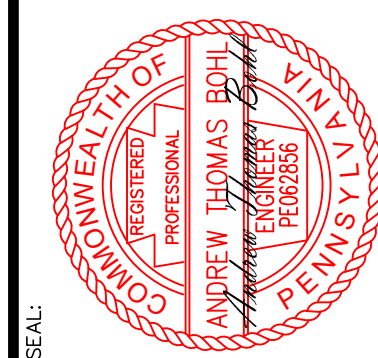
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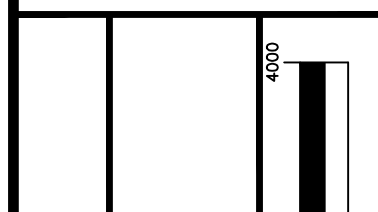
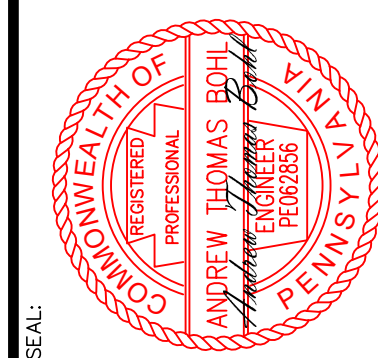
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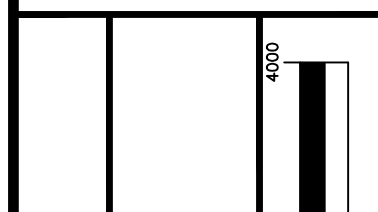
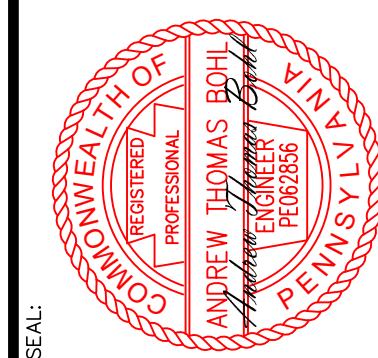
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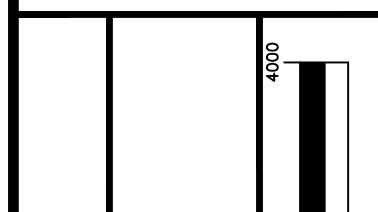
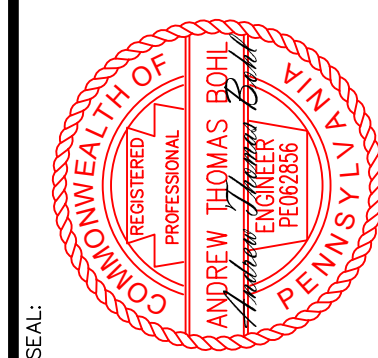
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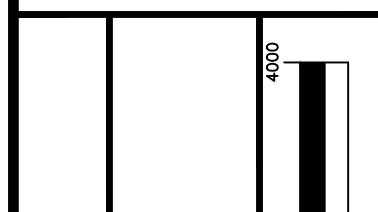
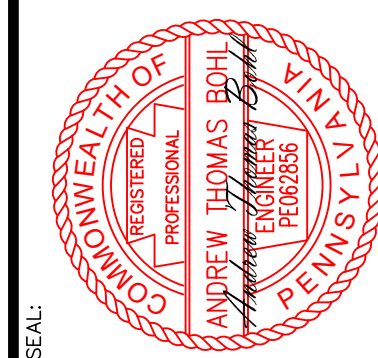
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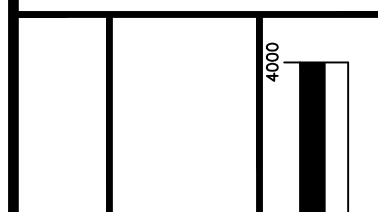
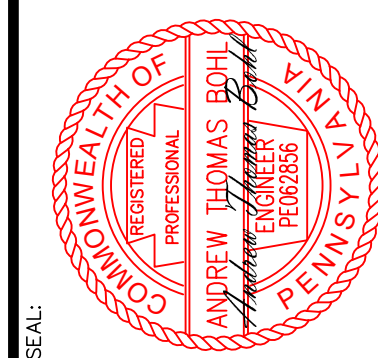
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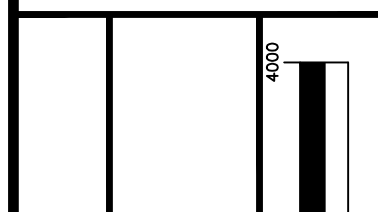
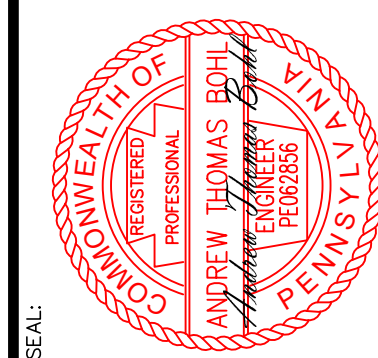
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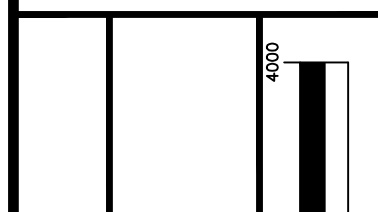
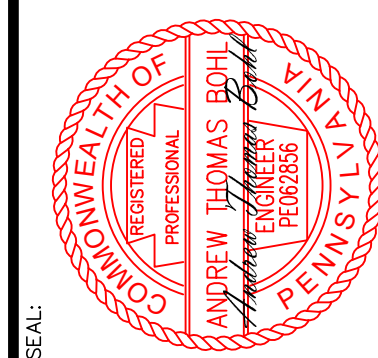
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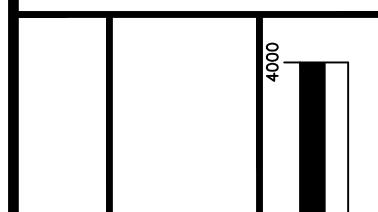
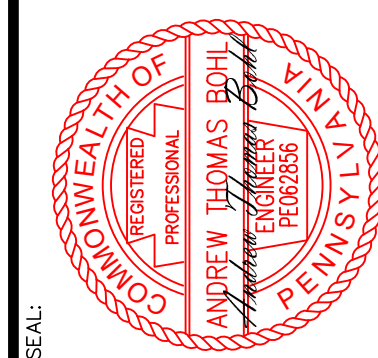
PLAN TITLE: COVER SHEET

PROJECT TITLE:

PLAN TITLE:

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



PLAN TITLE: COVER SHEET

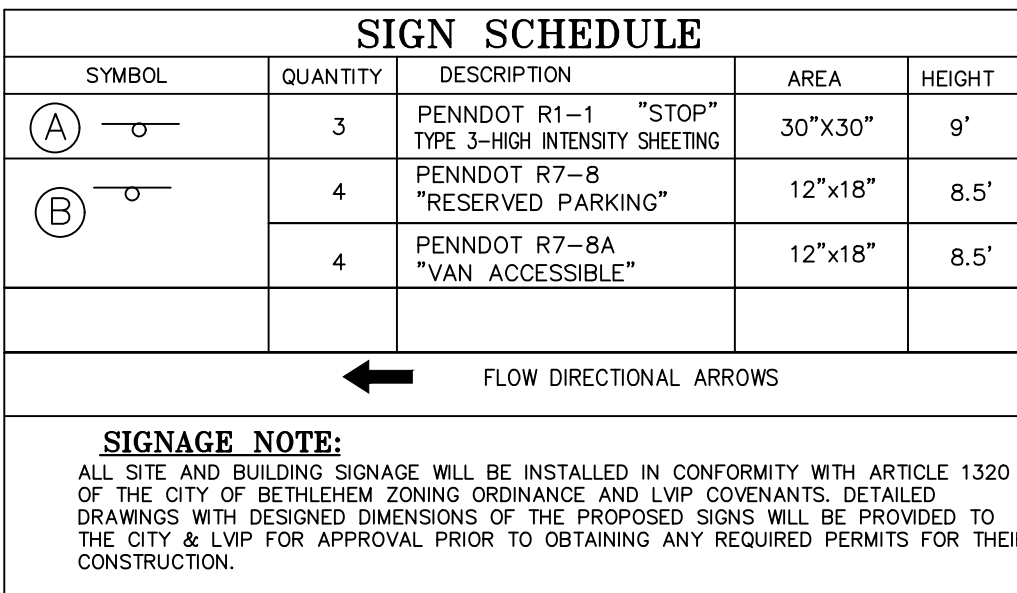
PROJECT TITLE:

PLAN TITLE:

CITY OF BETHLEHEM
NORTHAMPTON COUNTY
PENNSYLVANIA



	PROPERTY LINE, RIGHT-OF-WAY
	EXISTING STORM SEWER
	EXISTING CURB
	EXISTING RIGHT-OF-WAY
	ADJACENT PROPERTY LINE
	EXISTING UTILITY POLE
	EXISTING GUY WIRE
	EXISTING LIGHT POLE
	EXISTING IRON PIN
	EXISTING TREES
	EXISTING STORM INLETS
	EXISTING STORM SEWER MANHOLE
	EXISTING SANITARY SEWER MANHOLE
	EXISTING CONCRETE SIDEWALK
	PROPOSED CURB
	PROPOSED CONCRETE SIDEWALK
	PROPOSED SIGN
	PROPOSED HANDICAP RAM w/ DWS



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.

AT THE MEETING ON _____, 2022, THE BETHLEHEM CITY PLANNING COMMISSION, BETHLEHEM, PENNSYLVANIA, DULY ENACTED AND APPROVED THIS PLAN OF THE PROPERTY LOT 90, LVIP VII LOCATED IN NORTHAMPTON COUNTY AS SHOWN HEREIN.

CHAIRMAN

~~SECRETAR~~

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:

TRIPLE NET INVESTMENTS LX, LLC(TN 60)

COMMONWEALTH OF PENNSYLVANIA }
COUNTY OF NORTHAMPTON } SS

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.

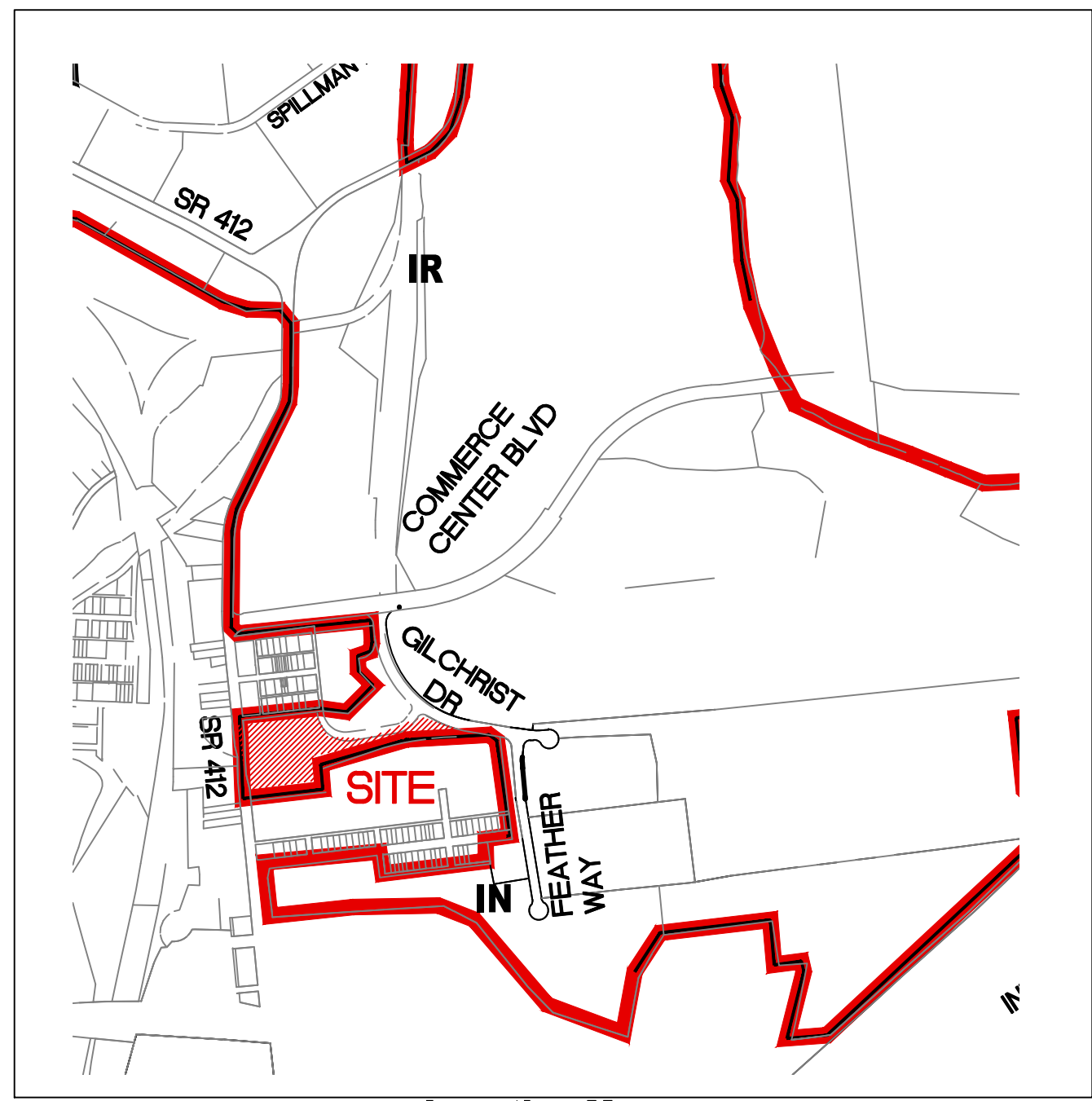
CORPORATION

CORPORATION OFFICIAL

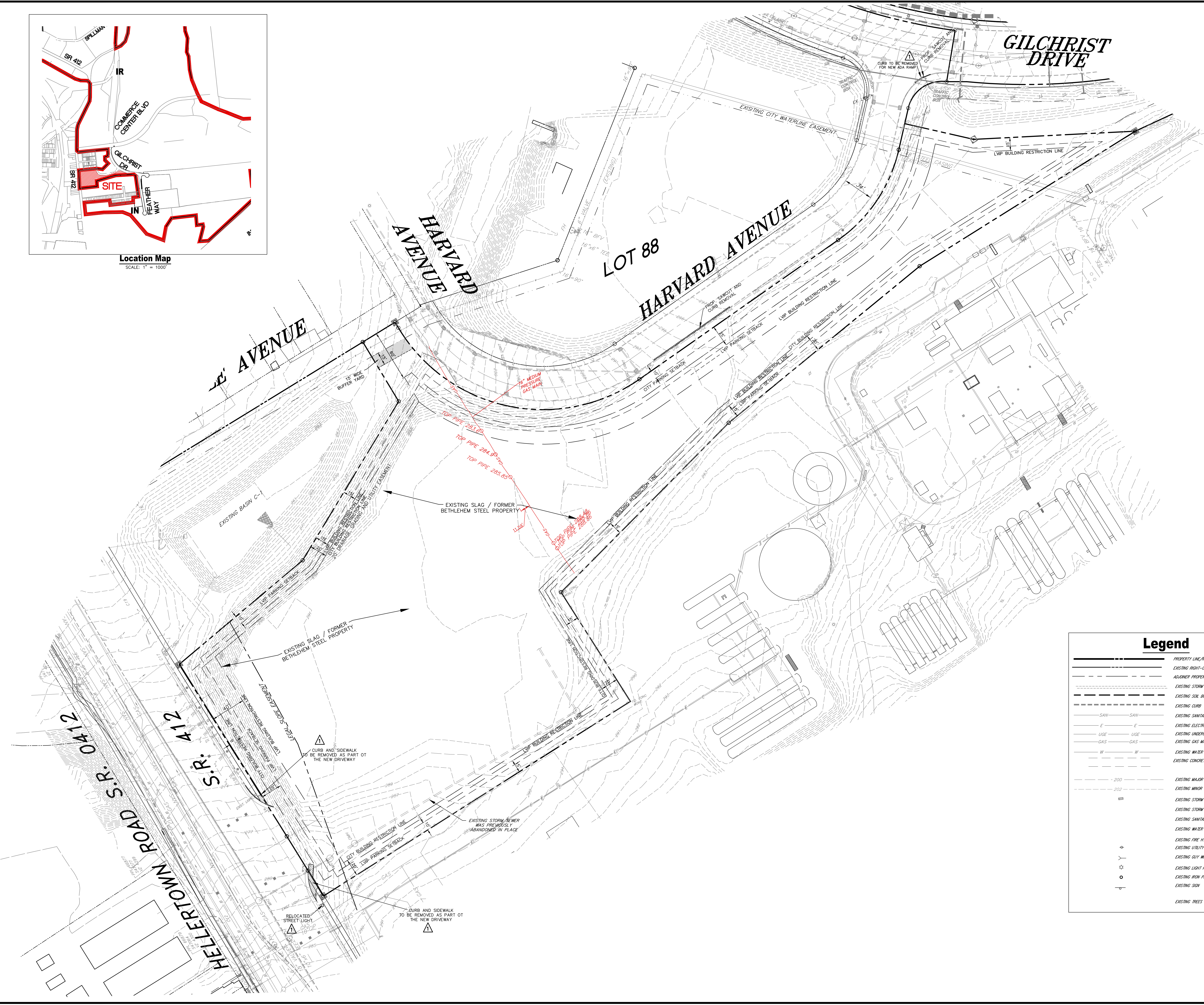
SWORN AND SUBSCRIBED TO BEFORE ME THIS ____ DAY OF _____, ____

NOTARY PUBLIC

MY COMMISSION EXPIRES ON _____



Location Map
SCALE: 1" = 1000'



Legend	
	PROPERTY LINE/RIGHT-OF-WAY
	EXISTING RIGHT-OF-WAY
	ADJOINING PROPERTY LINE
	EXISTING STORM SEWER
	EXISTING SANITARY SEWER
	EXISTING ELECTRIC LINE
	EXISTING UNDERGROUND ELECTRIC
	EXISTING GAS MAIN
	EXISTING WATER LINE
	EXISTING CONCRETE SIDEWALK
	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

PRELIMINARY/FINAL LAND DEVELOPMENT

EXISTING FEATURES AND DEMOLITION PLAN

PROJECT TITLE:
LVP VII - LOT 90
1010 HARVARD AVENUE

CITY OF BETHLEHEM
NORTHAMPTON COUNTY
PENNSYLVANIA

PREPARED BY:
DATE: 6/06/22
SCALE: 1" = 40'



NO. 1
REVISIONS
PER CITY COMMENT LETTER

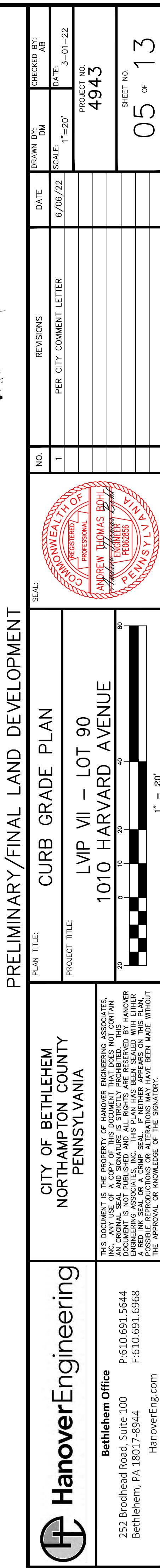
CHECKED BY: JLB
DATE: 5-01-22
PROJECT NO.: 4943
SHEET NO.: 03 OF 13

1. NE CORNER (SQUARE CUT) OF A CONCRETE PPL VAULT
(669615/47176) ON THE SOUTH SIDE OF COMMERCE
CENTER BLVD NEAR THE WEST SIDE OF GLCHRIST DRIVE.
ELEV=263.38

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

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

4. NW CORNER (SQUARE CUT) OF A CONCRETE PPL
VAULT(670625/47058) ON THE EAST SIDE OF FEATHER
WAY, JUST NORTH OF THE CURTIS WRIGHT BUILDING.
ELEV=344.36

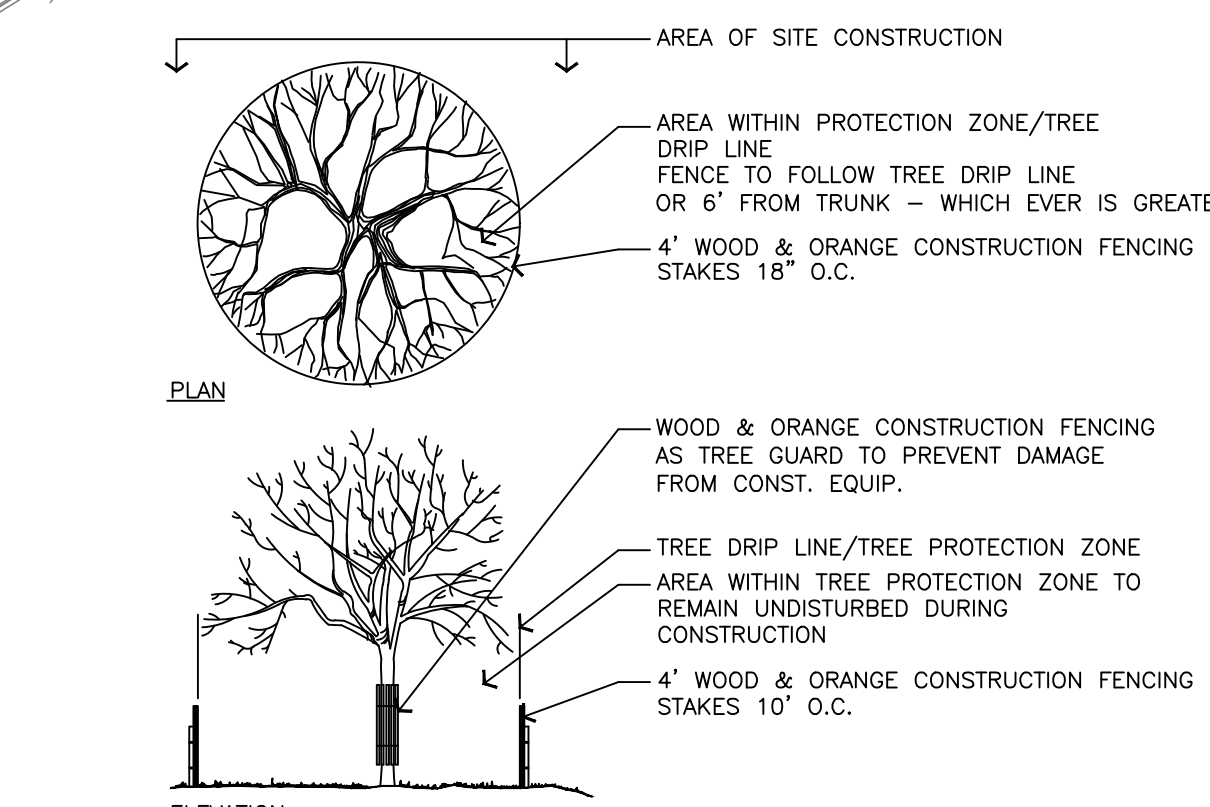


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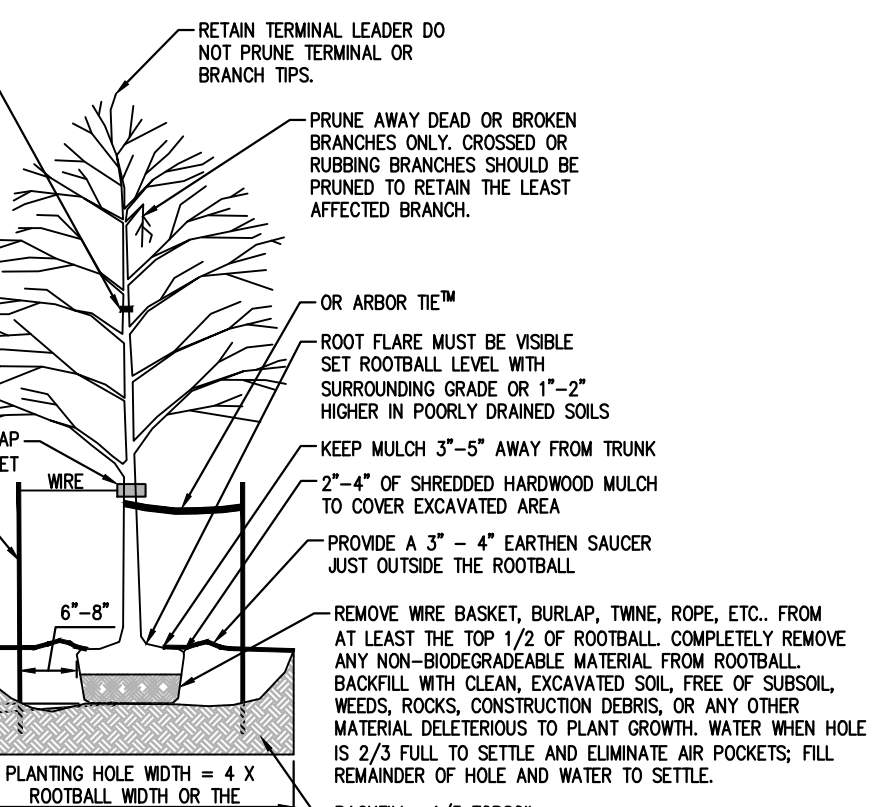
LANDSCAPE PLAN REQUIREMENTS

LANDSCAPE PROJECT AREA-249,623 S.F./5.73 AC.	
EXISTING IMPERVIOUS WITHIN PROJECT AREA-0 S.F./0 AC.	
PROPOSED IMPERVIOUS WITHIN PROJECT AREA-118,615 S.F./2.72 AC.	
PROPOSED IMPERVIOUS AREAS:-	
BUILDINGS-	53,700 SF
SIDEWALKS-	1,763 SF
PARKING AND DRIVEWAYS (WITH TRASH ENCL.)-	63,152 SF
PROPOSED BUILDING COVER WITHIN AREA OF CONSTRUCTION = 47,522	

- Proposed Use:
- Project Acreage: 5.73 acres
- Resultant Acreage: 3.82 acres (5.73 ac. \div 1.5)
- Required Deciduous Trees: 3.82 ac. \times 5 = 19.1 = 20 trees
- Proposed Deciduous Trees: 20 trees
- Required Evergreen Trees: 3.82 AC. \times 4 = 15.28 = 16 TREES
- Proposed Evergreen Trees: 16 trees



DECIDUOUS TREE PLANTING DETAIL



SHRUB PLANTING DETAIL

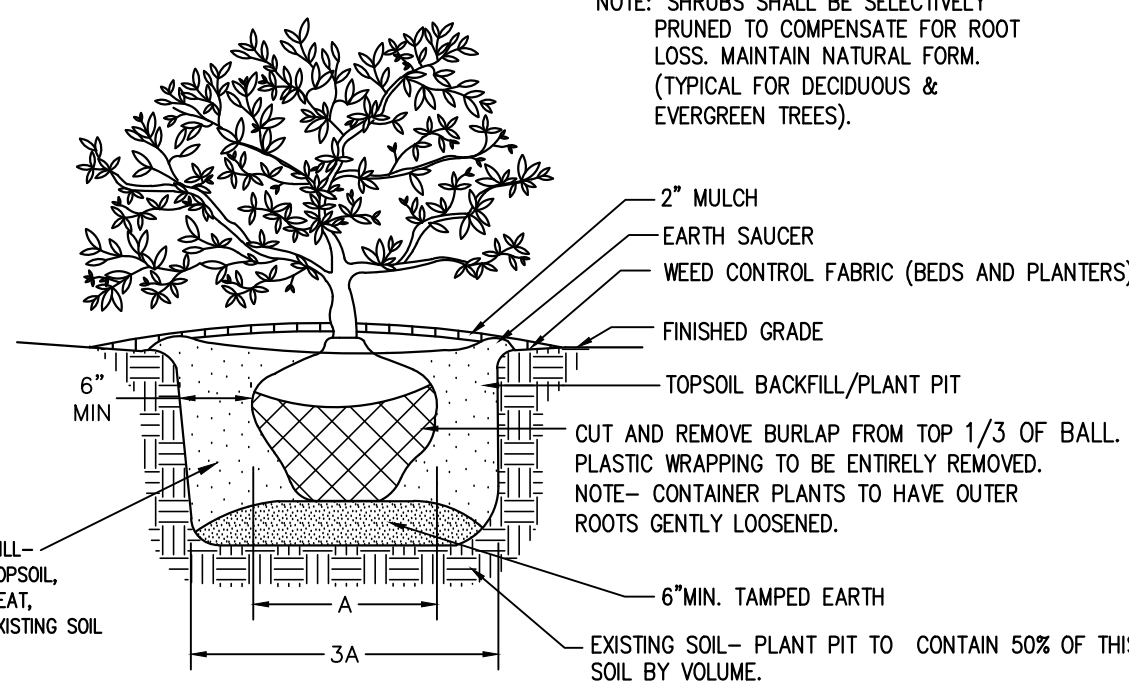


Diagram illustrating the process of stump removal and soil preparation:

- EXISTING UNDISTURBED SOIL**: The base layer of soil.
- CLUT AND REMOVE TOP 1/2 OF ROOTBALL COVERING ESPECIALLY AROUND TRUNK**: The top layer of the stump, which is cut and removed.
- BACKFILL - 1/3 TOPSOIL, 1/3 PEAT, 1/3 EXISTING SOIL**: The material used to fill the hole after the stump is removed.
- EARTH SAUCER FINISHED GRADE**: The final surface level after the stump is removed.
- SURVEYOR TAPE FOR VISIBILITY**: A line of tape used to mark the area.
- 3" MUD - 3"-5" AWAY FROM TRUNK**: A layer of mud applied around the stump.
- FIXING REMOVE STAKING MATERIAL**: The removal of staking material used to support the stump.
- (1) 2" WOODHOPE STAKES IF LOW (2) LOCATE ONE STAKE ON SIDE OF PREVAILING WINDS**: Stakes used to mark the area.
- REMOVE WIRE BASKET, BURLAP, THIN AT LEAST THE TOP 1/2 OF ROOTBALL**: The removal of the wire basket and burlap from the stump.
- 4.6**: A dimension indicating the width of the stump.

2. NO PERSON SHALL BURN, INJURE, MUTILATE, KILL OR DESTROY ANY TREE OR SHRUB, OR PERMIT ANY FIRE TO BE BURNED IN SUCH A MANNER AS TO INJURE, MUTILATE, KILL OR DESTROY ANY TREE OR SHRUB.
3. NO PERSON SHALL KNOWINGLY PERMIT ANY LEAK TO EXIST IN ANY GAS PIPE WITHIN THE ROOT ZONE OF ANY TREE OR SHRUB.
4. NO PERSON SHALL PERMIT ANY TOXIC CHEMICAL, TO SEEP, DRAIN OR BE EMPTIED ON OR ABOUT ANY TREE OR SHRUB.
5. NO PERSON SHALL KNOWINGLY PERMIT ELECTRIC WIRES TO COME IN CONTACT WITH TREES OR SHRUBS IN ANY MANNER AS TO INJURE, MUTILATE, KILL OR DESTROY ANY TREE OR SHRUB.
6. NO PERSON SHALL ATTACH ANY ELECTRICAL INSULATION TO ANY TREE OR SHRUB IN A PUBLIC AREA OR SHALL PERMIT ANY ELECTRICAL INSULATION TO BE ATTACHED TO ANY TREE OR SHRUB IN A PUBLIC AREA.
7. NO PERSON SHALL IN ANY MANNER REMOVE OR DESTROY ANY TREE OR SHRUB OR PERMIT ANY TREE OR SHRUB TO BE REMOVED OR DESTROYED WITHOUT FIRST OBTAINING PERMISSION FROM THE DIRECTOR.
8. NO PERSON SHALL CUT, REMOVE OR DESTROY ANY TREE OR SHRUB OR PERMIT ANY TREE OR SHRUB TO BE CUT, REMOVED OR DESTROYED WITHOUT FIRST OBTAINING PERMISSION FROM THE DIRECTOR.
9. WHENEVER THE DIRECTOR DETERMINES IT IS NECESSARY TO MOVE, PROTECT OR CUT OFF THE ELECTRICITY FROM ANY TREE OR SHRUB IN A PUBLIC AREA, THE DIRECTOR SHALL NOTIFY THE OWNERS OF SUCH WIRES AND SUCH OWNERS SHALL COMPLY WITH SUCH ORDERS WITHIN TWENTY-FOUR HOURS OF THE DATE OF SUCH NOTICE.
10. NO PERSON SHALL PLACE STAKES, BRINE OIL, OR OTHER SUBSTANCES INJURIOUS TO PLANT GROWTH IN ANY MANNER AS TO INJURE, MUTILATE, KILL OR DESTROY ANY TREE OR SHRUB IN A PUBLIC AREA.
11. NO PERSON SHALL CUT, REMOVE OR DESTROY ANY TREE OR SHRUB OR PERMIT ANY TREE OR SHRUB TO BE CUT, REMOVED OR DESTROYED WITHOUT FIRST OBTAINING PERMISSION FROM THE DIRECTOR.
12. NO PERSON SHALL BUILD ANY FIRE OR STATION ANY HOT KETTLE, ROAD ROLLER OR OTHER ENGINE IN SUCH A MANNER AS TO INJURE, MUTILATE, KILL OR DESTROY ANY TREE OR SHRUB IN A PUBLIC AREA.
13. NO PERSON SHALL BE PERMITTED TO LAY ANY SIDEWALK ALONG OR TO OPEN, CONSTRUCT, CURB OR PAVE ANY SIDEWALK OR TO DO ANY SUCH WORK IN SUCH A MANNER AS TO DO INJURY TO ANY TREE OR SHRUB IN A PUBLIC AREA.
14. NO PERSON SHALL BE PERMITTED TO CUT, REMOVE OR DESTROY ANY TREE OR SHRUB IN A PUBLIC AREA IN SUCH A MANNER AS TO DAMAGE OR DESTROY ANY TREE OR SHRUB OR PLANT IN ANY PUBLIC AREA.
15. NO PERSON SHALL BE PERMITTED TO CUT, REMOVE OR DESTROY ANY TREE OR SHRUB THAT IS MORE THAN ONE INCH IN DIAMETER, IT SHALL BE THE DUTY OF THE CONTRACTOR TO PROTECT SUCH ROOTS RUNS UNDER FROM THE

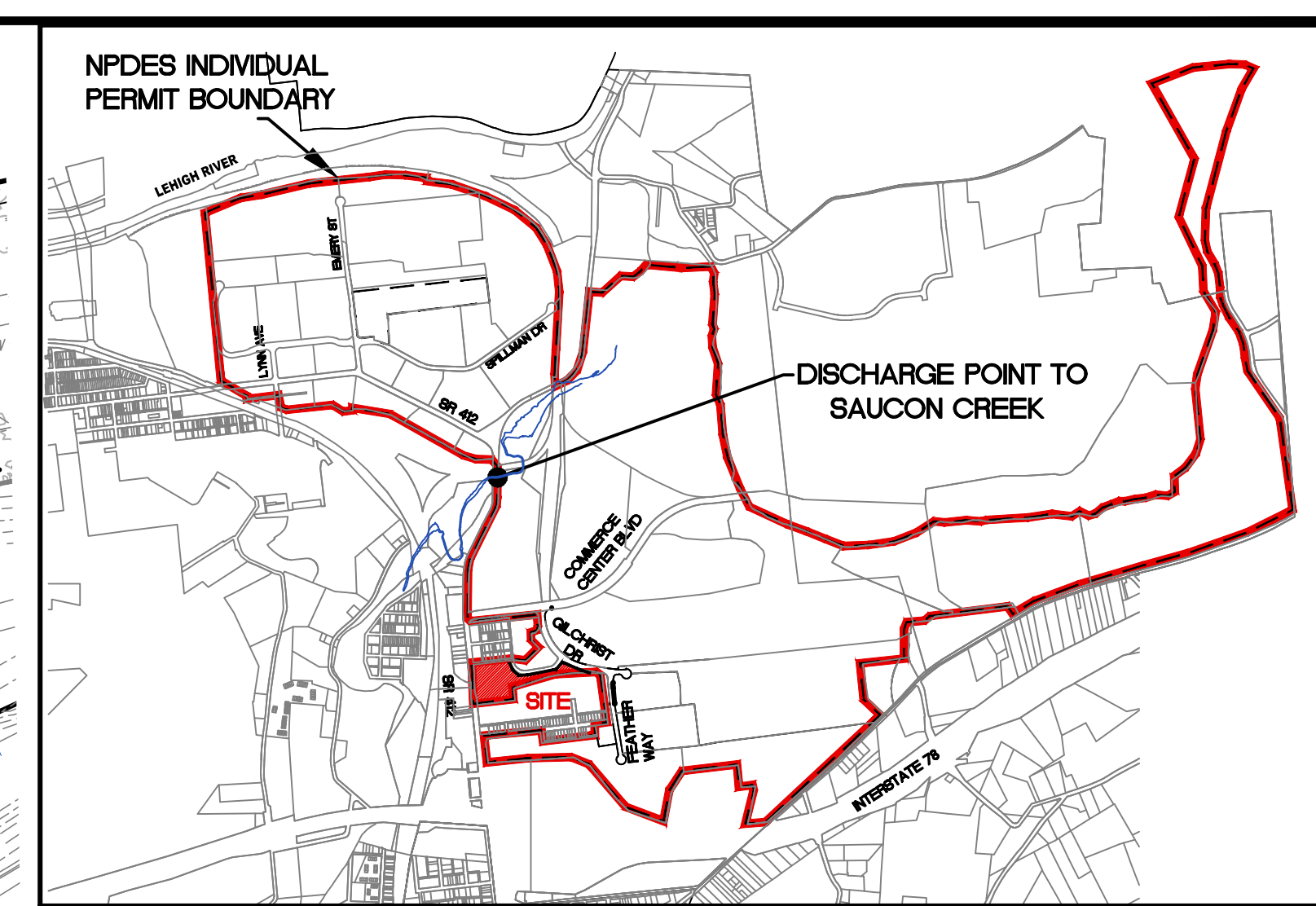
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UNDERGROUND CONDUIT NOTE

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. 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.



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 AND ORDINANCES THAT MAY APPLY TO THE PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND FOR OBTAINING THE NECESSARY APPROVALS FOR THE PROPOSED DISPOSAL OF MATERIALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER DISPOSAL OF ALL MATERIALS THAT ARE NOT RECYCLED OR REUSED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER DISPOSAL OF ALL MATERIALS THAT ARE NOT RECYCLED OR REUSED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER DISPOSAL OF ALL MATERIALS THAT ARE NOT RECYCLED OR REUSED.

ALL SUBSLOPS OF MATERIALS THAT ARE NOT RECYCLED OR REUSED SHALL BE DISPOSED OF IN ACCORDANCE WITH THE FOLLOWING: ALL SUBSLOPS OF MATERIALS THAT ARE NOT RECYCLED OR REUSED SHALL BE DISPOSED OF IN ACCORDANCE WITH THE FOLLOWING: ALL SUBSLOPS OF MATERIALS THAT ARE NOT RECYCLED OR REUSED SHALL BE DISPOSED OF IN ACCORDANCE WITH THE FOLLOWING:

SEMENT WHICH HAS BEEN TRAPPED BY SET BARBERS FACILITIES MUST BE REMOVED AND STOCKPILED OR REBURNED ON THE PROJECT SITE. SEMENT WHICH HAS BEEN TRAPPED BY SET BARBERS FACILITIES MUST BE REMOVED AND STOCKPILED OR REBURNED ON THE PROJECT SITE. SEMENT WHICH HAS BEEN TRAPPED BY SET BARBERS FACILITIES MUST BE REMOVED AND STOCKPILED OR REBURNED ON THE PROJECT SITE.

WARNING OF FILTER STEEL AND RE-ESTABLISHMENT OF WET SEEDING FROM BACKS, DIPS, OR OTHER ELEVATIONS SHALL BE ONLY PERMITTED UPON THE EFFECTIVE SIGNING OF THE PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER DISPOSAL OF ALL MATERIALS THAT ARE NOT RECYCLED OR REUSED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER DISPOSAL OF ALL MATERIALS THAT ARE NOT RECYCLED OR REUSED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER DISPOSAL OF ALL MATERIALS THAT ARE NOT RECYCLED OR REUSED.

IF THE CONTRACTOR DESIRES TO RECYCLE OR DISPOSAL OF ANY SOIL, OR ROCK MATERIAL, TO LOCATIONS OTHER THAN THE PROJECT AREA FOR WHICH THIS PLAN HAS BEEN PREPARED, THE CONTRACTOR SHALL ADVISE FOR PREPARATION AND SUBMITTAL TO THE APPROPRIATE COUNTY CONSERVATION DIVISION OF EROSION AND SEDIMENT CONTROL PLAN.




<div></div> <div>HanoverEngineering</div>		<div>Bethlehem Office</div> <div>252 Broadhead, Suite 100</div> <div>Bethlehem, PA 18017-8944</div> <div>P:610.691.5644</div> <div>F:610.691.6198</div> <div>HanoverEng.com</div>	<div>THIS DOCUMENT IS THE PROPERTY OF HANOVER ENGINEERING ASSOCIATES, INC. AND IS TO BE USED ONLY FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREIN. IT IS NOT TO BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF HANOVER ENGINEERING ASSOCIATES, INC. ANY UNAUTHORIZED USE OF THIS DOCUMENT IS PROHIBITED. THE USER OF THIS DOCUMENT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES AND AGENCIES OF THE COMMONWEALTH OF PENNSYLVANIA. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES AND AGENCIES OF THE COMMONWEALTH OF PENNSYLVANIA.</div>	<div>CITY OF BETHLEHEM</div> <div>NORTHAMPTON COUNTY</div> <div>PENNSYLVANIA</div>	<div>PLAN TITLE:</div> <div>POST CONSTRUCTION STORMWATER MANAGEMENT PLAN</div> <div>PROJECT TITLE:</div> <div>LVP VII – LOT 90</div> <div>1010 HARVARD AVENUE</div> <div></div>	<div>NO.</div> <div>1</div> <div>REVISIONS</div> <div>DATE 5/09/22</div> <div>SCALE 1"=40'</div> <div>PER CITY COMMENT LETTER</div> <div>PROJECT NO.</div> <div>4943</div> <div>SHEET NO.</div> <div>08 of 13</div>	<div>APPROVED BY: DM</div> <div>DRAWN BY: DM</div> <div>CHECKED BY: AB</div> <div>DATE 5/09/22</div> <div>SCALE 1"=40'</div> <div>PER CITY COMMENT LETTER</div> <div>PROJECT NO.</div> <div>4943</div> <div>SHEET NO.</div> <div>08 of 13</div>
				<div>SEAL</div> <div></div>			

TABLE 11-1 Cubic Yards of Topsoil Required for Application to Various Depths			
Depth (in)	Per 1,000 Square Feet	Per Acre	
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 DSWG

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 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

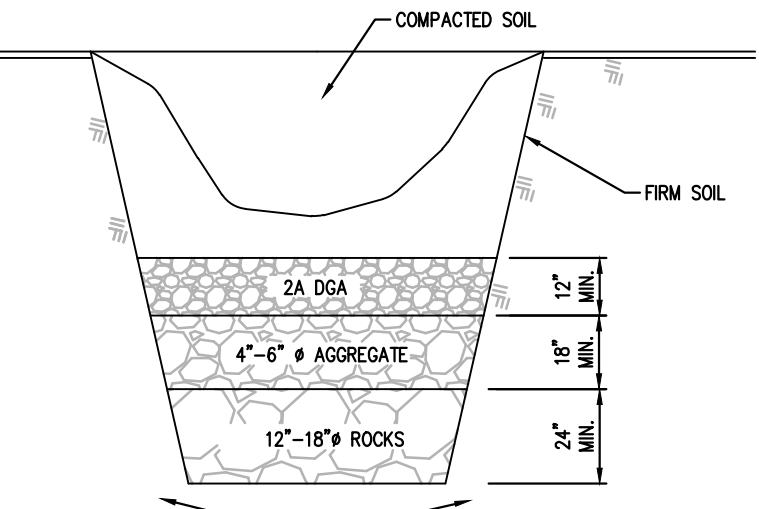
Adapted from Penn State, "Erosion Control and Conservation Plantings on Noncropland"

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	Wet Soil	Dry Site	Low Fertility	Acid Soil (pH 5.5-7)	Purity (%)	Ready Germ (%)	Hard Seed (%)	Total Germ (%)	Seeds/bt (1,000s)
Warm-Season Grasses										
Deerfootgrass	bunch	yes	yes	yes	yes	97	75	75	250	
Weeping lovegrass	bunch	no	yes	yes	yes	95	78	75	1,500	
Switchgrass	bunch	yes	yes	yes	yes	100 (PLS)			300	
Big bluestem	bunch	no	yes	yes	yes	100 (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 fescue	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	
River cordgrass	sod	yes	yes	yes	no	95	70	70	500	
Oxchordgrass	bunch	yes	yes	yes	no	80	64	64	400	
Timothy	bunch	yes	no	yes	yes	95	80	80	1,230	
Smooth bromegrass	sod	no	yes	yes	no	95	80	80	136	
Legumes										
Crownvetch	sod	no	yes	yes	no	98	40	30	65	120
Birdfoot trefoil ¹	bunch	yes	no	yes	yes	98	60	30	400	
Flatpea	sod	no	no	yes	yes	98	55	20	75	10
Serotia 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	yes	yes	yes	yes	98	85	85	18	
Spring oats	bunch	no	no	no	no	98	85	85	13	
Barley	bunch	no	no	no	no	98	85	85	15	
Japanese millet	bunch	yes	no	yes	yes	98	80	80	155	

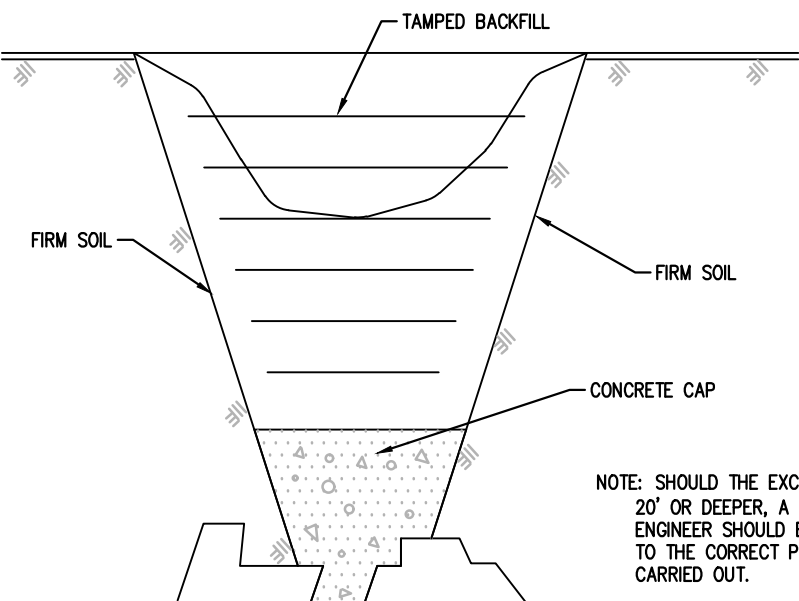
- ¹ Growth habit refers to the ability of the species to either form a dense sod by vegetative means (stolons, rhizomes, or roots) or remain in a bunch or single plant form. If seeded heavily enough, even bunch formers can produce a very dense stand. This is sometimes called a sod, but not in the sense 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, deerfootgrass 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 fabas.
- ⁶ Birdfoot 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,"



Sinkhole In Soil

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\"/>



Sinkhole In Rock

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 HIGHSPM GROUT INTO HOLES AND CRACKS UNTIL HOLES 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\"/>

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	96	
		10	15	
		90	120	
2 ³	Tall fescue, or Fine fescue, or Kentucky bluegrass, plus Redtop ⁴ , or Perennial ryegrass	60	75	
		25	30	
		3	3	
3	Birdsfoot trefoil, plus Tall fescue	6	10	
		30	35	
		6	10	
4	Birdsfoot trefoil, plus Reed canarygrass	6	10	
		10	15	
		10	15	
5 ⁵	Crownvetch, plus Tall fescue, or Perennial ryegrass	20	25	
		10	15	
		20	25	
6 ^{5,6}	Crownvetch, plus Annual ryegrass	10	15	
		6	10	
		10	15	
7 ⁶	Birdsfoot trefoil, plus Crownvetch, plus Tall fescue	20	30	
		20	30	
		20	30	
8	Flatpea, plus Tall fescue, or Perennial ryegrass	10	20	
		20	25	
		10	20	
9 ⁶	Serotia lespedeza, plus Tall fescue, plus Redtop ⁴	3	3	
		40	60	
		10	15	
10	Oxchordgrass, plus Birdsfoot trefoil	15	20	
		15	20	
		6	10	
11	Switchgrass, or Big bluestem, plus Birdsfoot trefoil	15	20	
		15	20	
		6	10	
12 ⁷	Orchardgrass, or Smooth bromegrass, plus Birdsfoot trefoil	20	30	
		25	35	
		6	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 30%, 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.

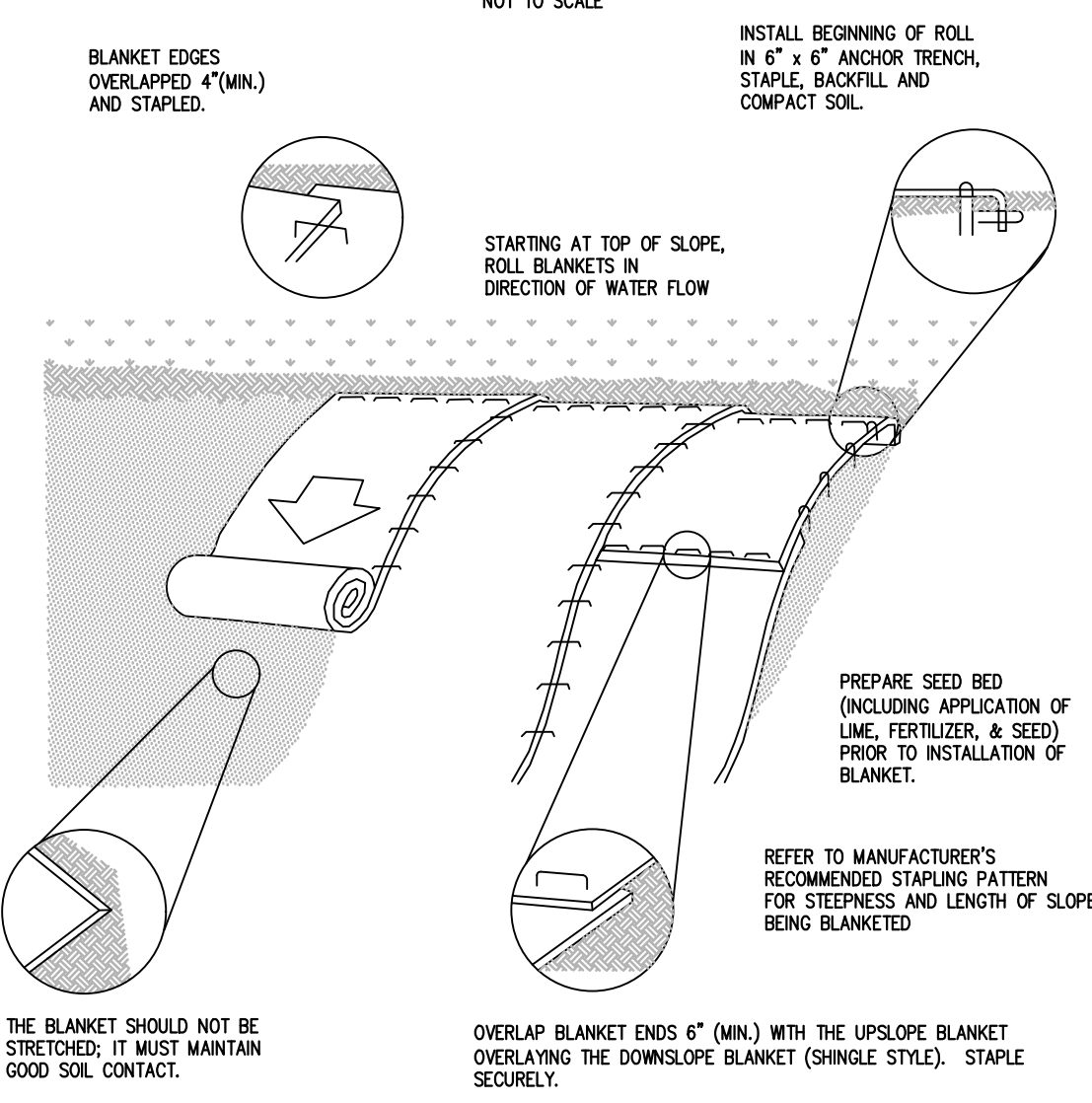
TABLE 11.5
Recommended Seed Mixtures for Stabilizing Disturbed Areas

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
Variable drainage	1 plus	3, 5, 7, or 12 ¹
Gullies and Eroded Areas		
Erosion Control Facilities (BMPs)		
Sod waterways, spillways, frequent water flow areas	1 plus	2, 3, or 4
Drainage ditches	1 plus	2, 3, or 4
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	1 plus	5 or 7
Mowed areas	1 plus	3 or 13
Highways²		
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		
Sanitary Landfills	1 plus	3, 5, 7, 11 ¹ , or 12 ¹
Surface mines		
Spills, mine wastes, fly ash, slag, settling basin	1 plus	3, 4, 5, 7, 8, 9, 11 ¹ , or 12 ¹
Residues and other severely disturbed areas (time to soil test)	1 plus	3 or 13
Severely disturbed areas for grazing/hay		

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.

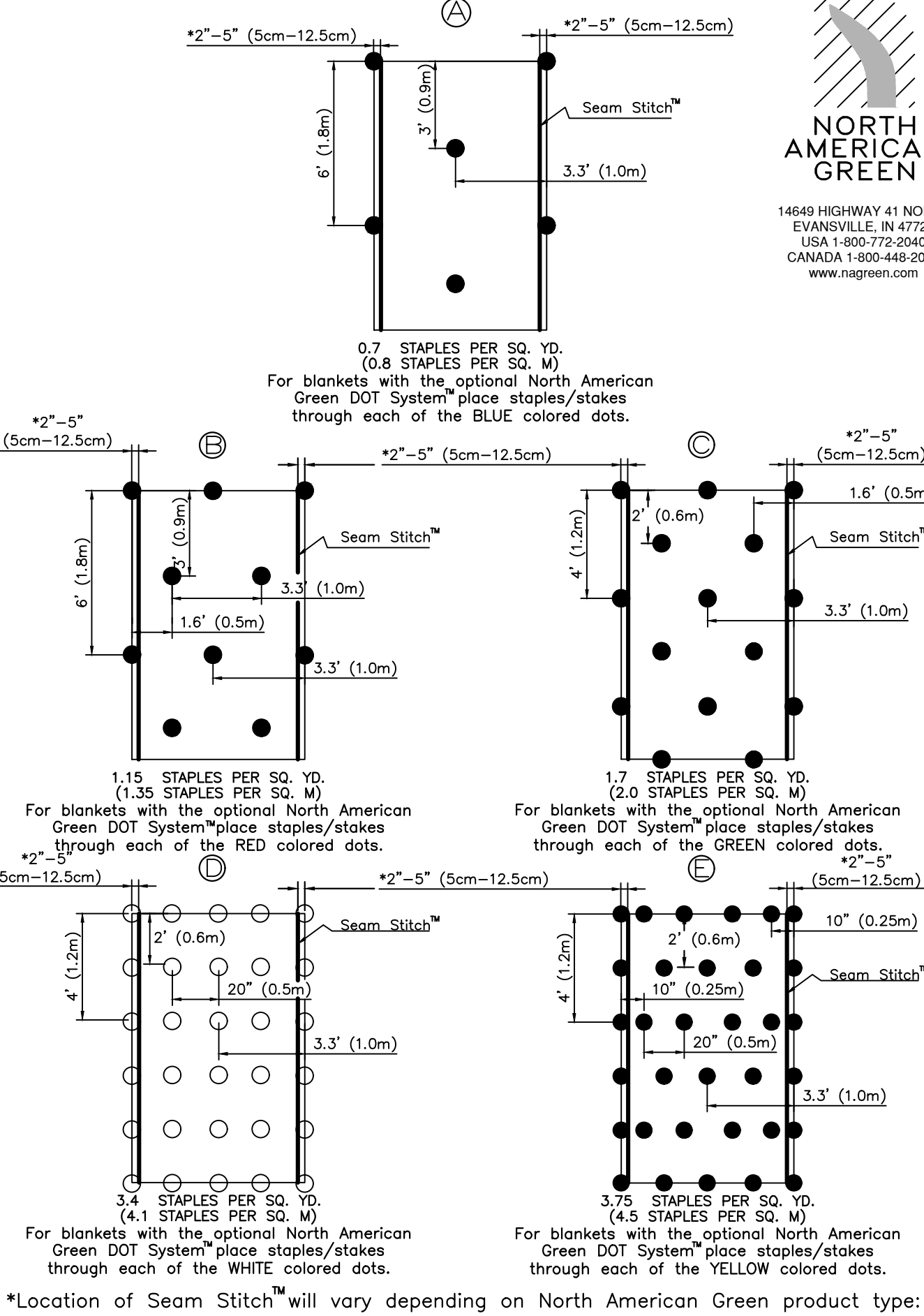
Standard Construction Detail # 11-1 EROSION CONTROL BLANKET INSTALLATION



General Notes:

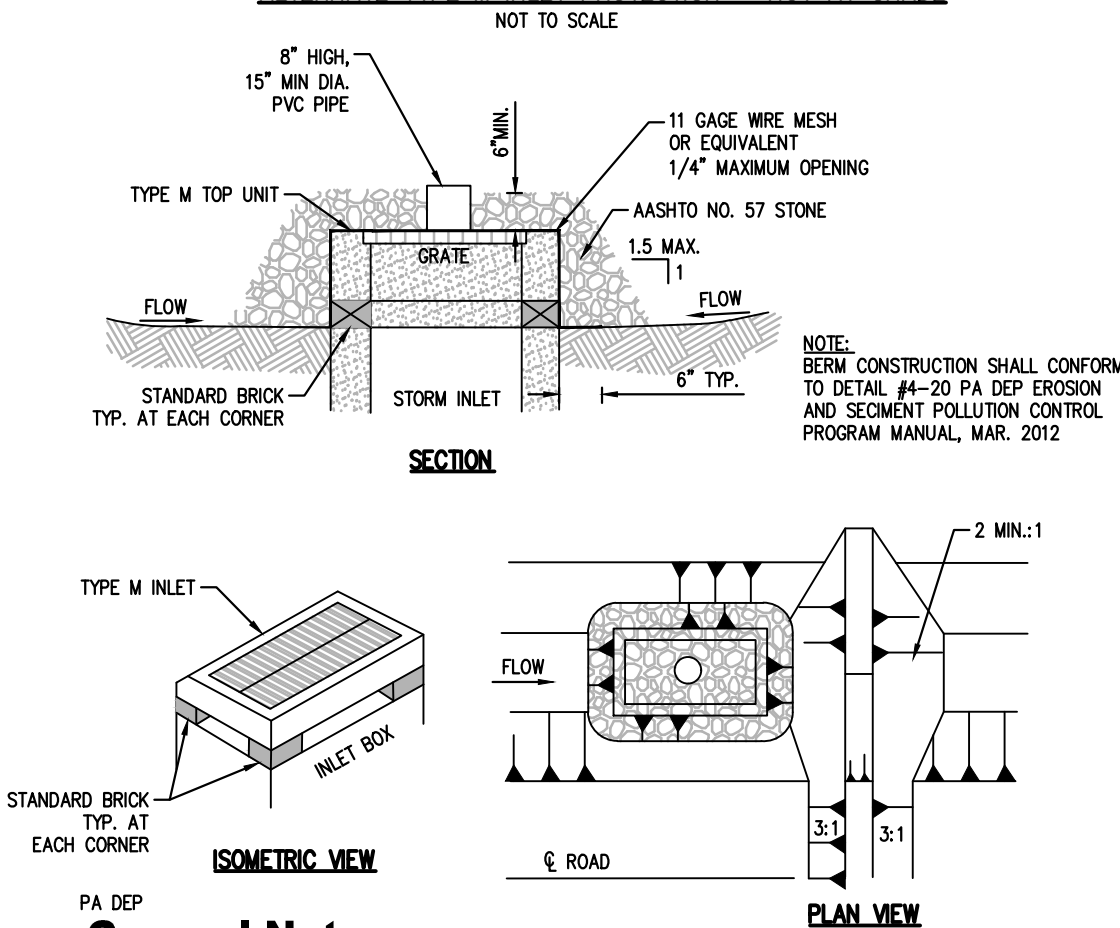
1. SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PRIOR TO INSTALLING THE BLANKET.
2. PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.
3. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLUMPS, STICKS, AND GRASS.
4. BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND 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 RAINFALL EVENT UNTIL PERMANENT 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



*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

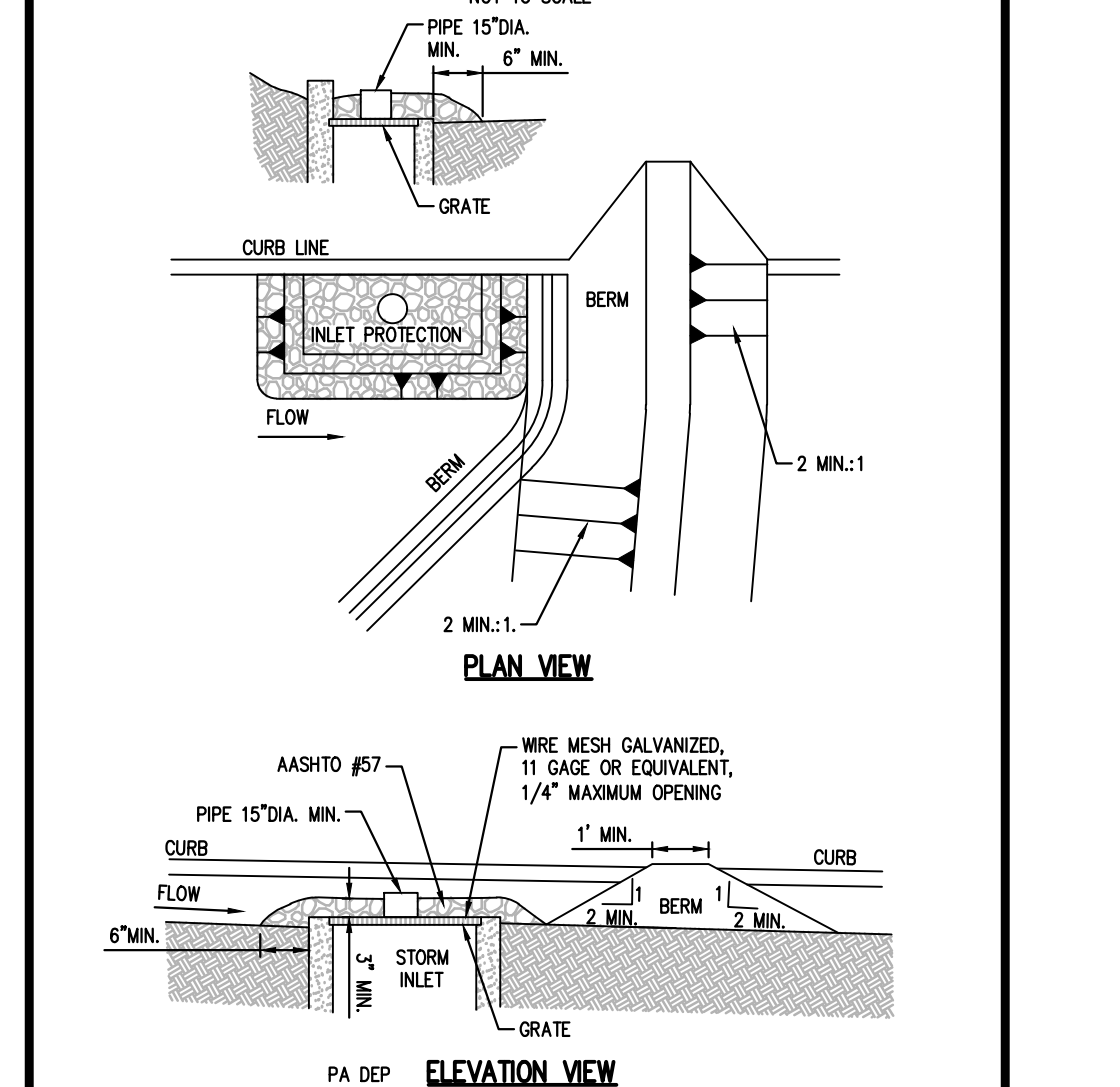


General Notes:

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\"/>

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\"/>

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

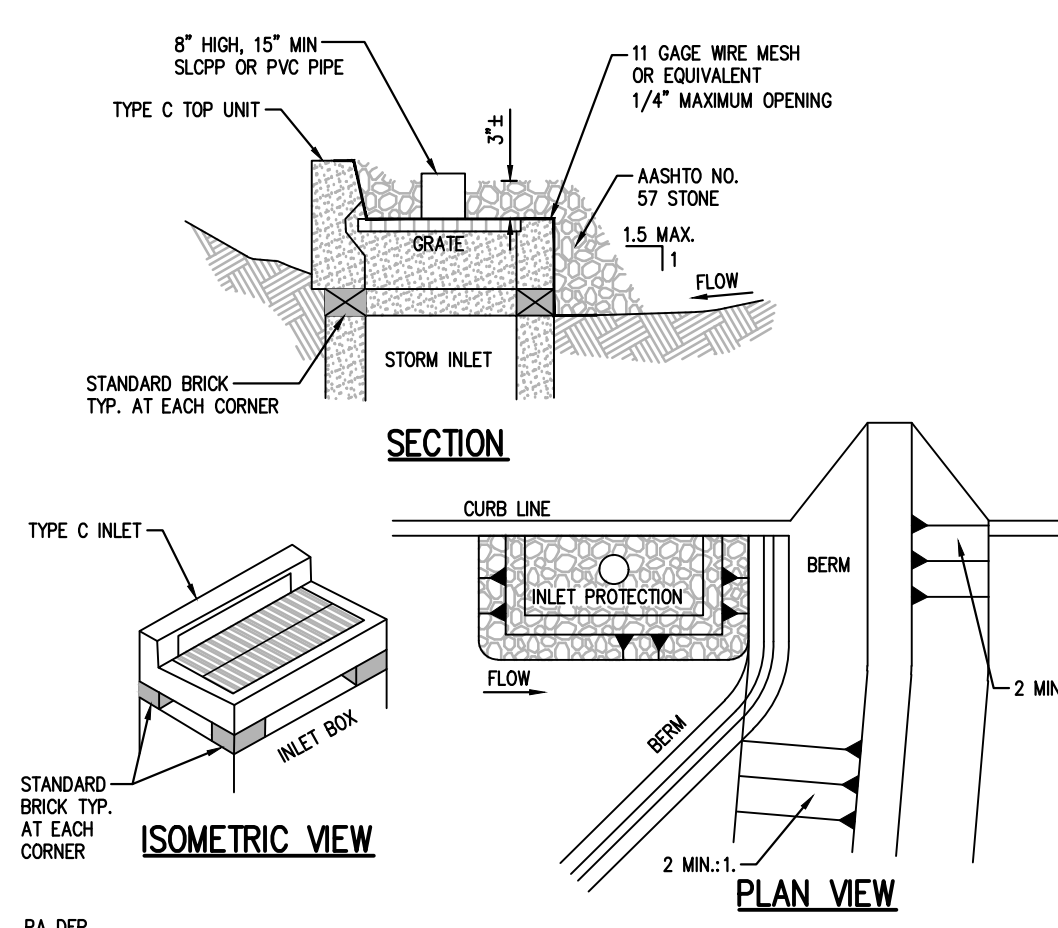


General Notes:

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 SURFACE RECEIVES FINAL CUT.
3. STONE INLET PROTECTION AND BERM FOR A TYPE C INLET CAN BE USED IN ONE ACRE MAXIMUM DRAINAGE AREA WITH 15\"/>

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\"/>

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

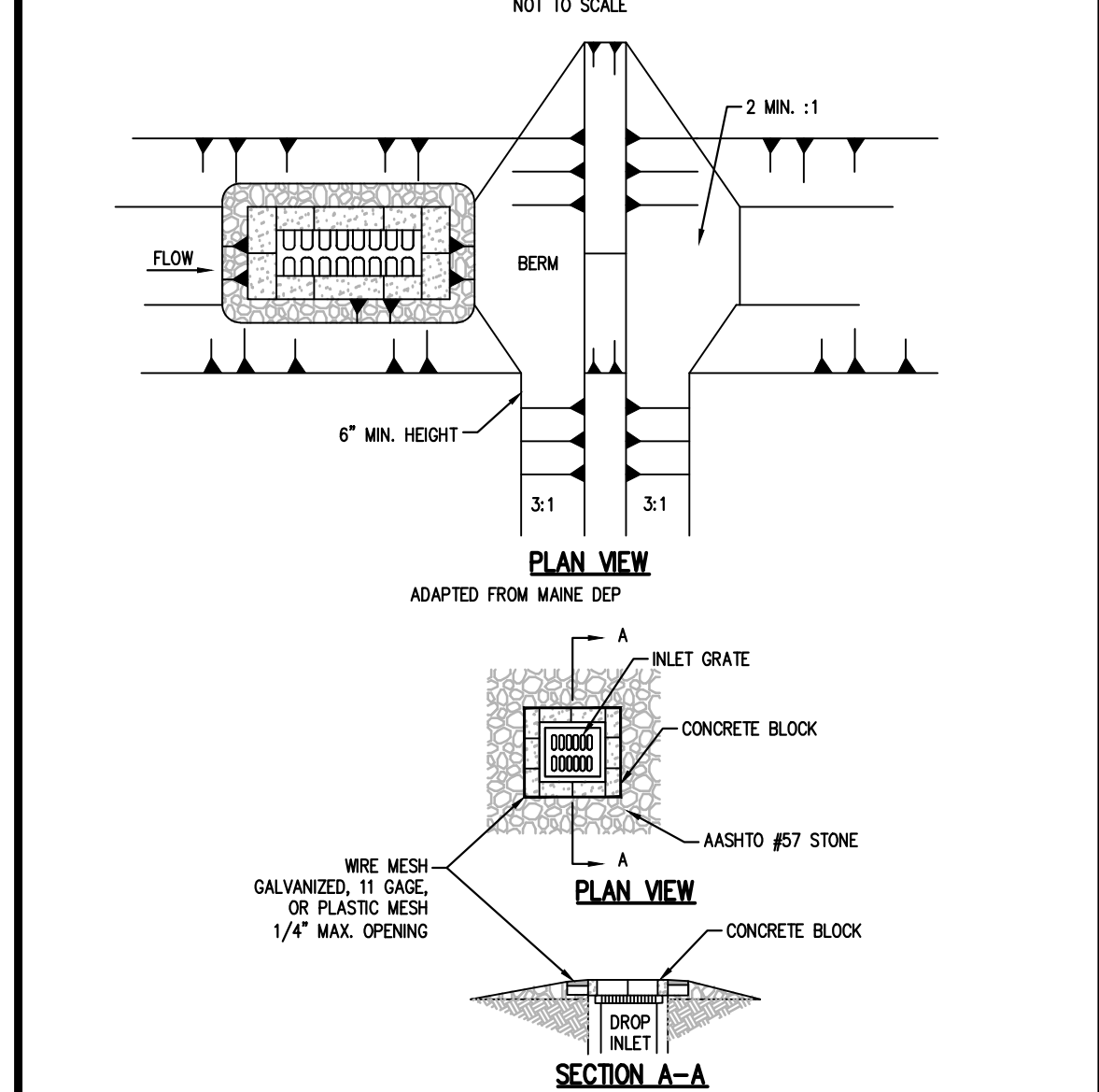


General Notes:

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\"/>

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\"/>

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

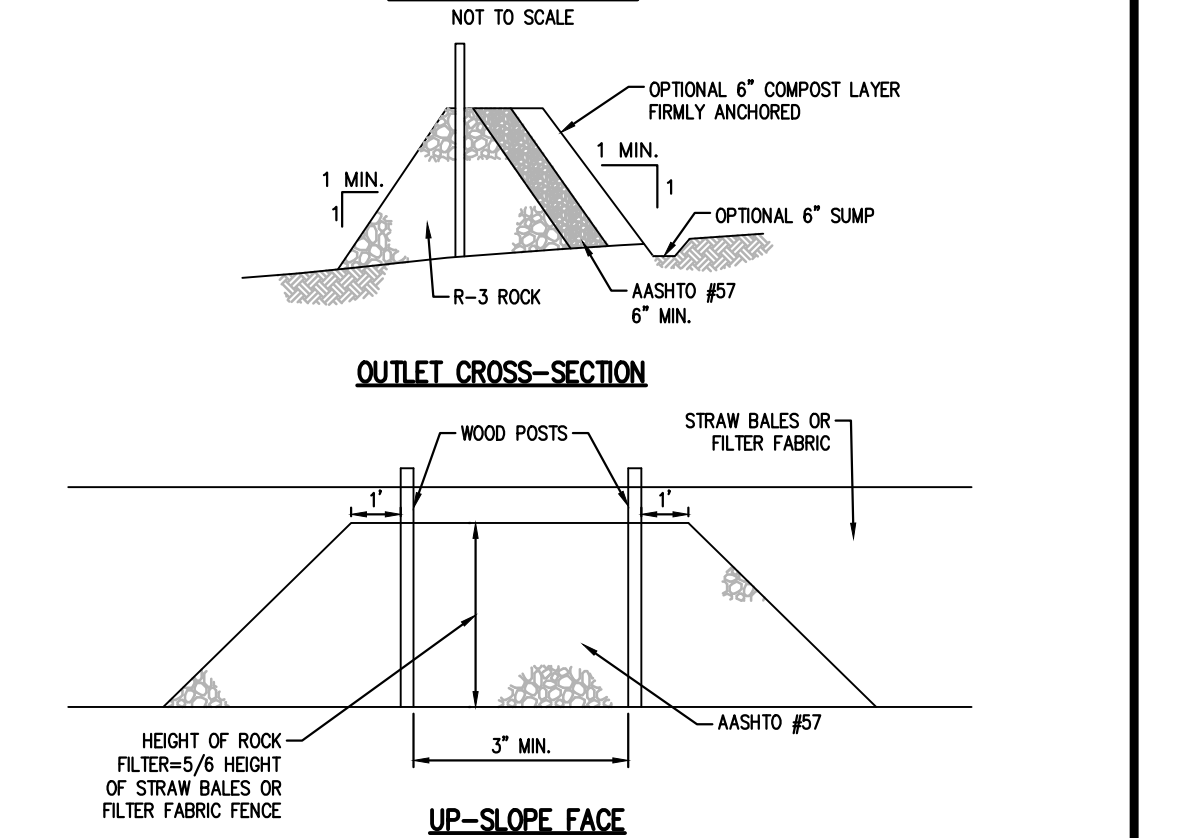


General Notes:

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 CHANNELS 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 PONDING 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 HO 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\"/>

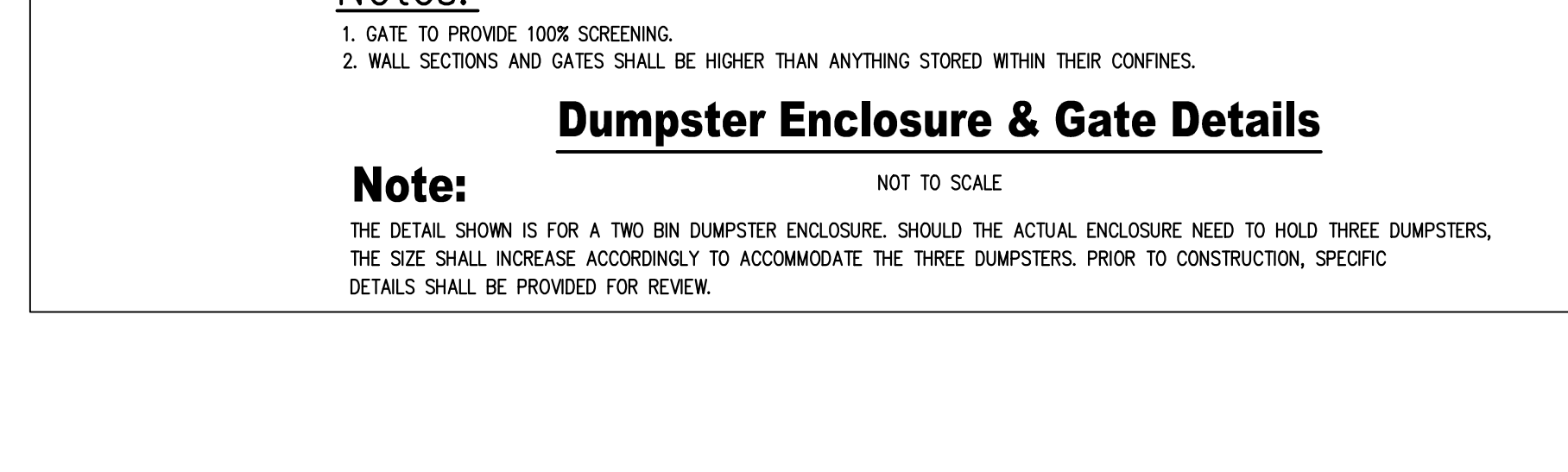
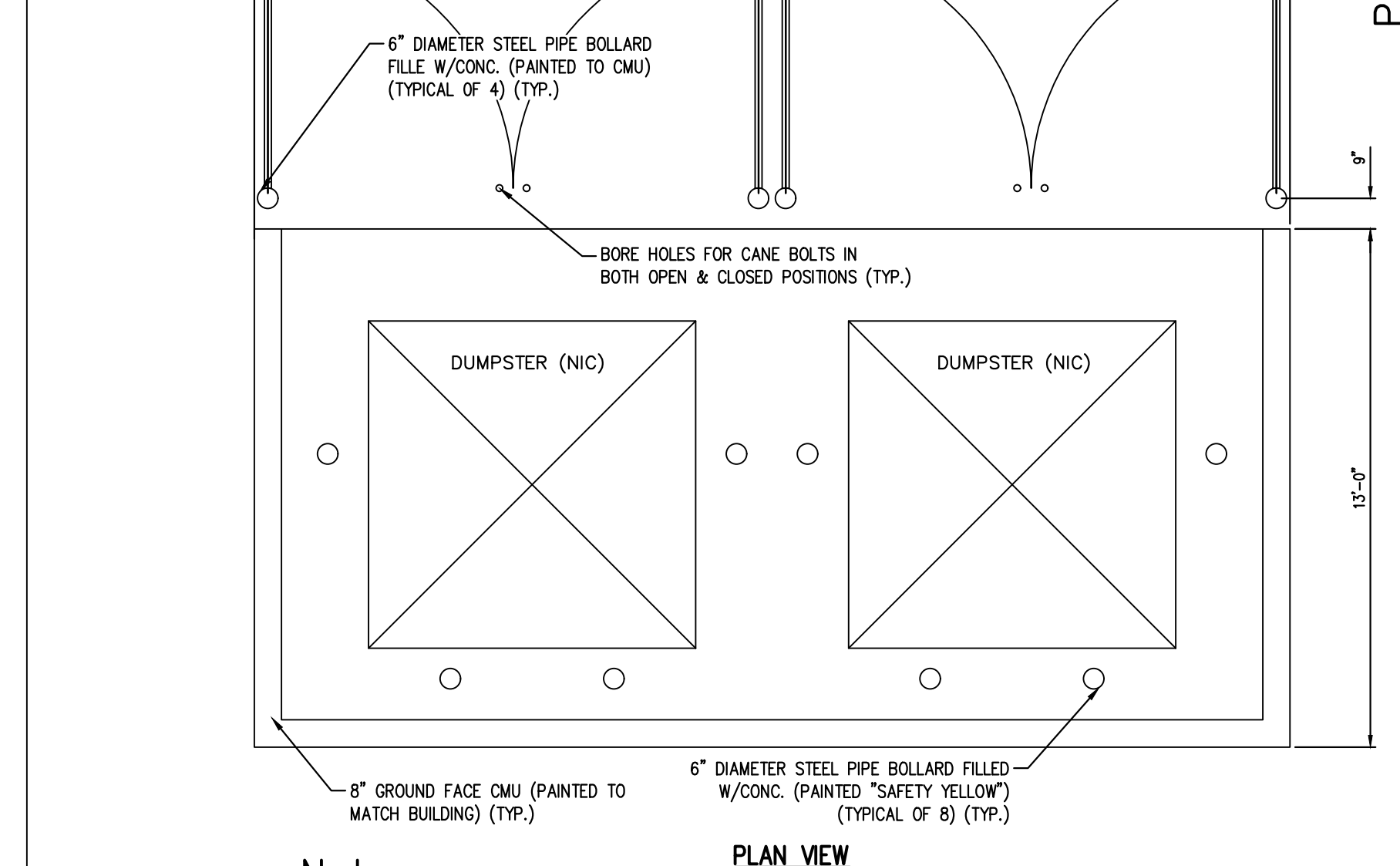
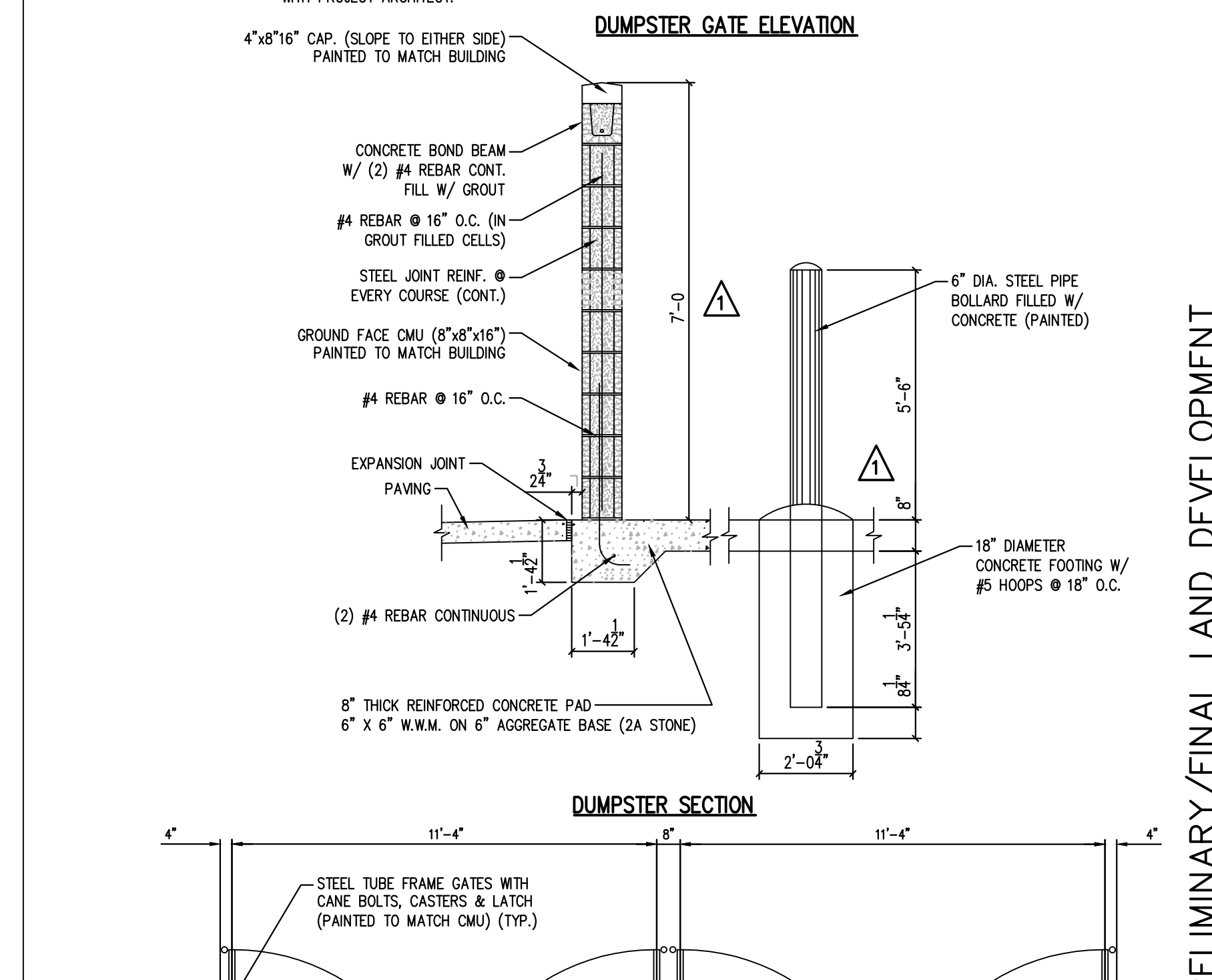
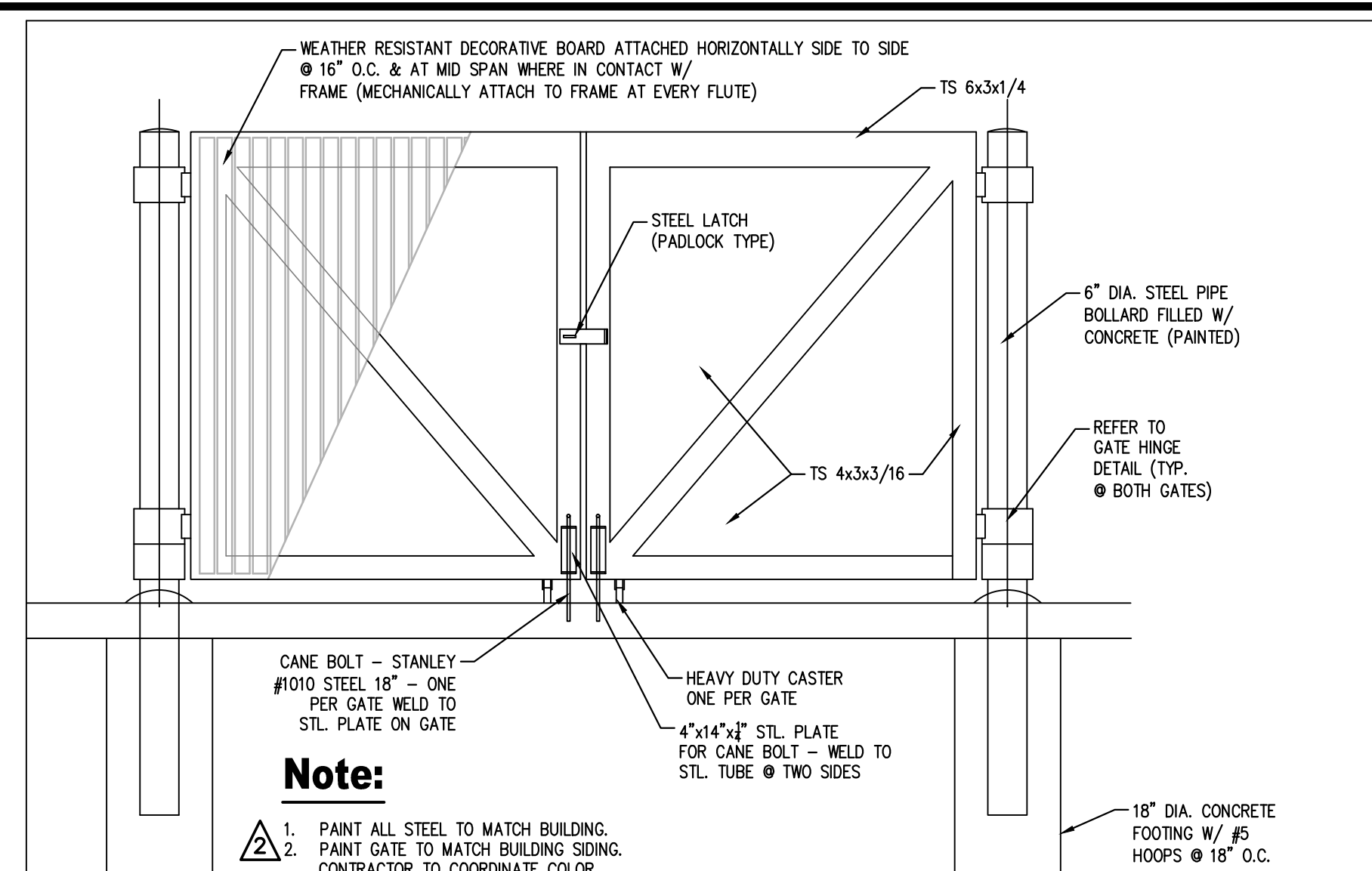
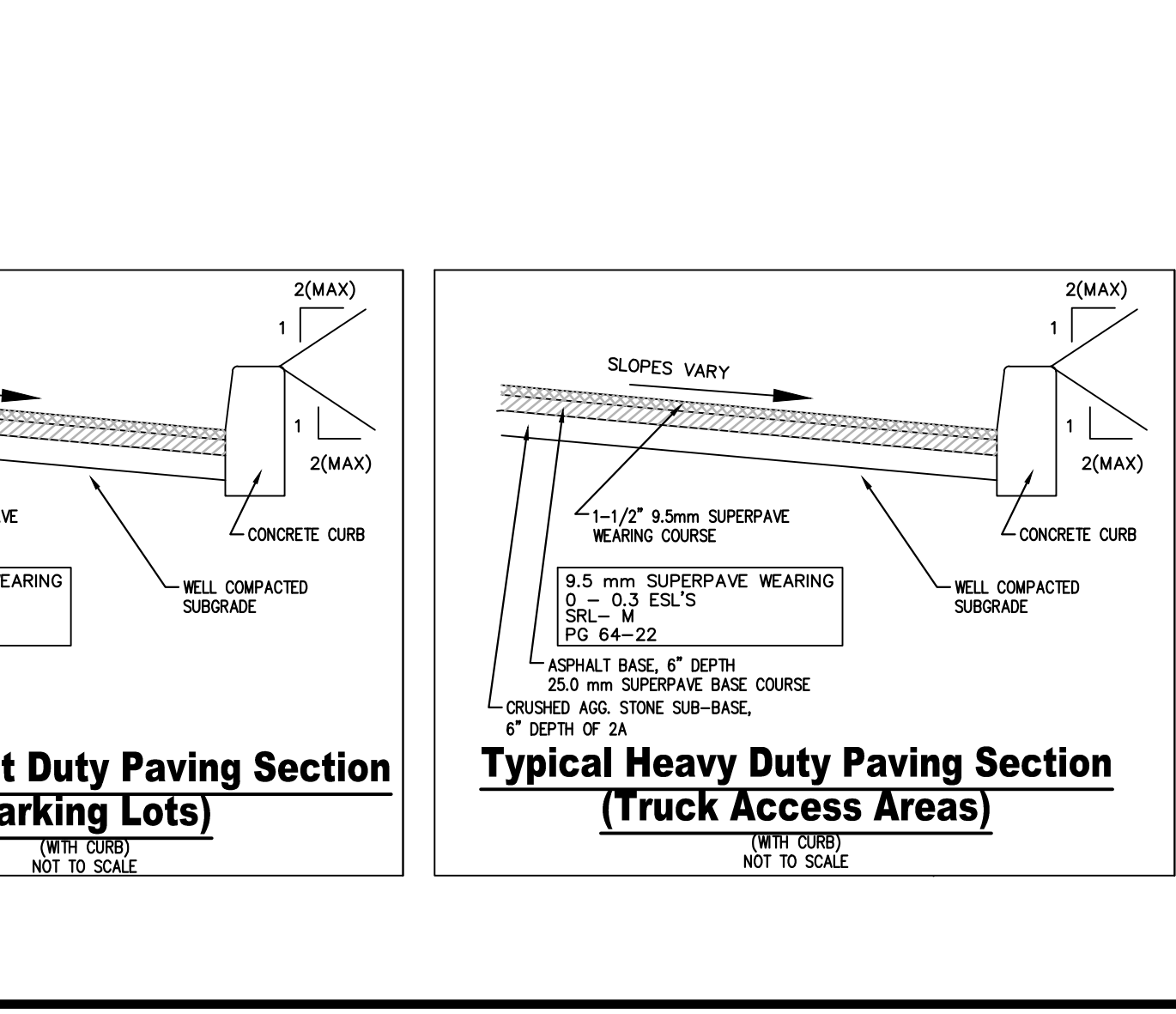
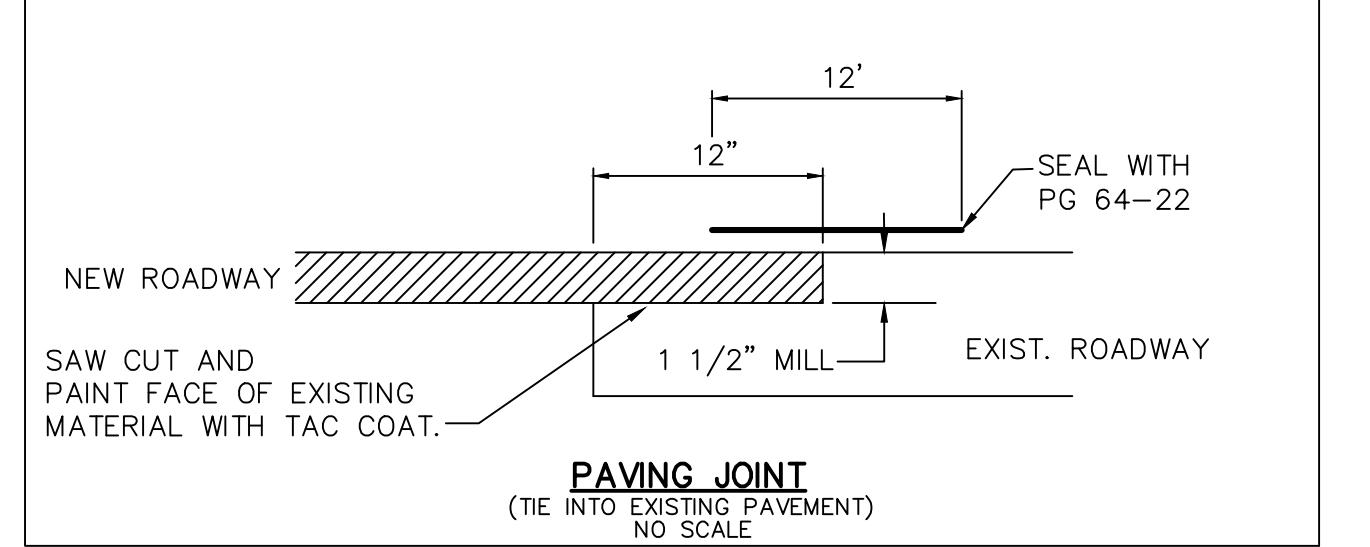
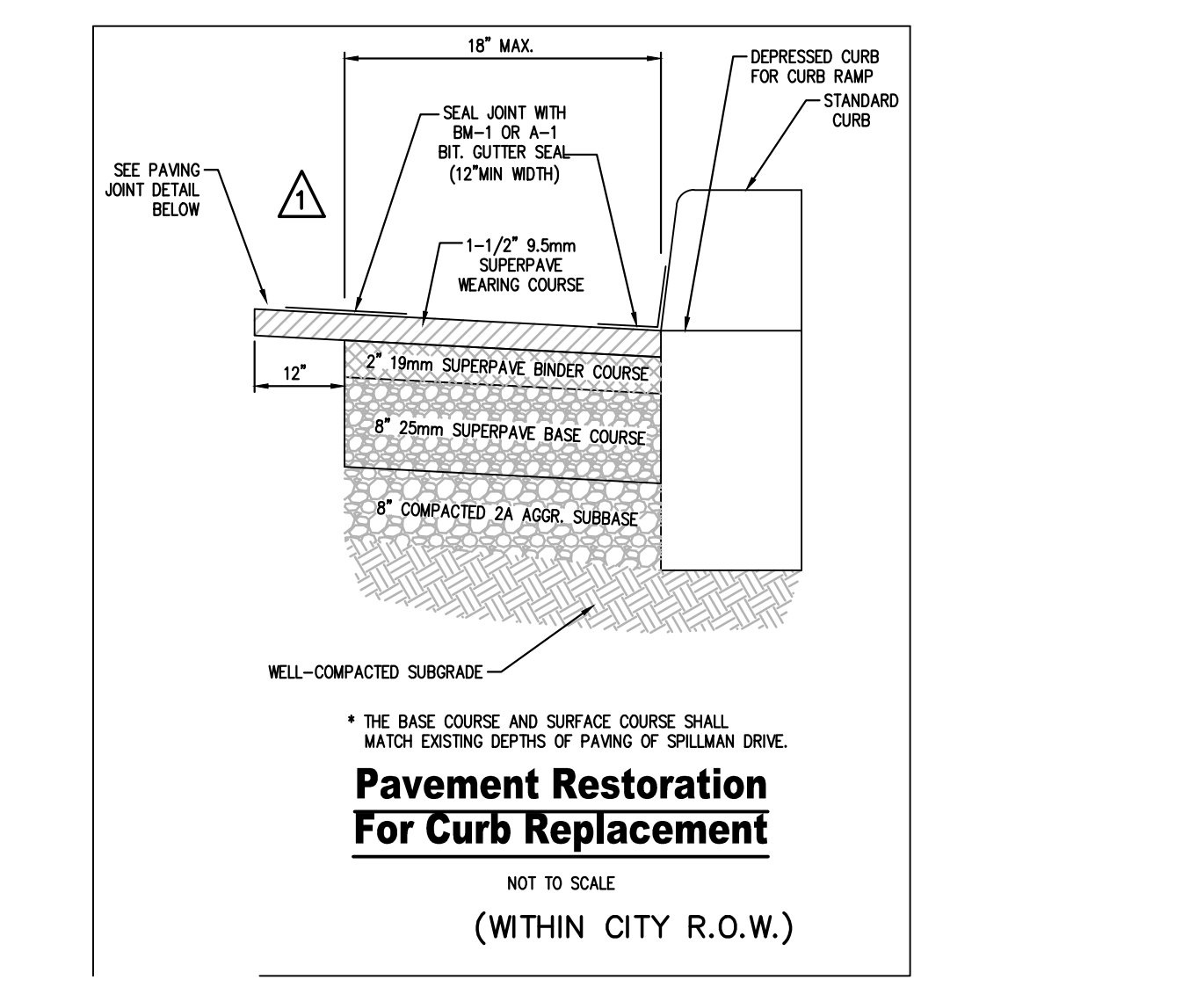
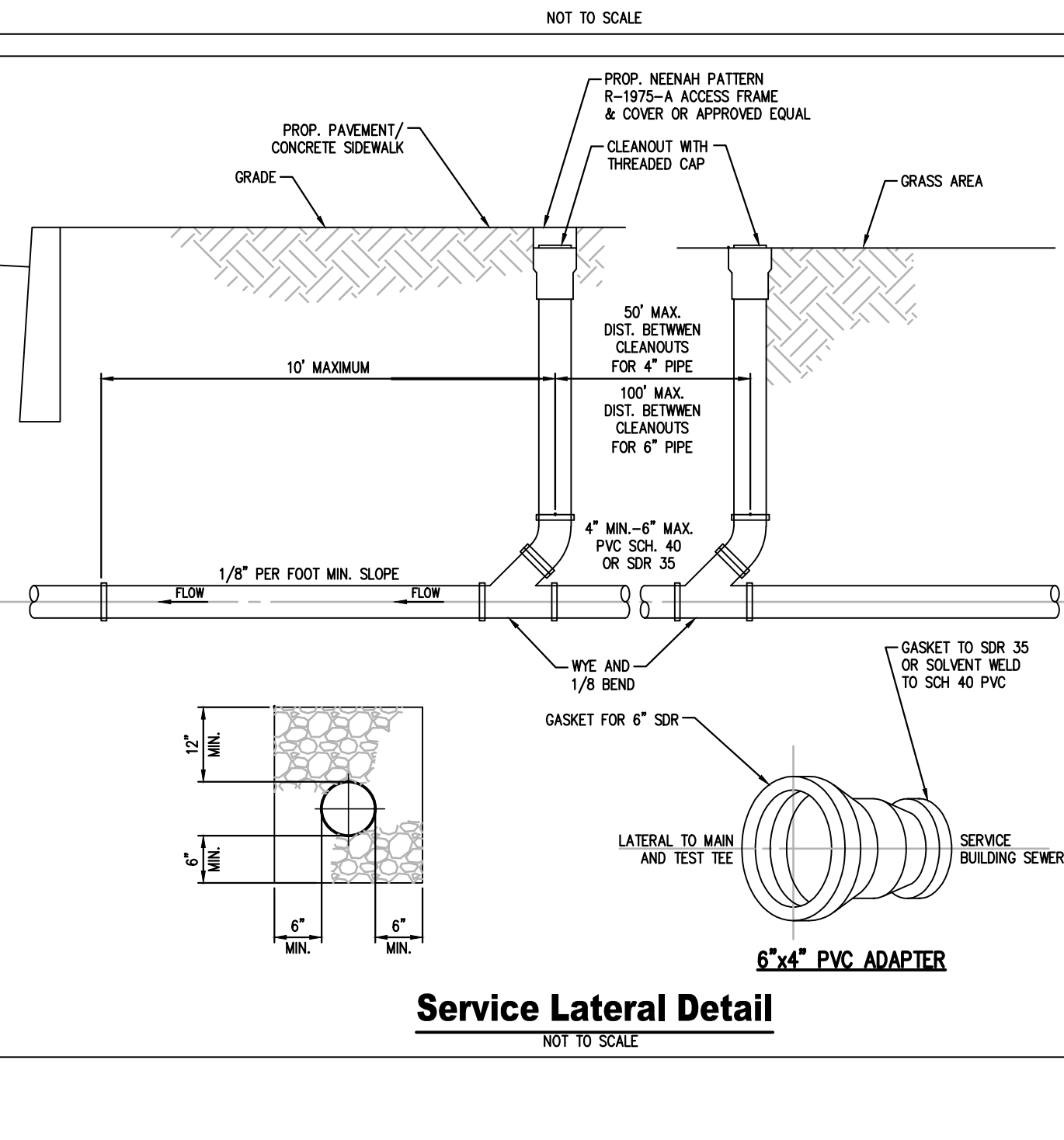
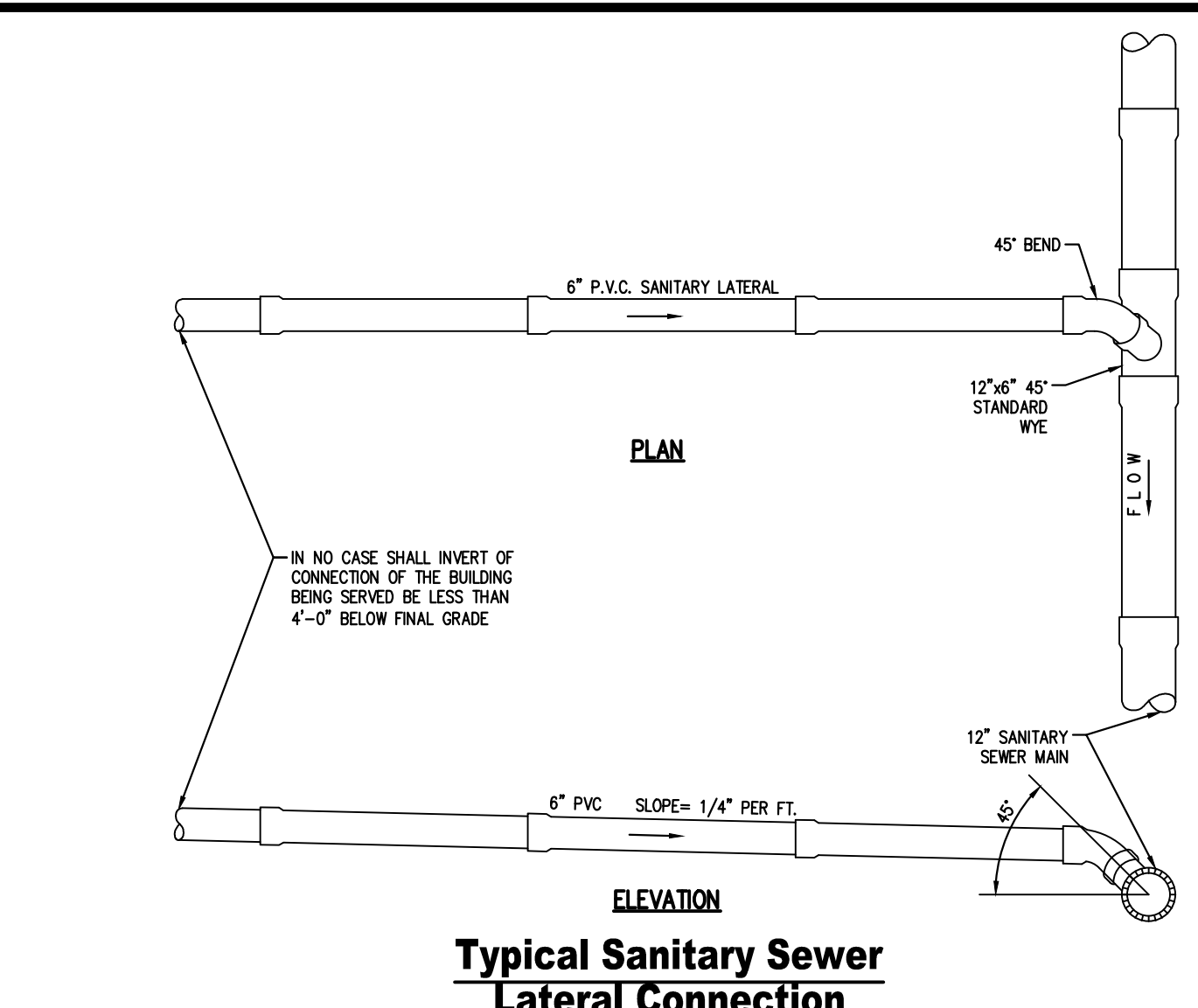
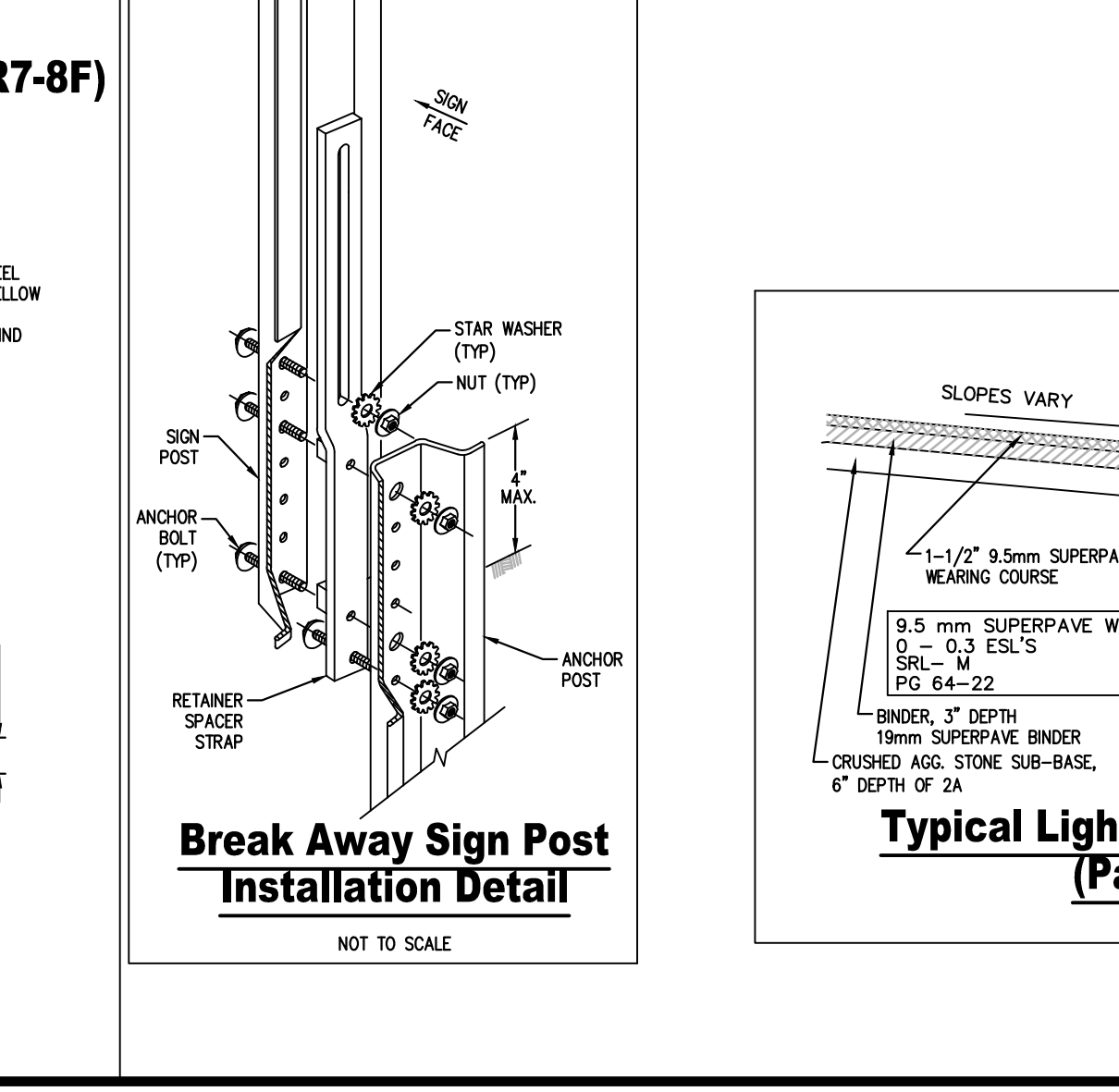
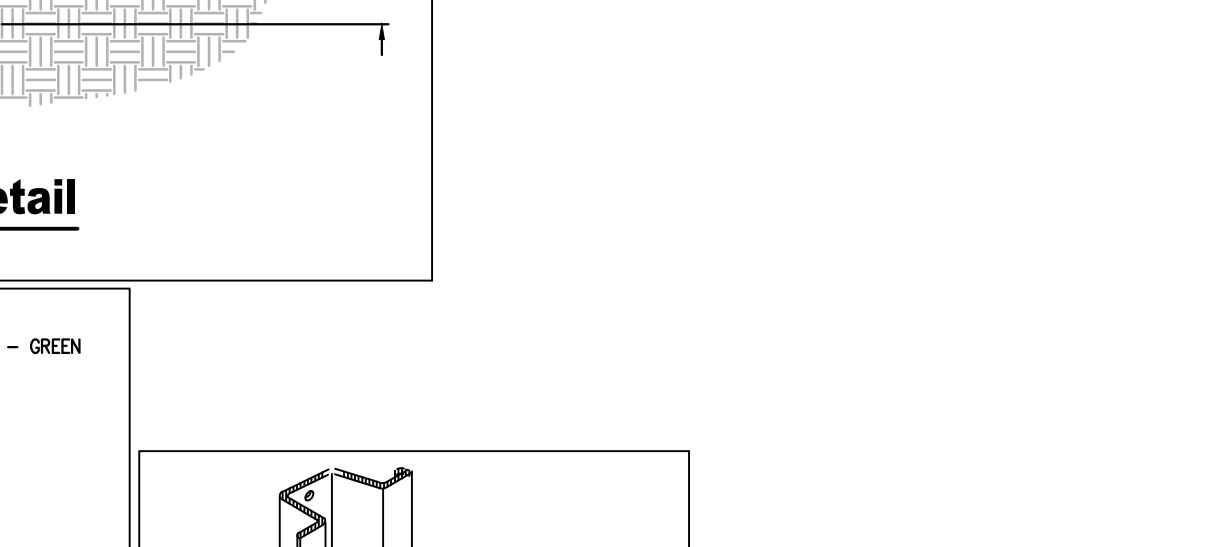
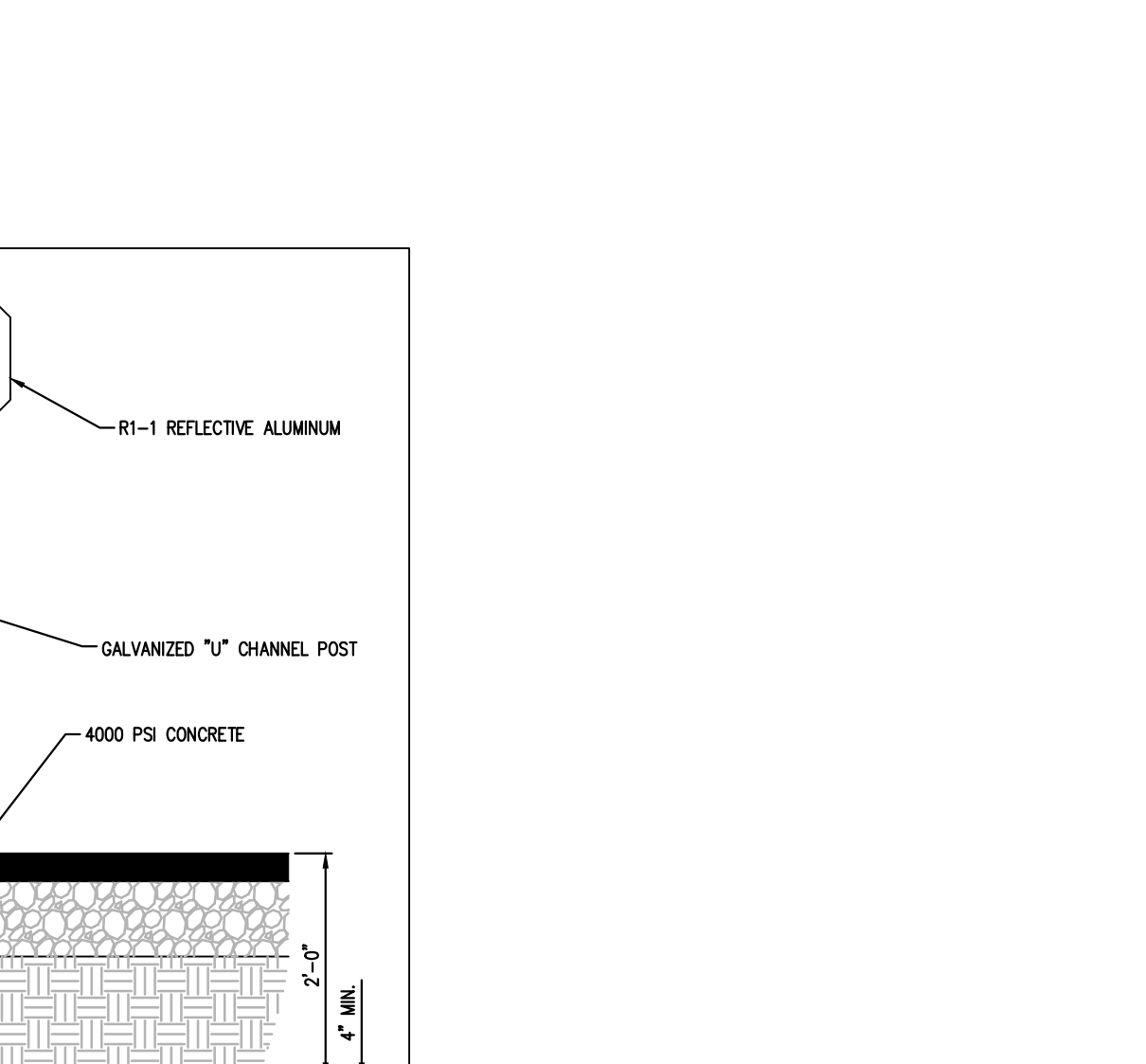
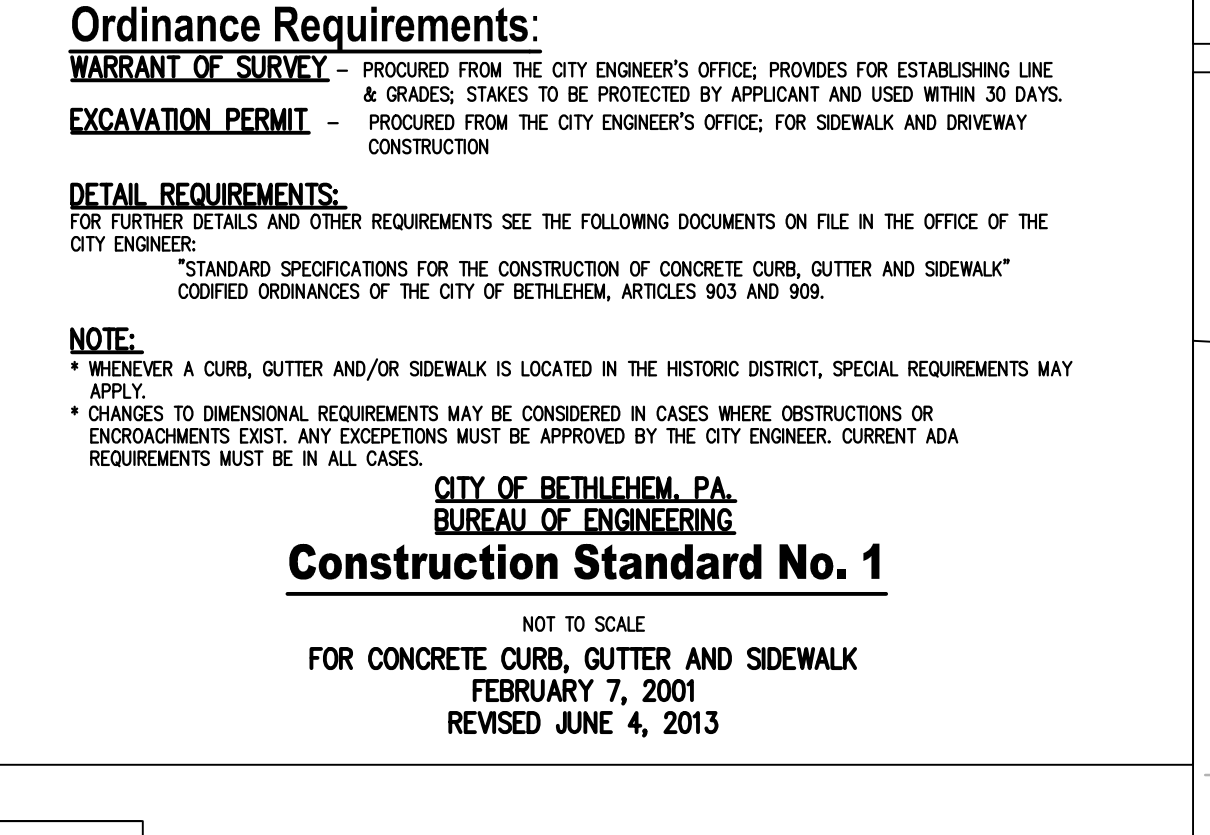
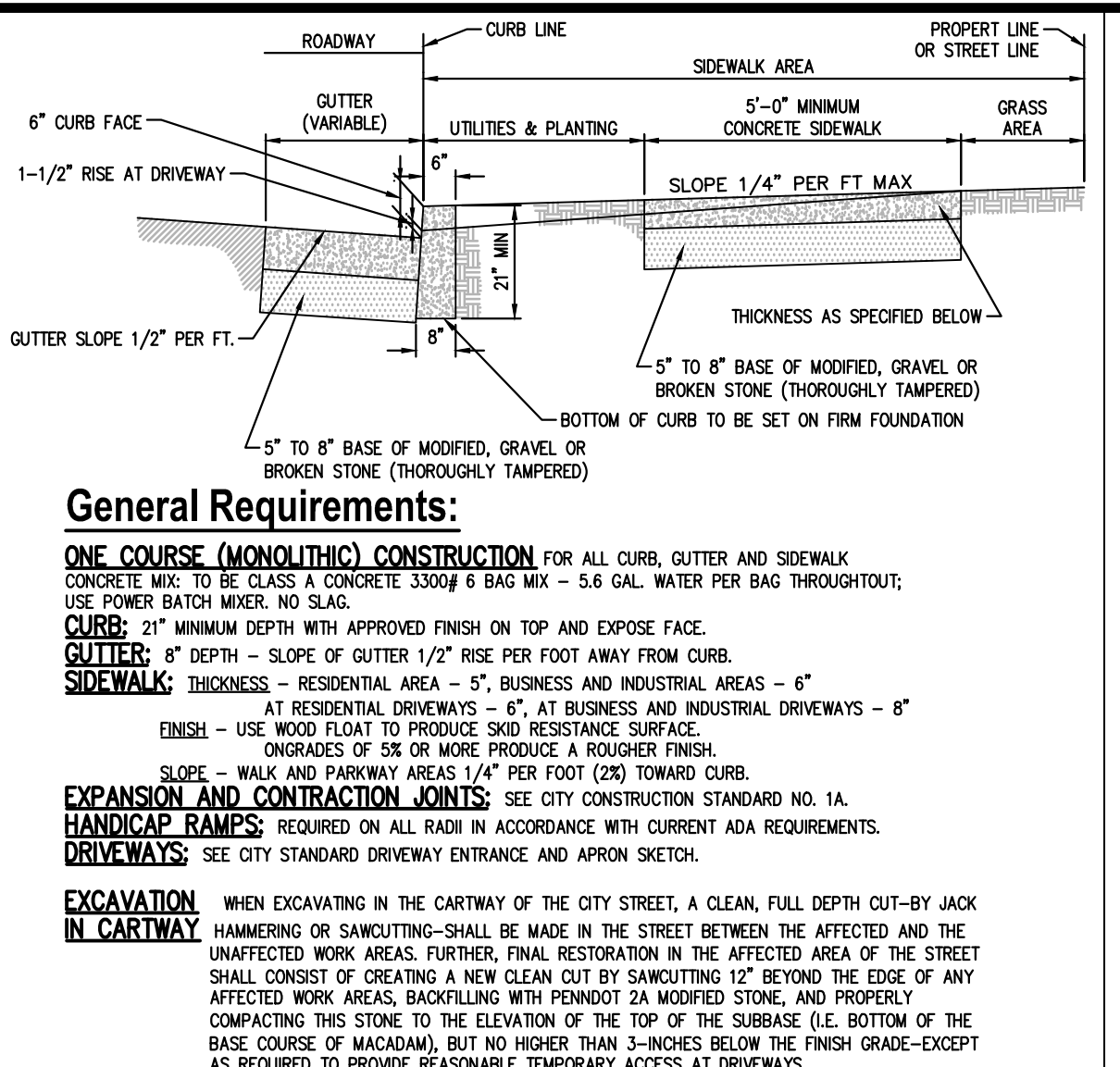
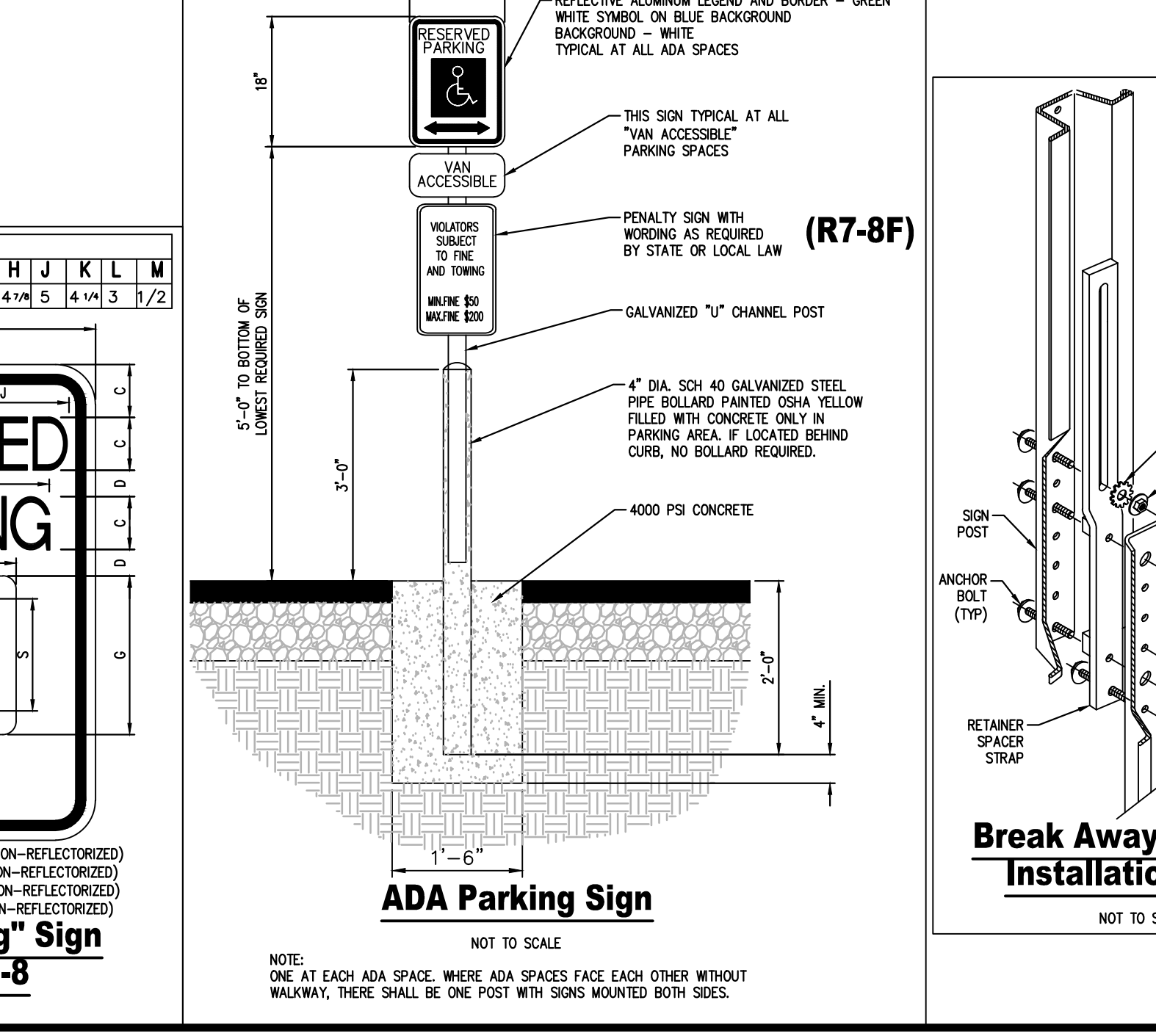
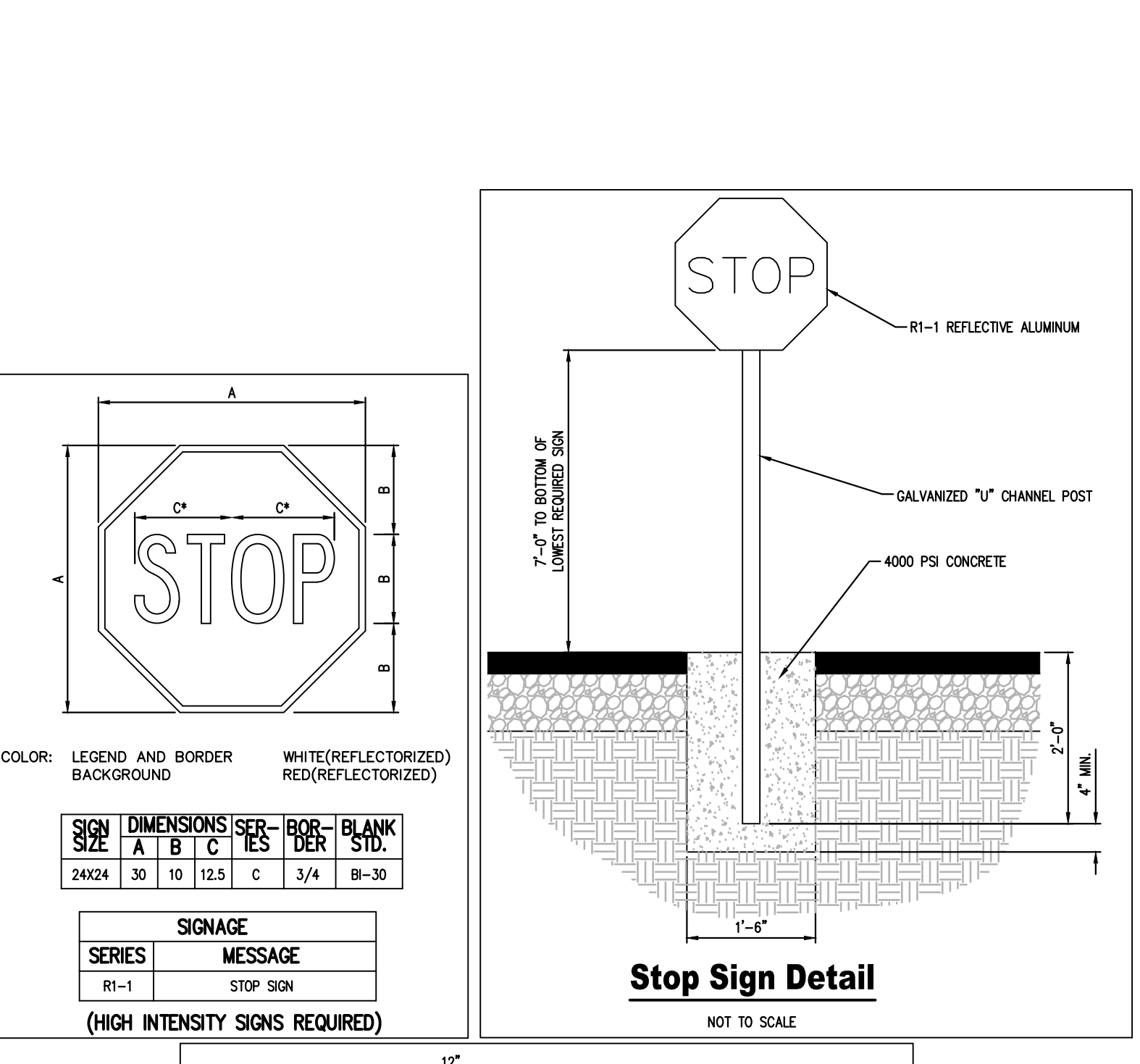
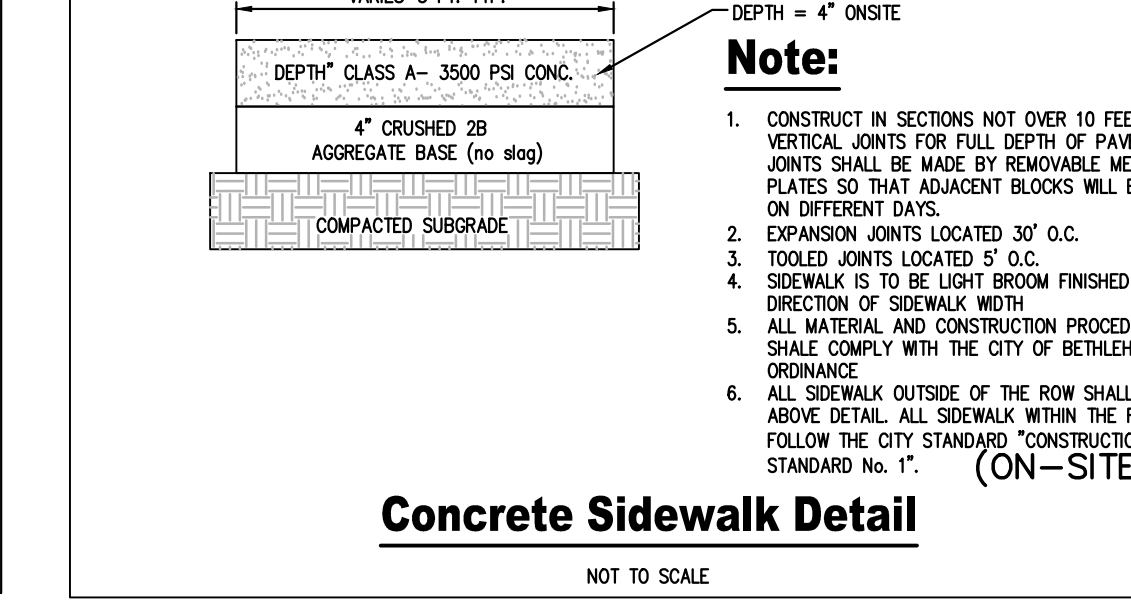
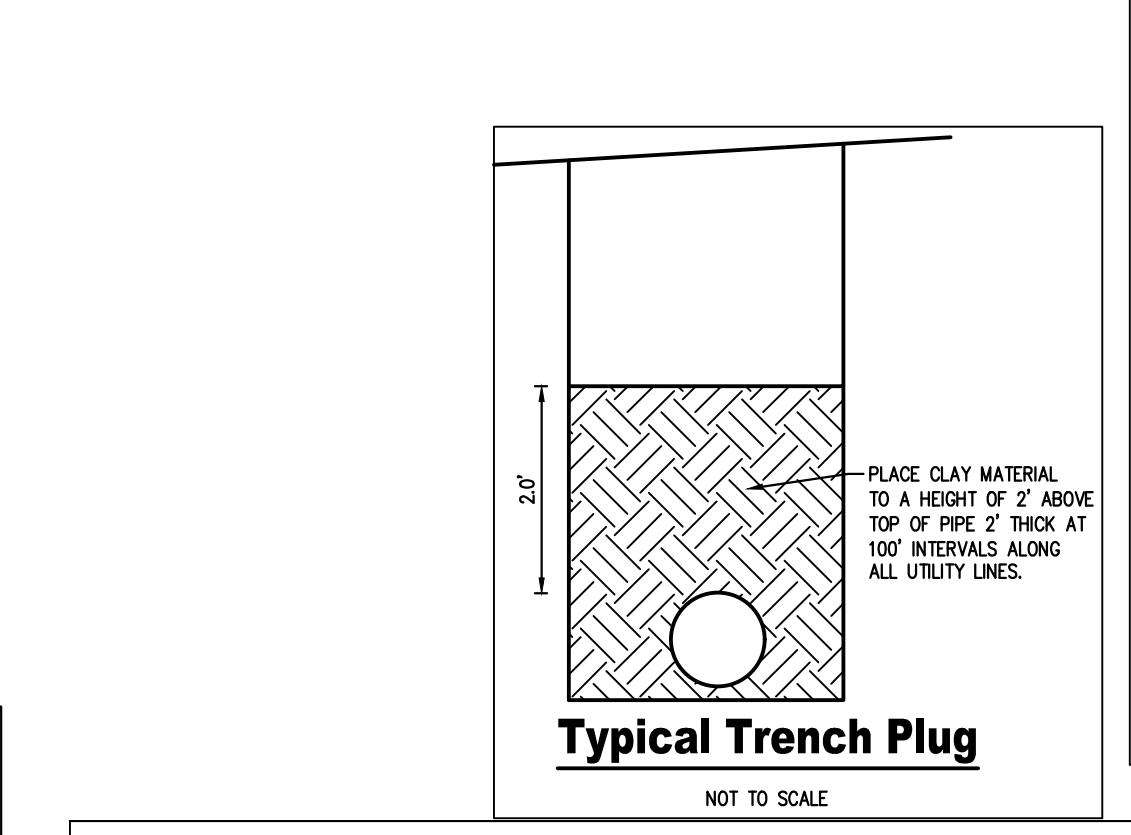
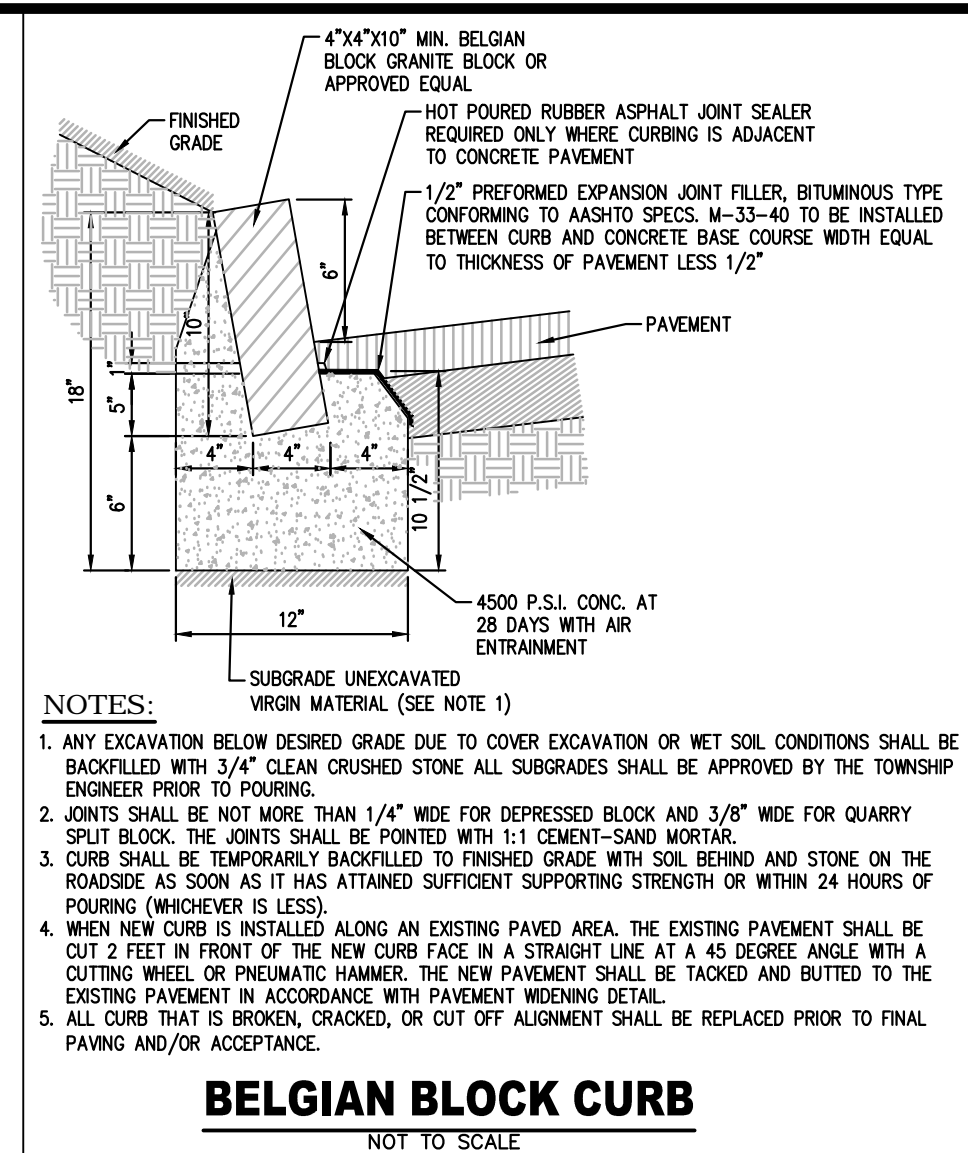
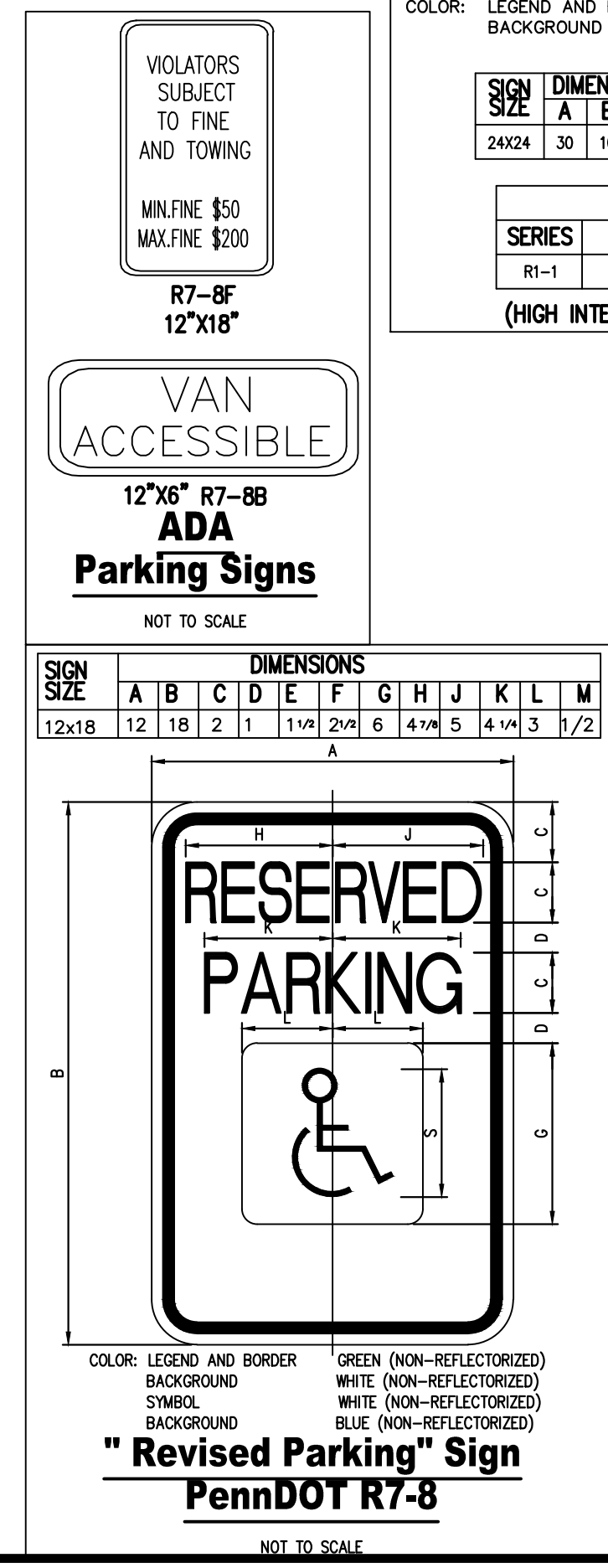
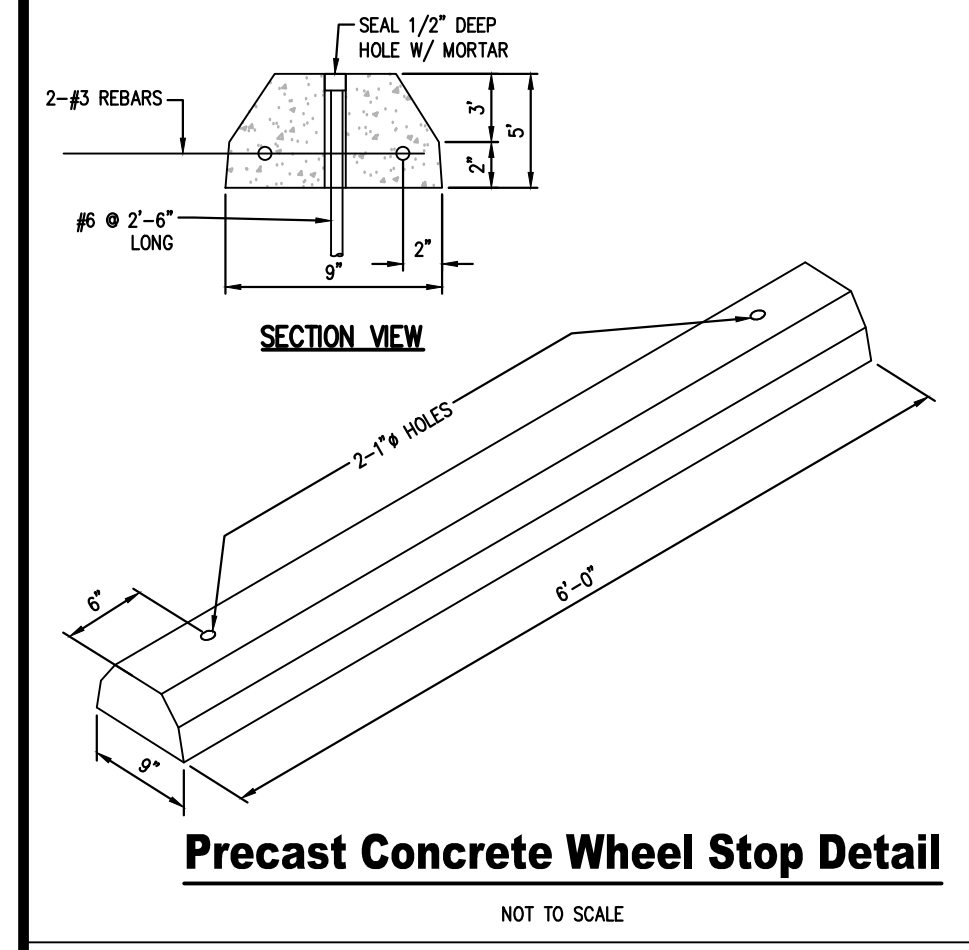
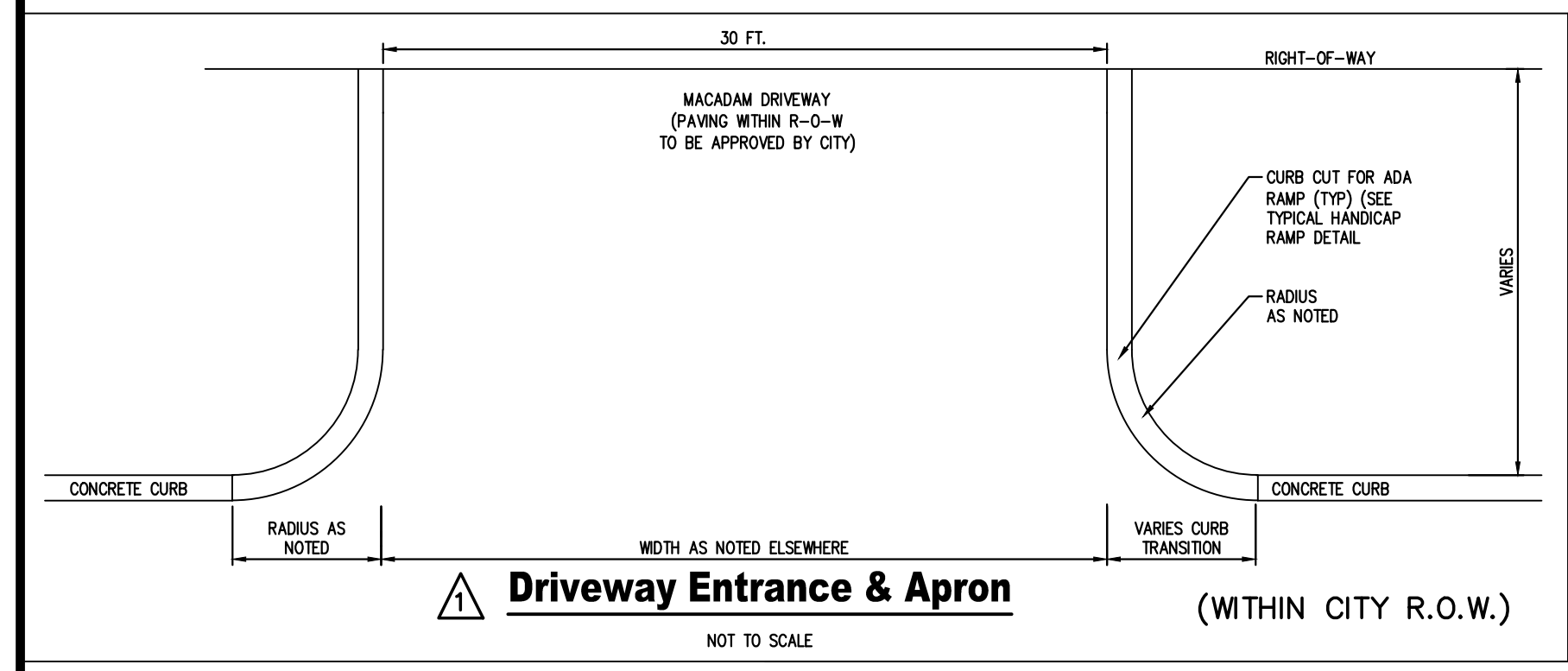
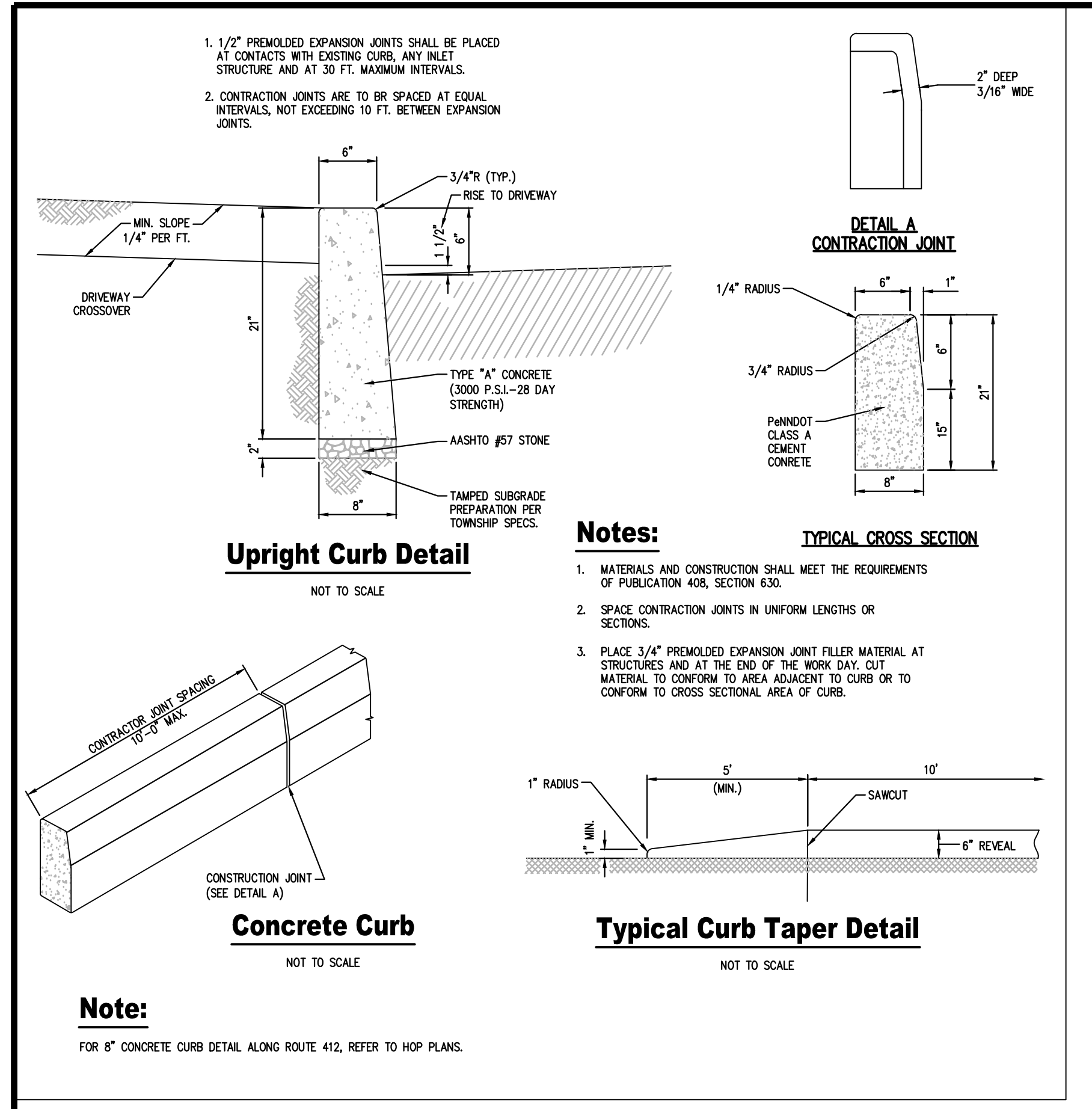
Standard Construction Detail # 4-6 ROCK FILTER OUTLET



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. MOVED OR CLOGGED CONVEYORS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.
2. SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/3 THE HEIGHT OF THE OUTLET.

<div> <div></div> <div>PRELIMINARY/FINAL LAND DEVELOPMENT</div> </div>	DATE: 6/06/22	CHECKED BY: JAB	<div> <div></div> <div>CITY OF BETHLEHEM NORTHAMPTON COUNTY PENNSYLVANIA</div> </div>	<div> <div></div> <div>LVP VII – LOT 90 1010 HARVARD AVENUE</div> </div>	<div> <div></div> <div>Bethlehem Office 252 Brodhead Road, Suite 100 Bethlehem, PA 18017-8944</div> </div>	<div> <div></div> <div>HanoverEngineering</div> </div>	<div> <div></div> <div>Bethlehem PA 18017-8944</div> </div>	<div> <div></div> <div>DATE: 6/06/22</div> </div>	<div> <div></div> <div>SCALE: AS NOTED</div> </div>	<div> <div></div> <div>DATE: 6-05-22</div> </div>	<div> </div>
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PRELIMINARY/FINAL LAND DEVELOPMENT

CONSTRUCTION DETAIL PLAN

LVP VII - LOT 90

1010 HARVARD AVENUE

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

NO. 1

DATE 6/06/22

SCALE AS NOTED

PER CITY COMMENT

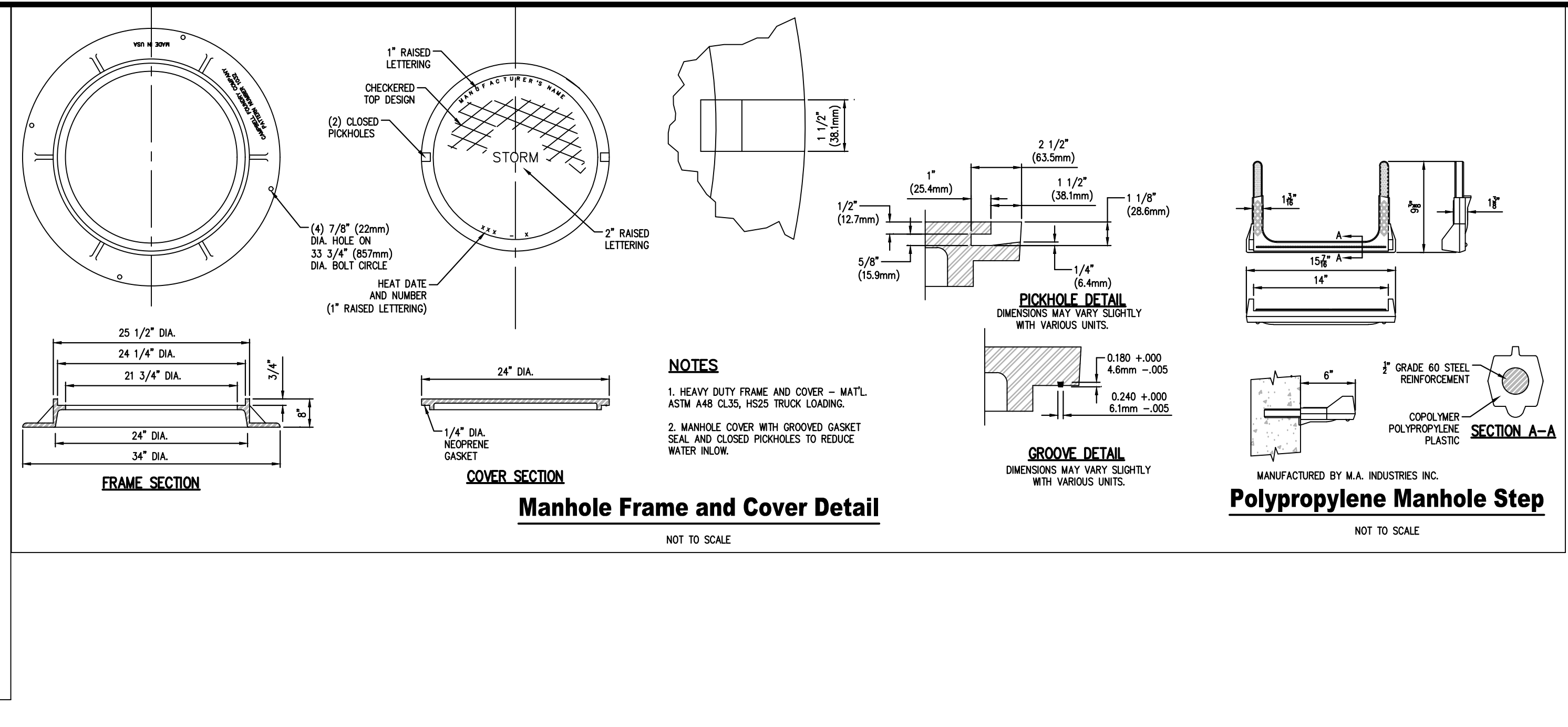
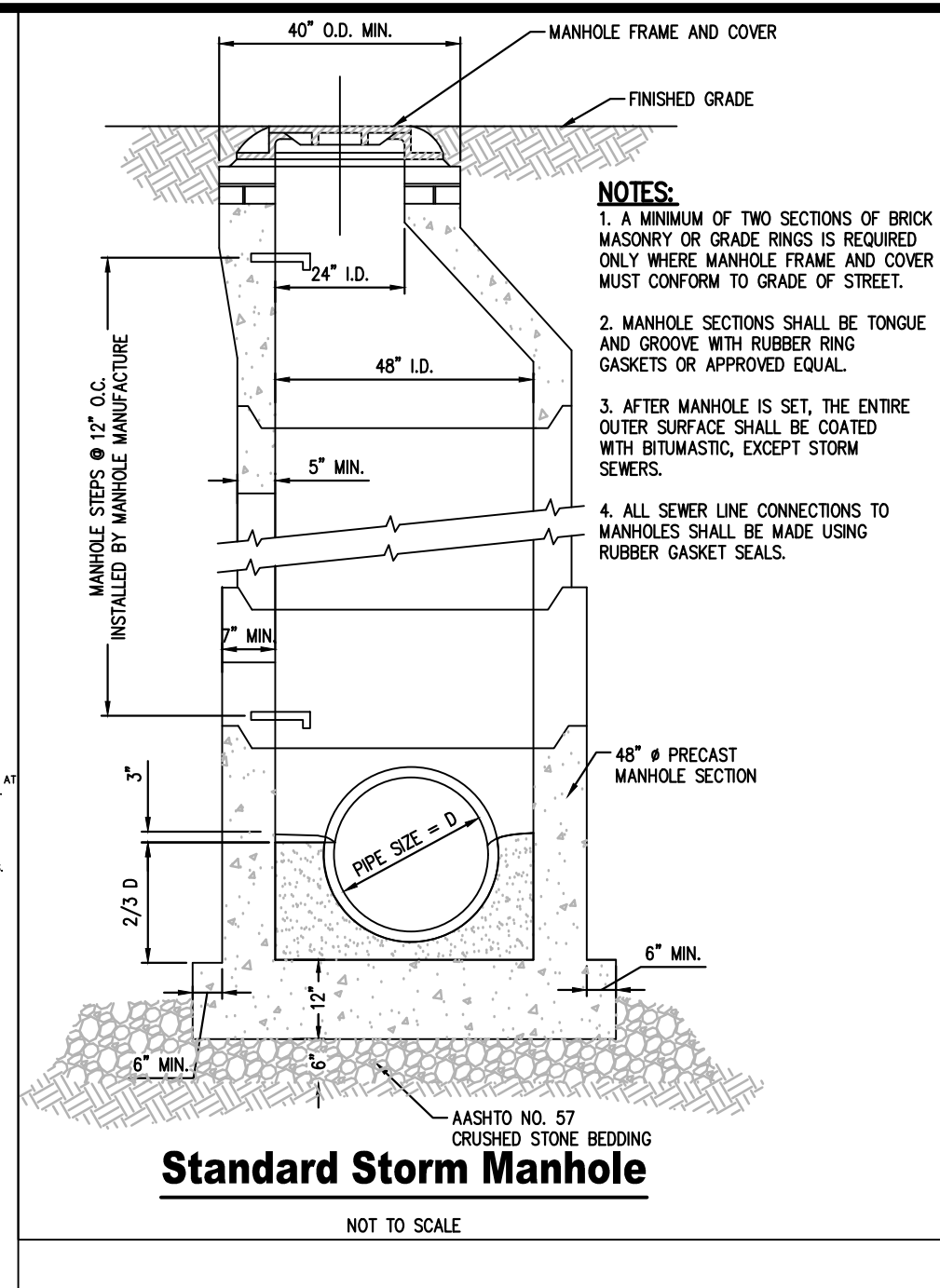
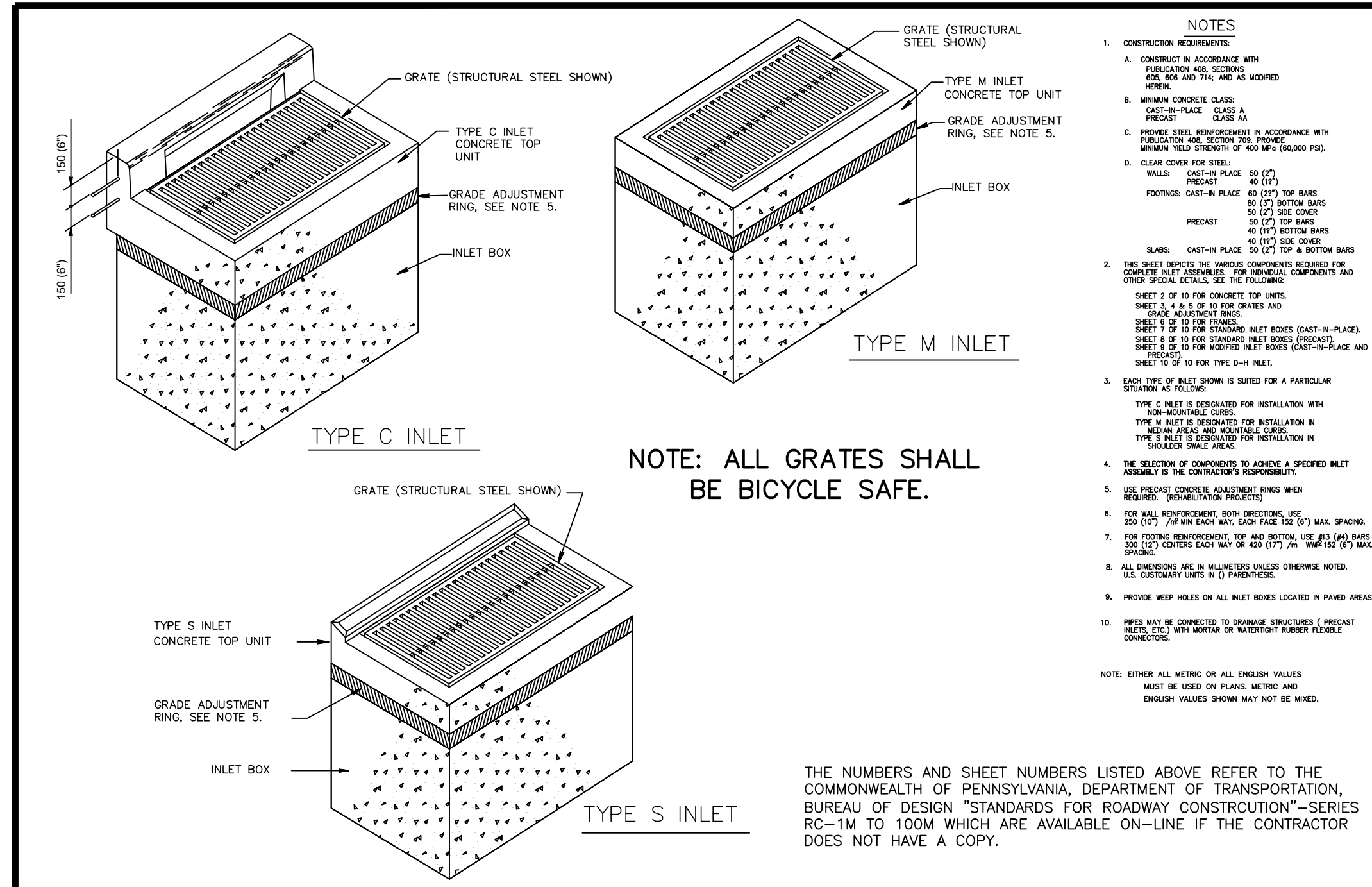
REVISIONS

CHECKED BY JAB

DATE 5-01-22

PROJECT NO. 4943

SHEET NO. 12 OF 13



Typical Section

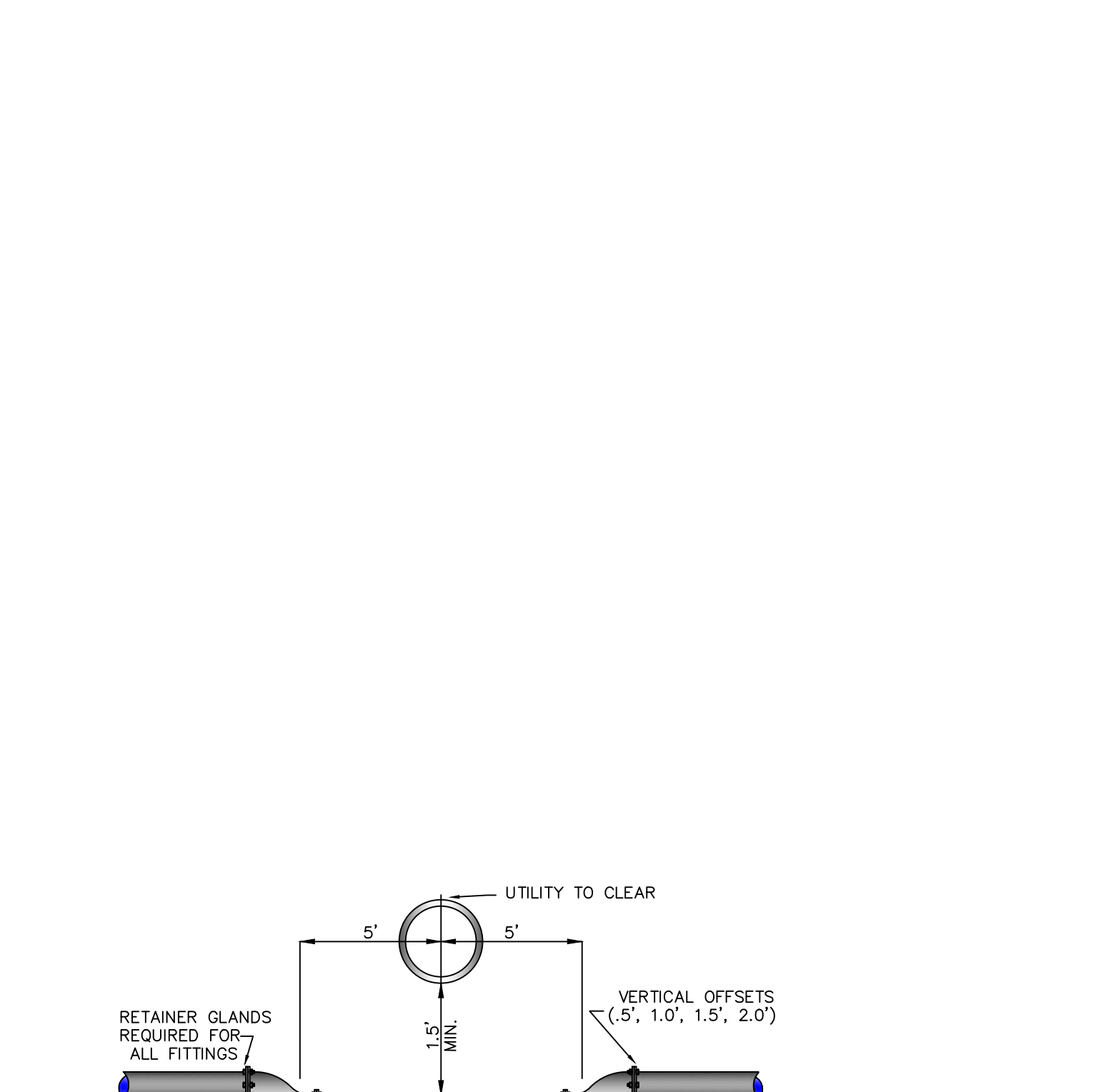
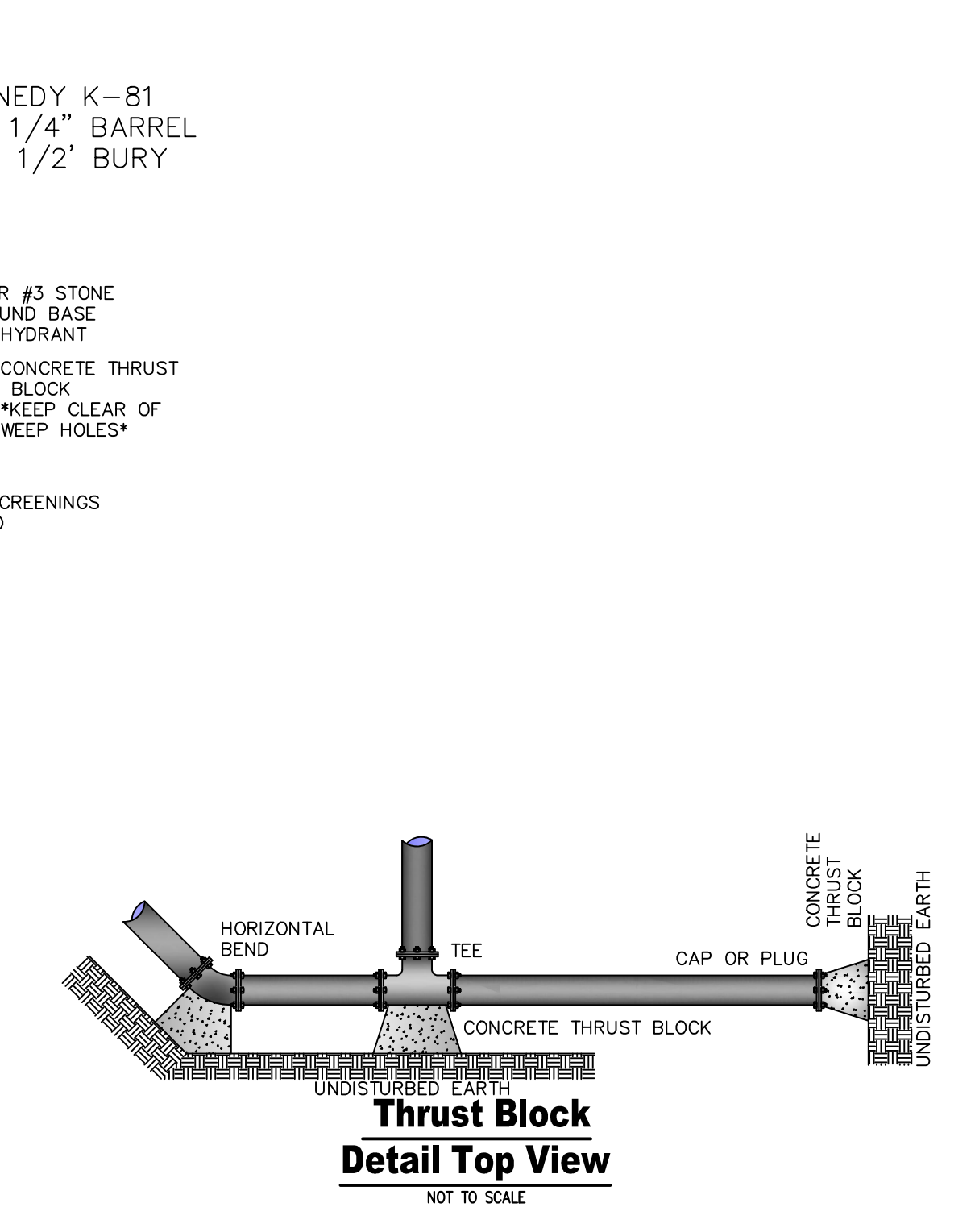
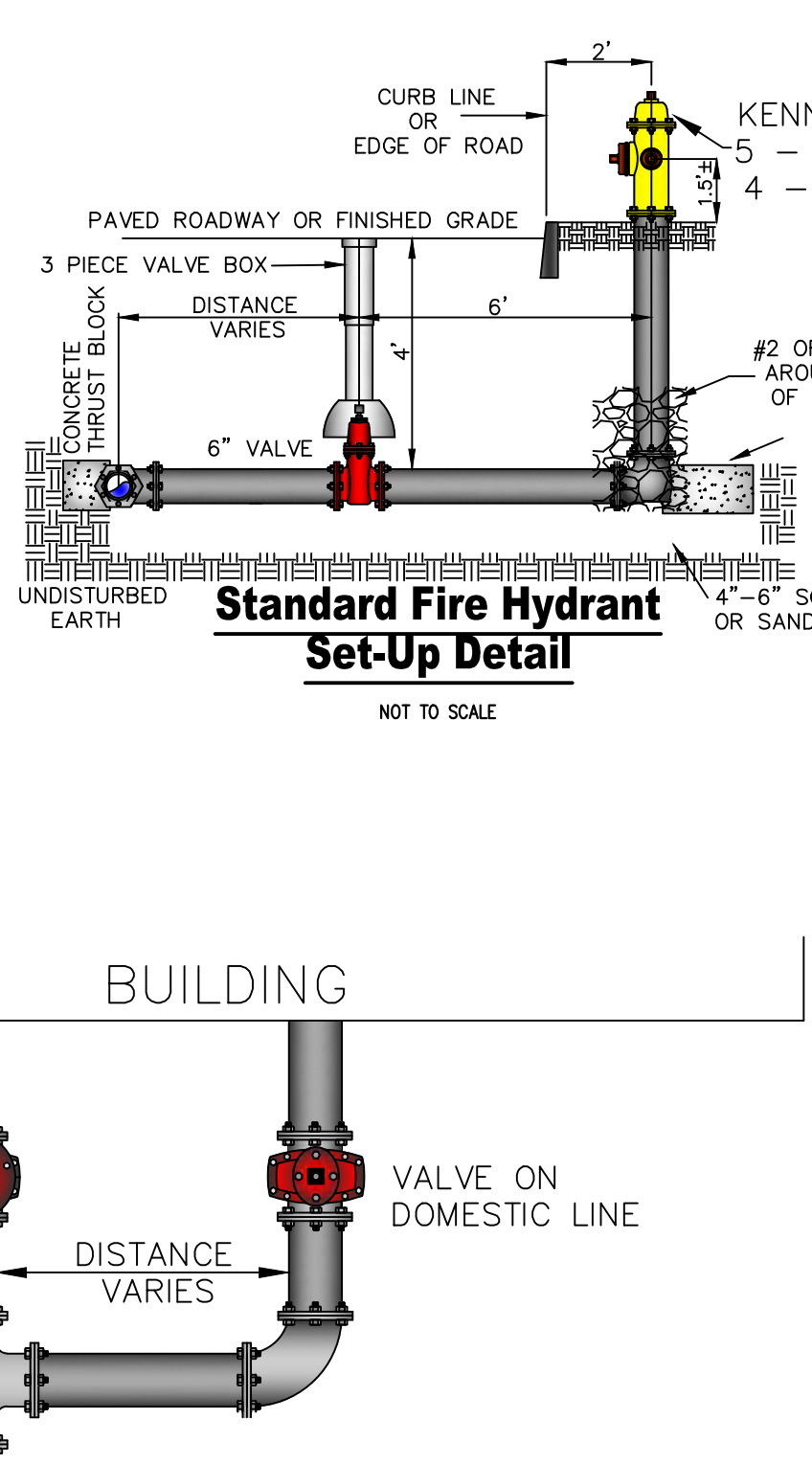
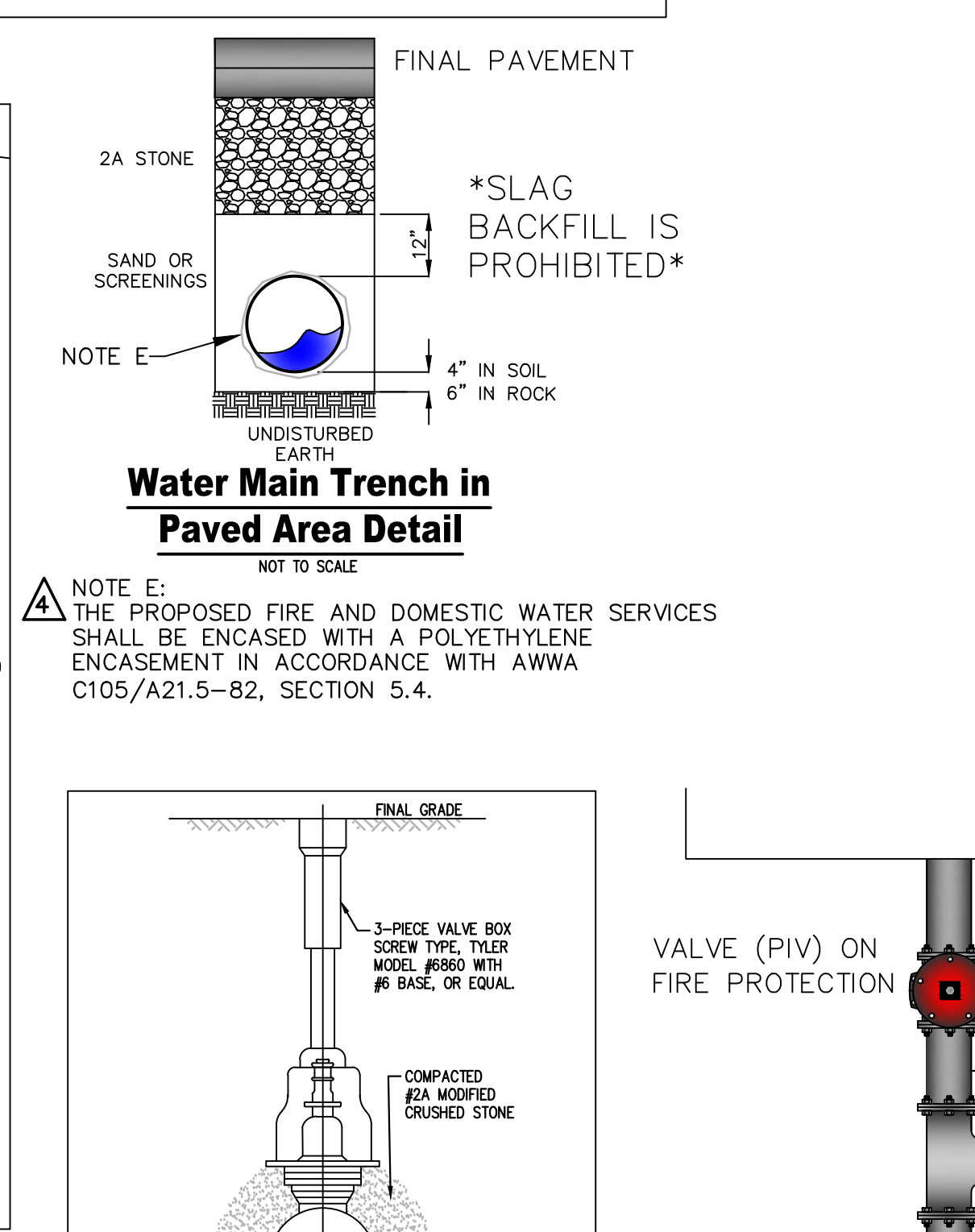
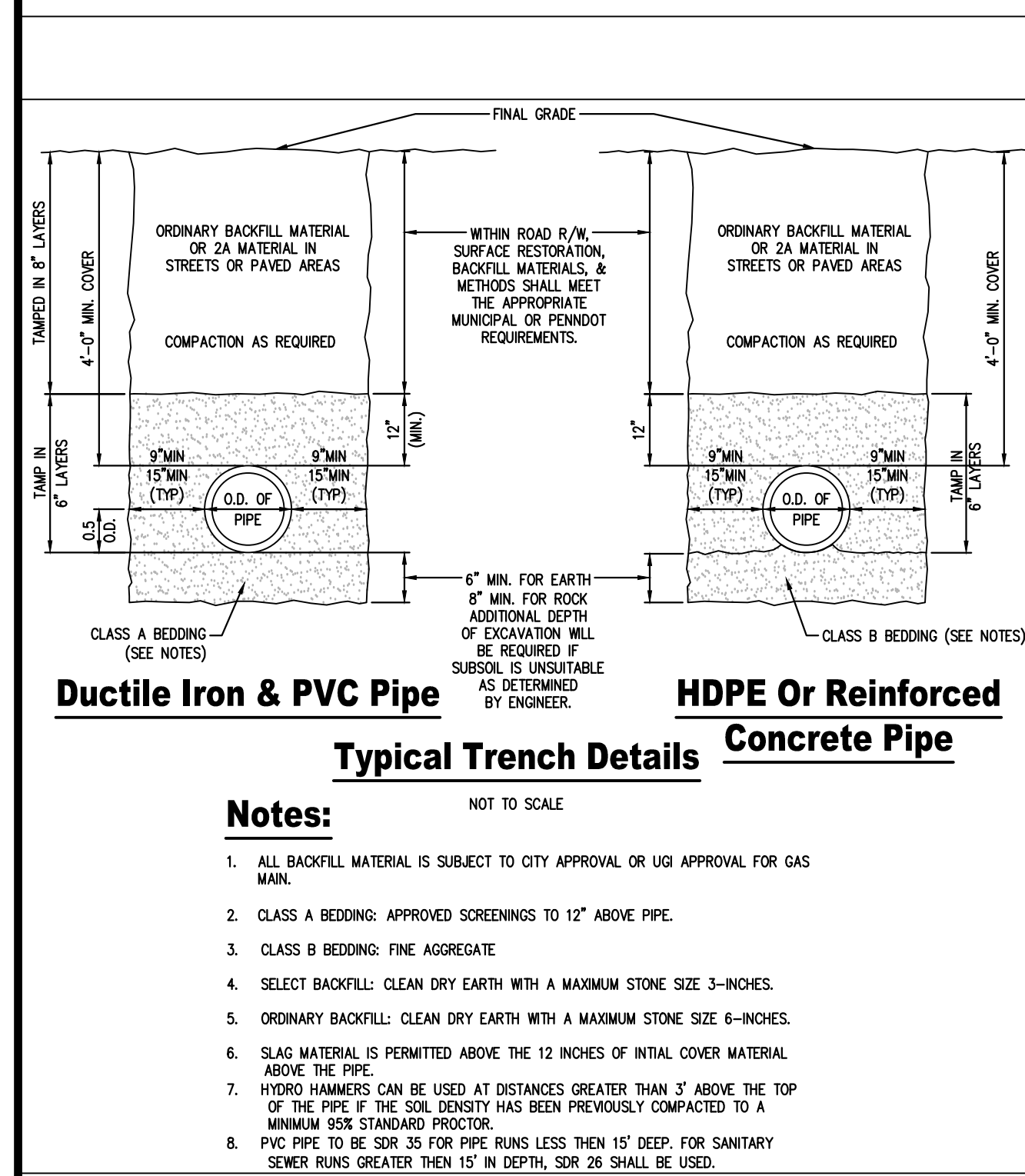
Dimensions of Concrete Blocking

PIPE SIZES (inches)	DIMENSIONS OF CONCRETE BLOCKING											
	LENGTH				WIDTH				DEPTH			
4 & SMALLER	11 1/2"	22 1/2"	45"	11 1/2"	22 1/2"	45"	11 1/2"	22 1/2"	45"	11 1/2"	22 1/2"	45"
6 & 8	2'	4'	4'	1.5'	3'	3'	1'	2'	3'	3'	1'	2'
10 & 12	4.5'	6'	6'	3'	3'	3'	4'	3'	4.5'	5'	5'	5'
14 & 16	6'	8'	11'	3.5'	3.5'	5'	3.5'	5'	5'	5'	5'	5'
18 & 20	7'	9'	13'	4'	5'	5.5'	4'	5'	6'	6'	6'	6'

Notes:

- NO COUPLING OR JOINTS SHALL BE COVERED WITH CONCRETE.
- REINFORCING BAR STRIPS TO BE SHAPED TO PIPE CURVATURE.
- ALL EXPOSED STEEL TO BE PAINTED WITH TWO COATS ASPHALTIC PAINT.

Thrust Blocking - Vertical Thrusts



BEARING AREA REQUIRED, SQUARE FEET

Type of Bearing Material and Allowable loads, psf	4" and less DEGREE BEND				6" and 8" DEGREE BEND				10" and 12" DEGREE BEND			
	11 1/2"	22 1/2"	45"	90"	11 1/2"	22 1/2"	45"	90"	11 1/2"	22 1/2"	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	1.2	2.0	1.0	1.3	2.4	4.4	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			
	11 1/2"	22 1/2"	45"	90"	11 1/2"	22 1/2"	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

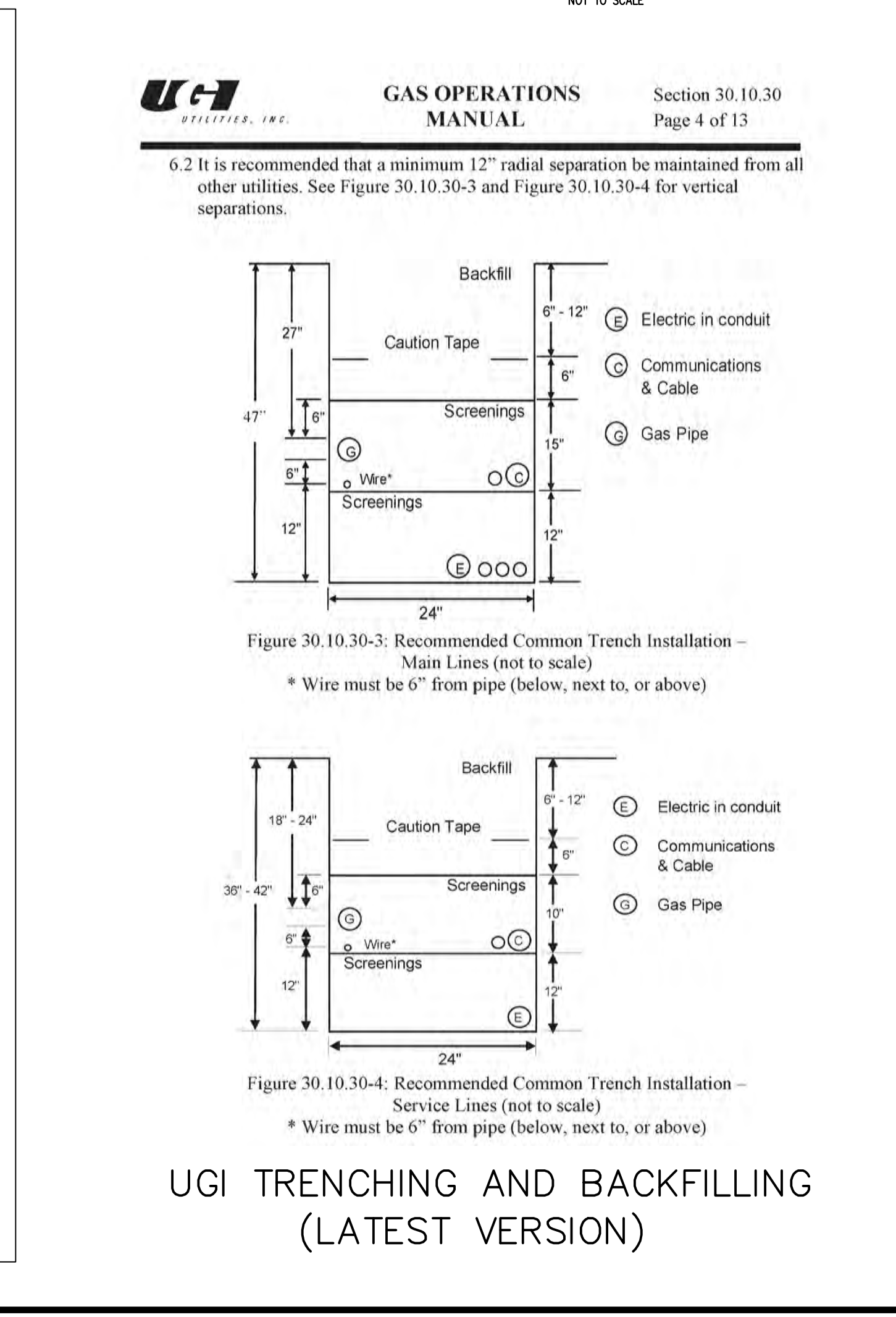
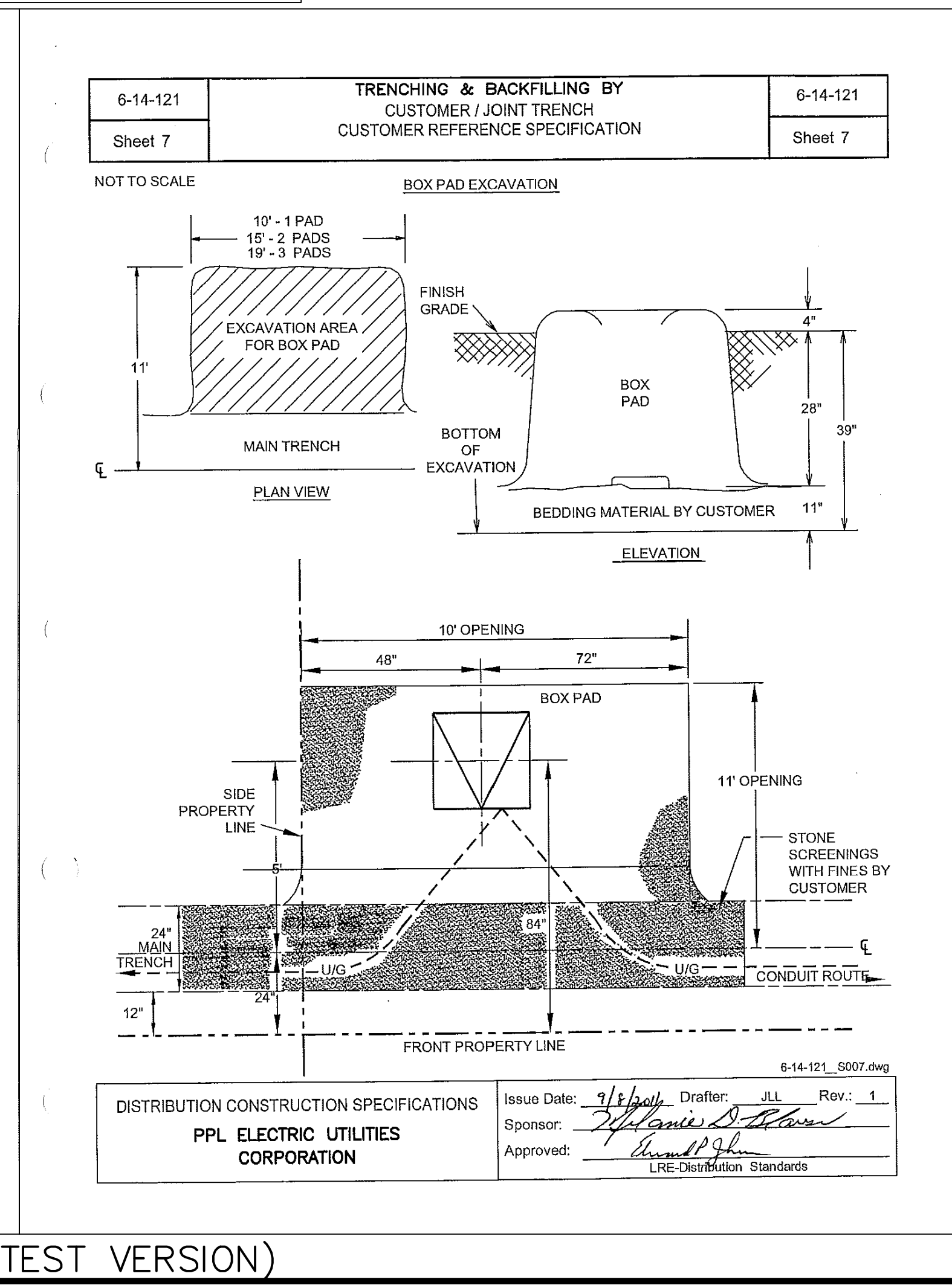
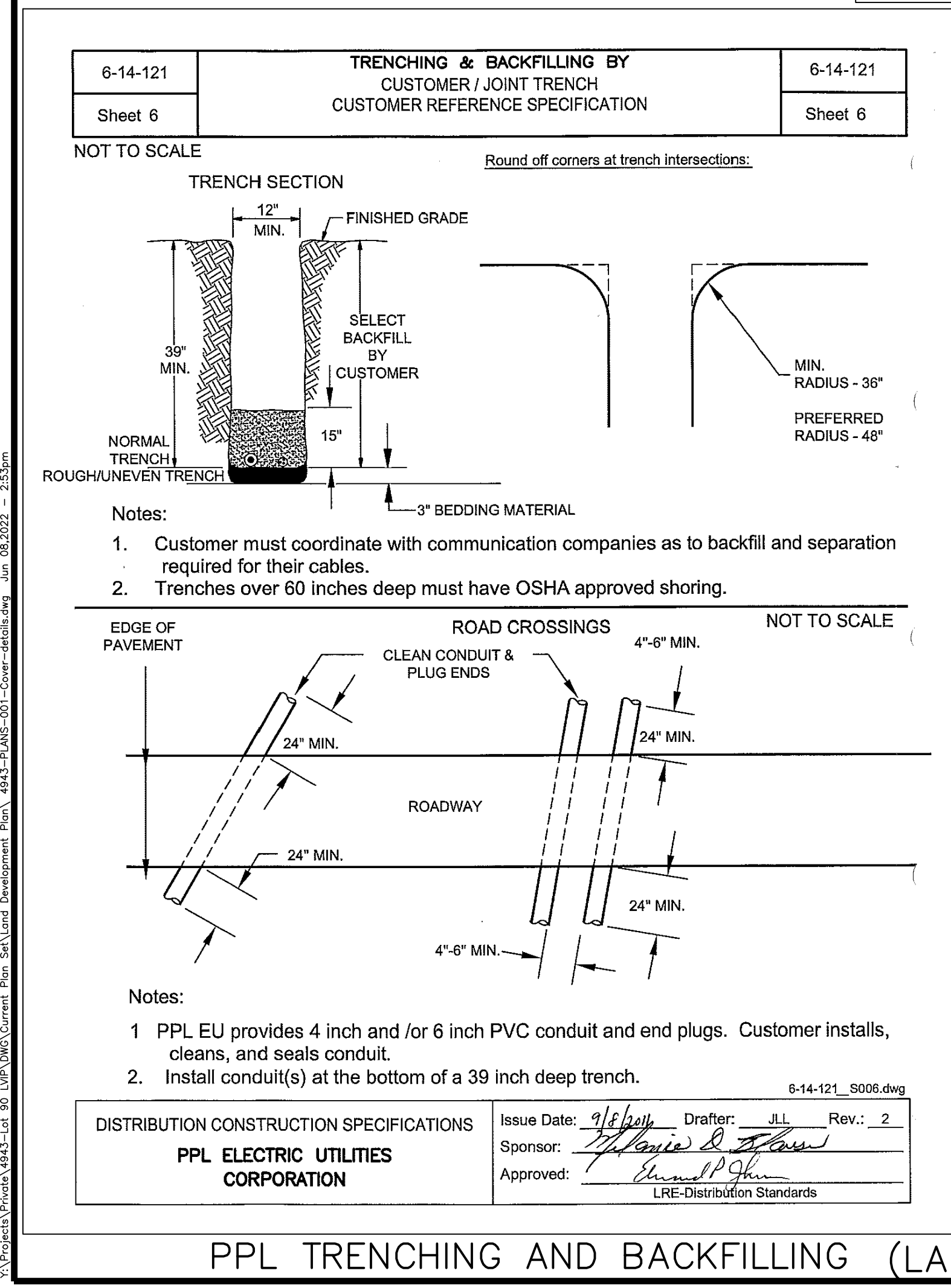
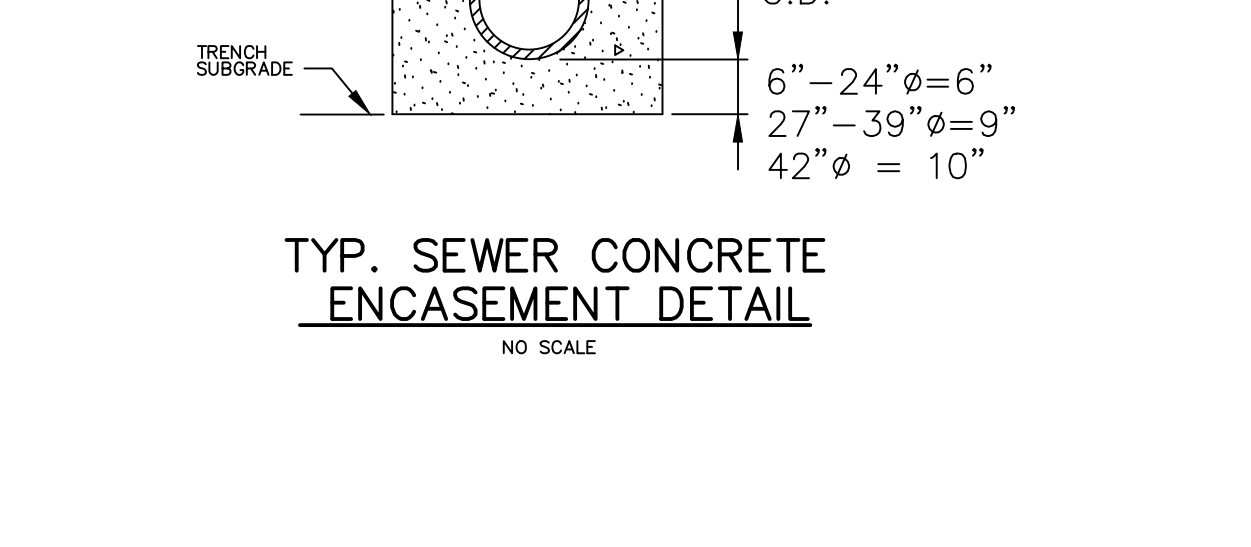
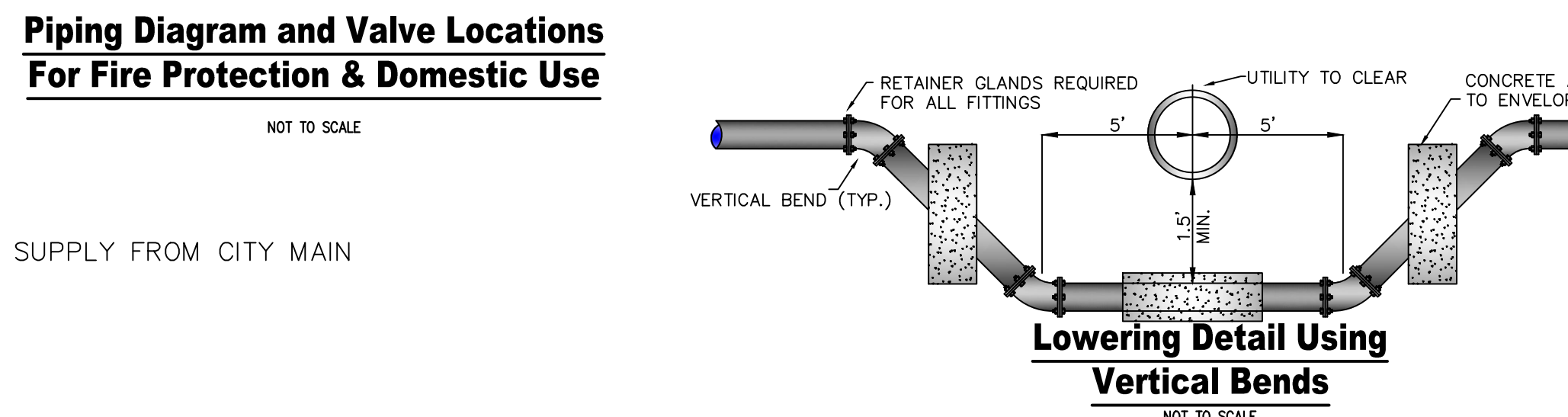
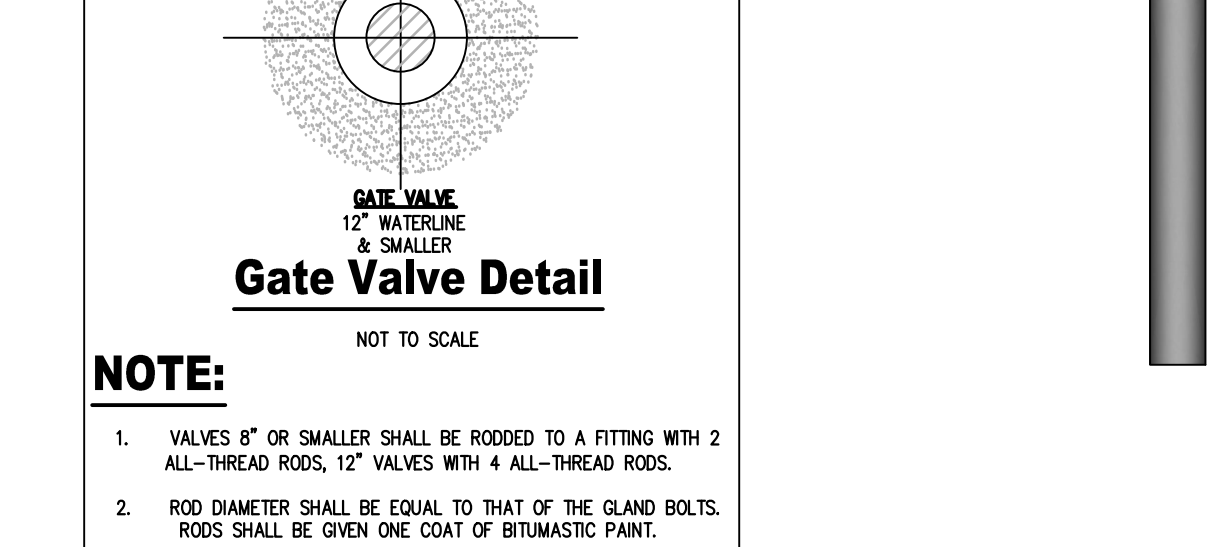
Notes:

- 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

NOTES:

- SCHEDULE OF DIMENSIONS UP TO 150 PSI WORKING PRESSURE



PRELIMINARY/FINAL LAND DEVELOPMENT

CONSTRUCTION DETAIL PLAN

LVP VII - LOT 90

1010 HARVARD AVENUE

CITY OF BETHLEHEM NORTHAMPTON COUNTY PENNSYLVANIA

HanoverEngineering

Bethlehem Office

252 Brodhead Road, Suite 100

Bethlehem, PA 18017-8944

P-610.691.5644

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HanoverEng.com

DATE: 6/06/22

SCALE: AS NOTED

DRAWN BY: DA

CHECKED BY: JLB

DATE: 5-01-22

PROJECT NO: 4943

SHEET NO: 13 OF 13