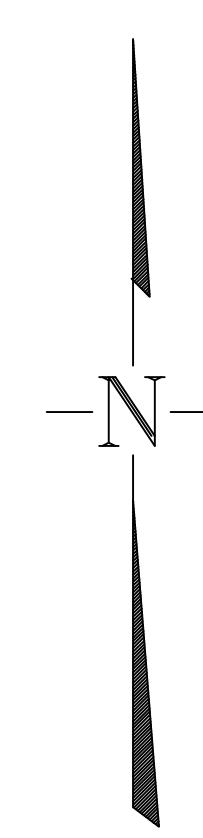


SHEET NO. 02 OF 17



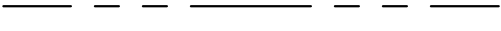






















PROJECT / SERIAL NUMBERS/	EXCAVATION-DEMOLITION	/ TYPE OF ONE CALL	/ DATE	/ ADDRESS	/ NEAREST INT.	/ TOWNSHIP	/ COUNTY
4998	2030331109	EXCAVATION	DESIGN	2/2/2021	1055 WIN DR.	JENNINGS ST.	CITY OF BETHLEHEM NORTHAMPTON

ELEV=324.14

NOTE: FOR THE TWO BENCHMARKS THAT WILL BE DESTROYED DURING CONSTRUCTION, THE CONTRACTOR

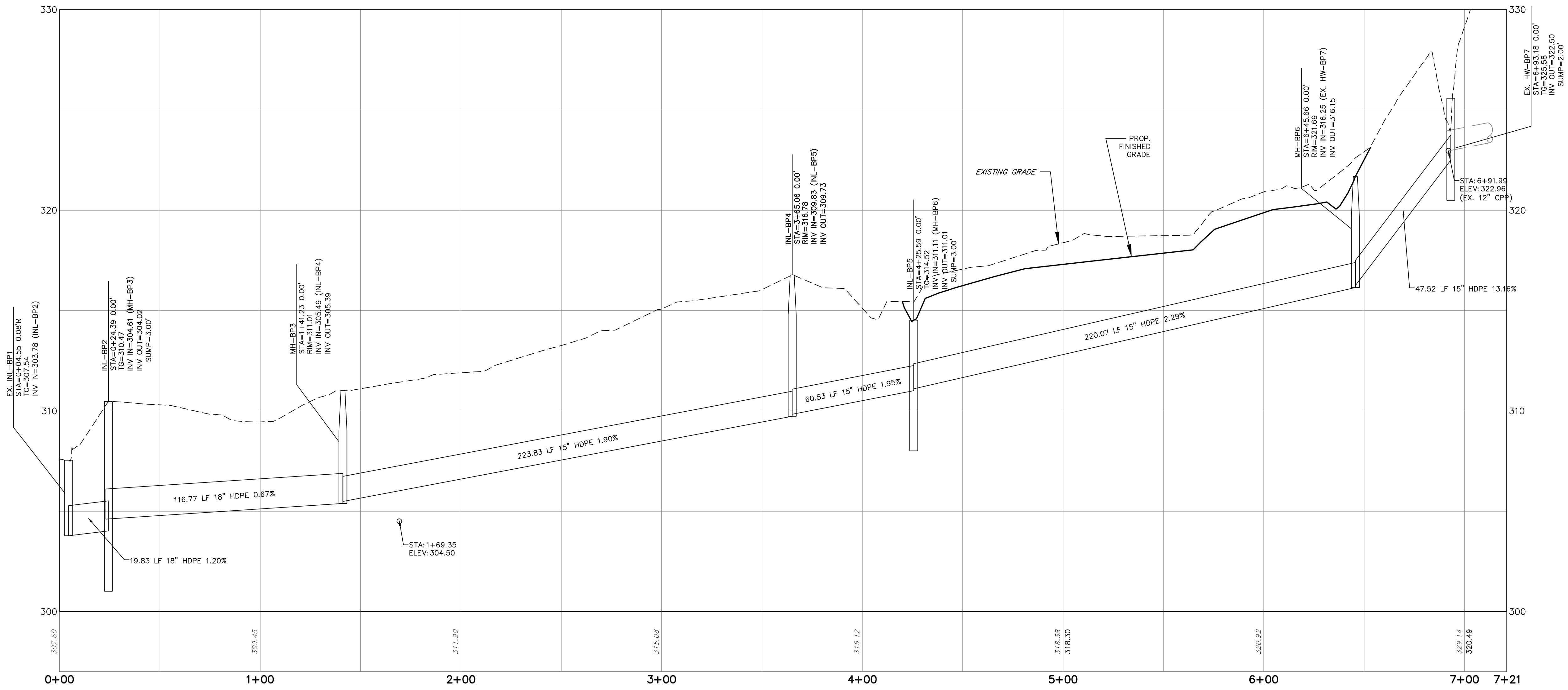


Legend

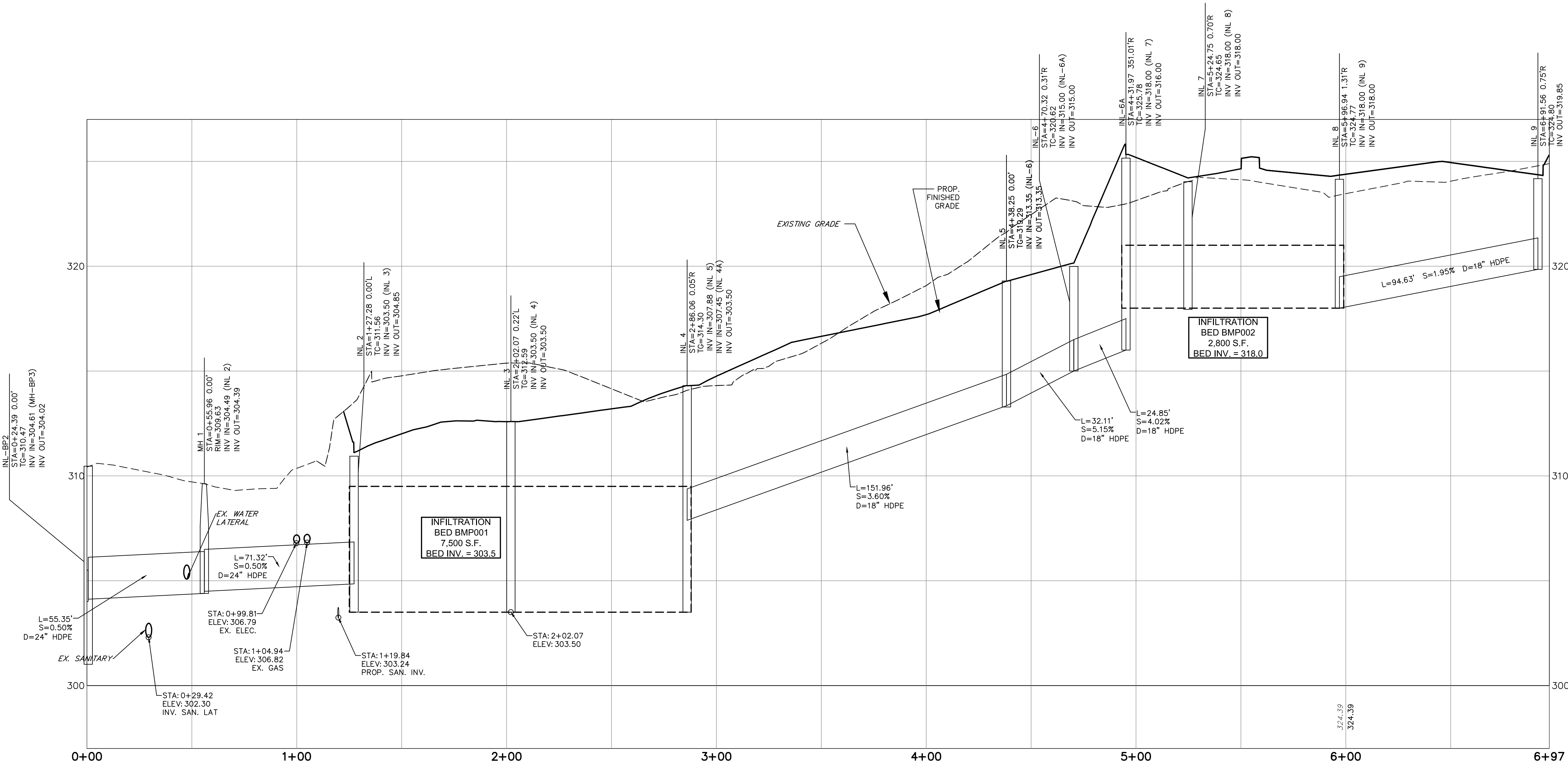
	PROPERTY LINE, RIGHT-OF-WAY
	EXISTING RIGHT-OF-WAY
	ADJONER PROPERTY LINE
	EXISTING STORM SEWER
	EXISTING SOIL BOUNDARY
	EXISTING CURB
	EXISTING SANITARY SEWER
	EXISTING ELECTRIC LINE
	EXISTING UNDERGROUND ELECTRIC
	EXISTING GAS MAIN
	EXISTING WATER LINE
	EXISTING CONCRETE SIDEWALK
	EXISTING MAJOR CONTOURS
	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 FAN
	EXISTING SIGN
	EXISTING TREES

PROJECT / SERIAL NUMBERS/	EXCAVATION-DEMOLITION	/ TYPE OF ONE CALL /	DATE	/ ADDRESS	/ NEAREST INT. /	TOWNSHIP	/ COUNTY
4998 2030331109	EXCAVATION	DESIGN	2/2/2021	1055 WIN DR.	JENNINGS ST.	CITY OF BETHLEHEM	NORTHAMPTON

TYPE OF ONE CALL	DATE	ADDRESS	NEAREST INT.	TOWNSHIP	COUNTY
DESIGN	2/2/2021	1055 WIN DR.	JENNINGS ST.	CITY OF BETHLEHEM	NORTHAMPTON



STORM BYPASS PROFILE

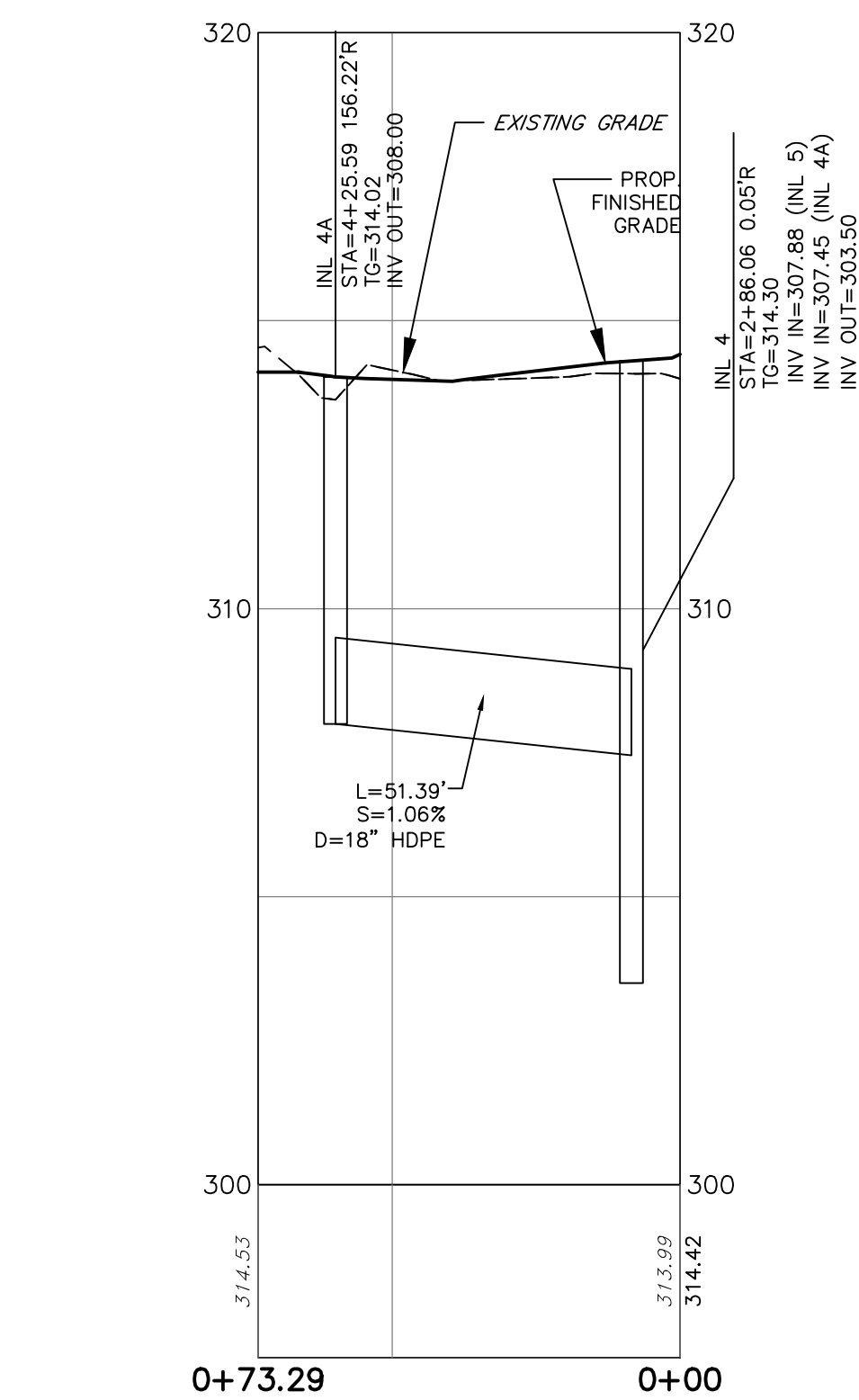


INL 9 TO INL BP-2 PROFILE

SEE SHEET 4 FOR
UTILITY LAYOUT



HORIZ. SCALE: 1"=30'
VERT. SCALE: 1"=3'



DOWNSPOT TIE PROFILE

PRELIMINARY/FINAL LAND DEVELOPMENT

UTILITY PROFILE PLAN

PHOENIX TUBE

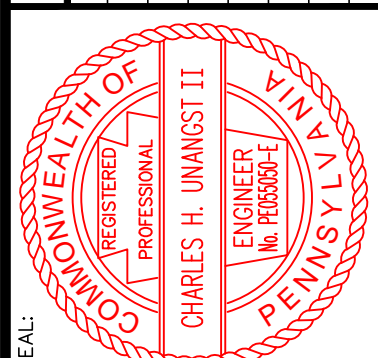
925 BETHLEHEM DRIVE

CITY OF BETHLEHEM
NORTHAMPTON COUNTY
PENNSYLVANIA

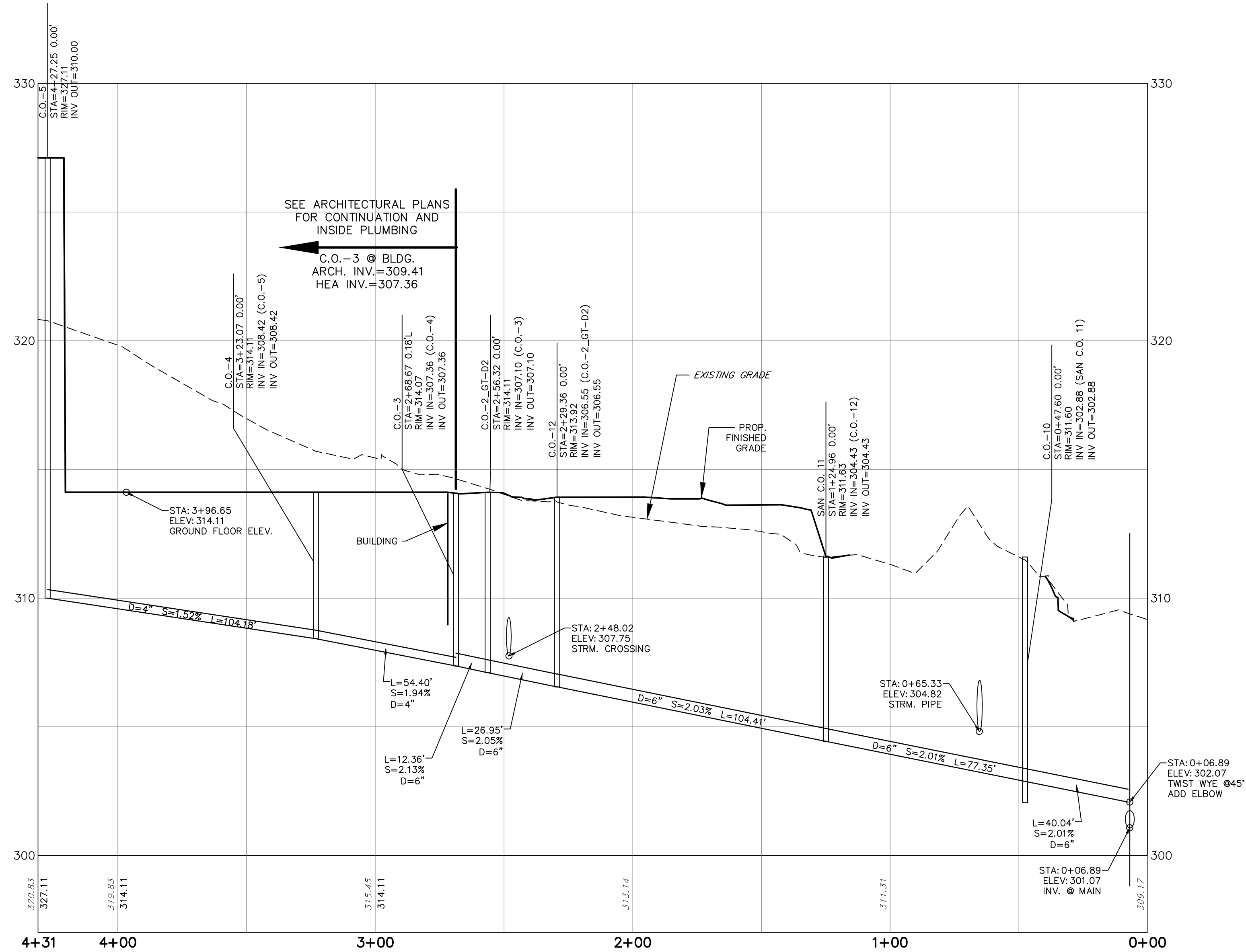
HanoverEngineering
Bethlehem Office
252 Brodhead Road, Suite 100
Bethlehem, PA 18017-8944
P: 610.691.5644
F: 610.691.6968
HanoverEng.com

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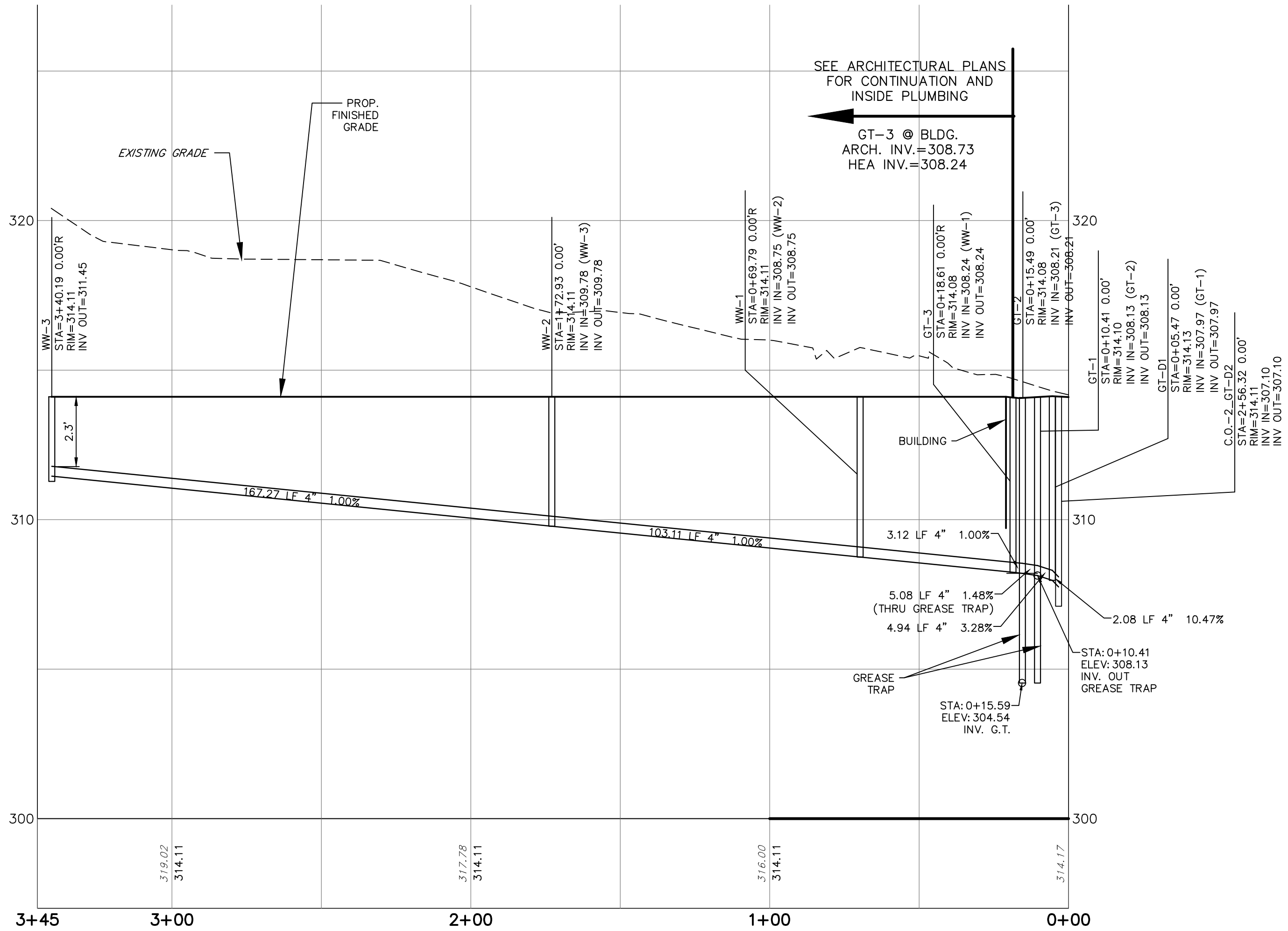
NO.	REVISIONS	DATE	DRAWN BY	CHECKED BY
1	PER NCD COMMENTS	9/7/23	AS NOTED	7/28/23
2	PER CITY REVIEW	11/02/23		



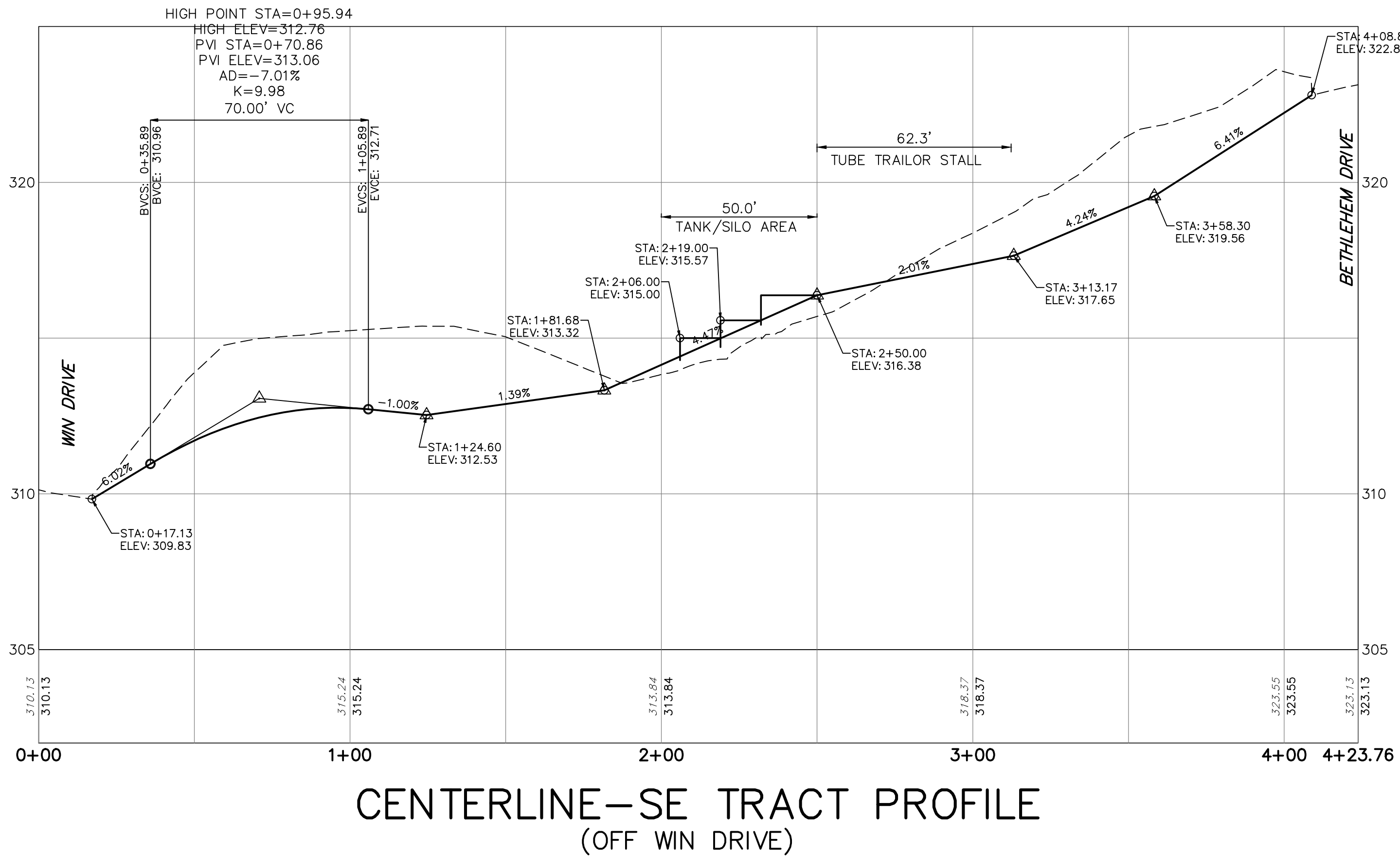
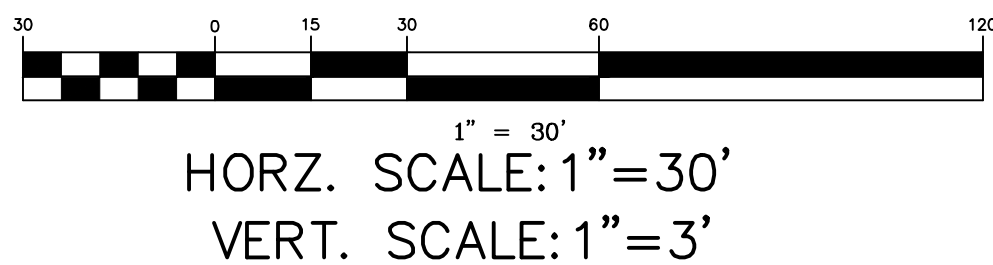
PROJECT TITLE:	UTILITY PROFILE PLAN
PROJECT NO.:	4398
SHEET NO.:	06
OF	17



SANITARY LATERAL TO WIN DR. PROFILE



WASTE WATER PROFILE



CENTERLINE-SE TRACT PROFILE
(OFF WIN DRIVE)

PRELIMINARY/FINAL LAND DEVELOPMENT

UTILITY PROFILE PLAN

PHOENIX TUBE

925 BETHLEHEM DRIVE

PROJECT TITLE:

NO. 1

DATE 11/02/23

REVISIONS

PER ACOD COMMENTS

DATE 9/7/23

SCALE 1"=30'

PROJECT NO. 4998

SHEET NO. 07 OF 17

CITY OF BETHLEHEM

NORTHAMPTON COUNTY

PENNSYLVANIA

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HANOVER ENGINEERING ASSOCIATES, INC.

252 Brodhead Road, Suite 100

Bethlehem, PA 18017-8944

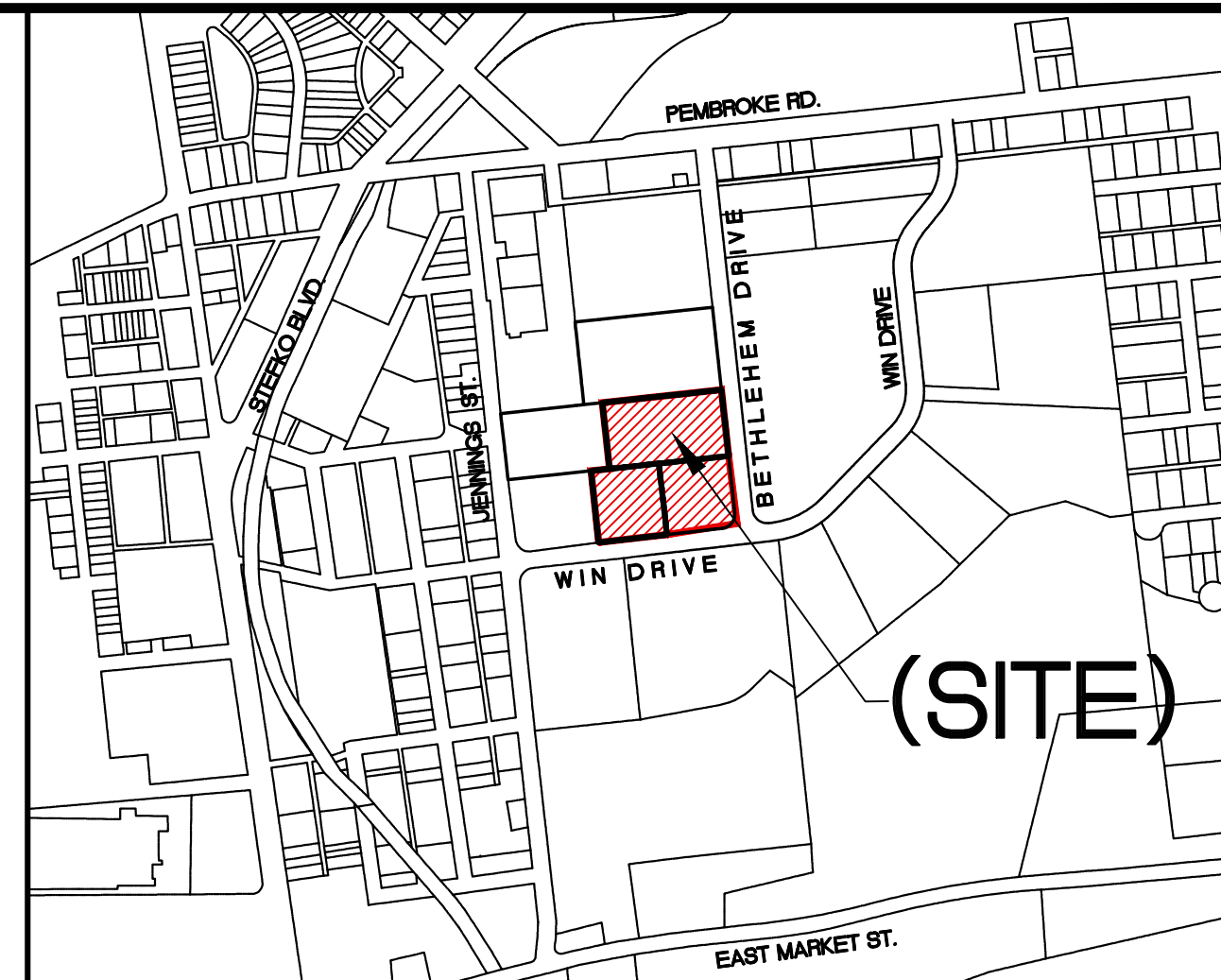
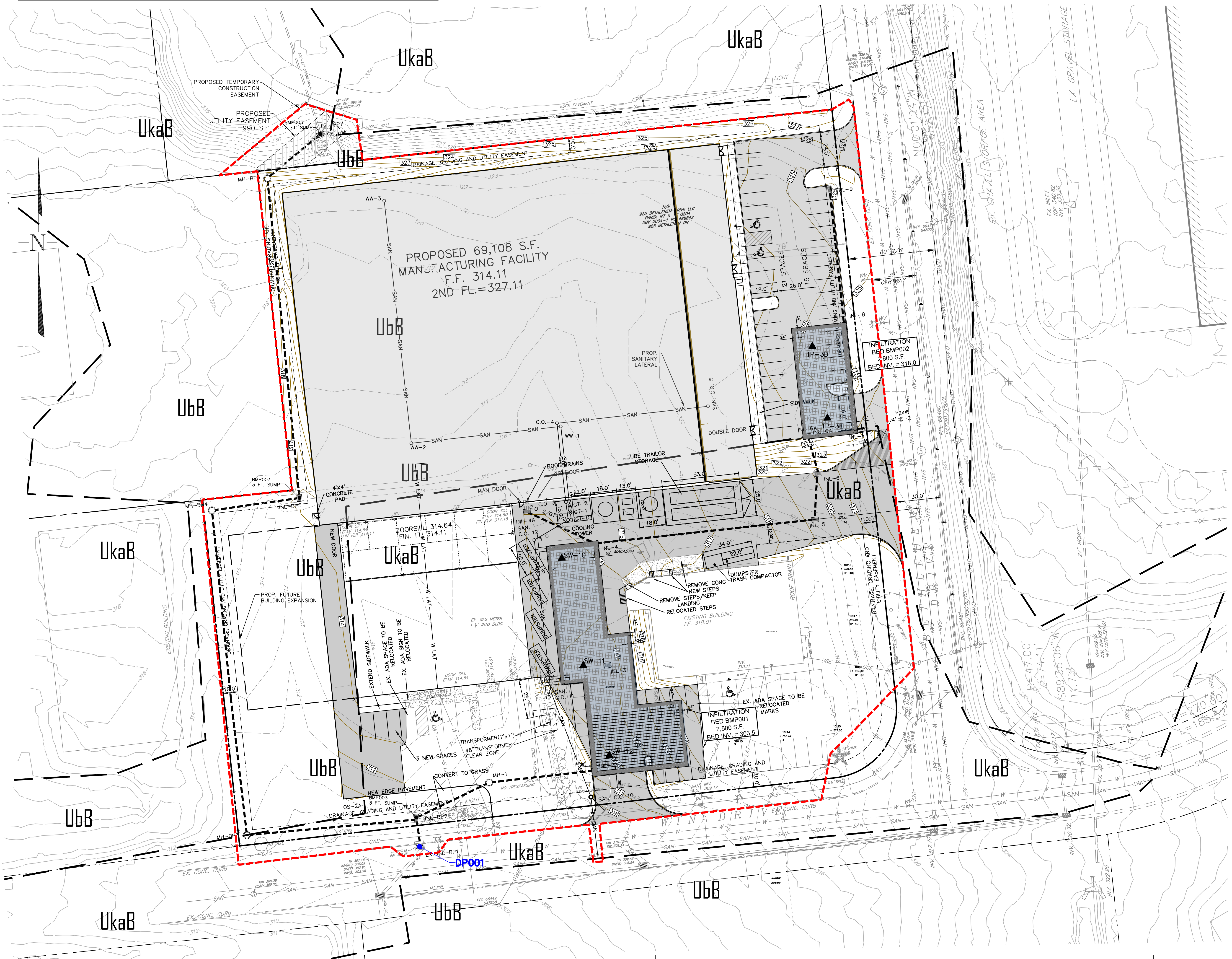
P-610.691.5644

F-610.691.6968

hanovereng.com

Bethlehem Office

AVOIDANCE MEASURE: THE PROPOSED PROJECT IS LOCATED IN THE VICINITY OF NORTHERN LONG-EARED BAT SPRING STAGING/FALL SWARMING HABITAT. TO ENSURE TAKE IS NOT REASONABLE CERTAIN TO OCCUR, DO NOT CONDUCT TREE REMOVAL FROM MAY 15 TO AUGUST 15.



Location Map
SCALE: 1" = 600'

Limit Of Disturbance / NPDES Boundary
4.78 ACRES

Soil Type
UbB Udothents, limestone, 0 to 8 percent slopes
UkaB Urban land, 0 to 8 percent slopes

Stormwater Management BMP's

BMP 6.4.3 SUBSURFACE INFILTRATION BED
BMP 6.6.4 WATER QUALITY FILTERS AND HYDRODYNAMIC DEVICES

Property Identification

PART 1
925 BETHELEM DRIVE
BETHELEM, PA 18017
TAX MAP REFERENCED: MAP N7, BLOCK 5 LOT 1E
DEED REFERENCED: 2004-1-488842
PART 2
1025 WIN DRIVE
BETHELEM, PA 18017
TAX MAP REFERENCED: MAP N7, BLOCK 5 LOT 1L
DEED REFERENCED: 2022-1-062225
PART 3
1025 WIN DRIVE
BETHELEM, PA 18017
TAX MAP REFERENCED: MAP N7, BLOCK 5 LOT 1W
DEED REFERENCED: 2023-1-061645
Plan Preparer
ANDREW BOHL, PE
HANOVER ENGINEERING ASSOCIATES, INC.
225 BROADHEAD ROAD, SUITE 100
BETHELEM, PA 18017-8944
PHONE (610) 691-5644
FAX (610) 691-6968

Receiving Waters
UNIT TO LEHIGH RIVER (CHF-WF)

Permittee

JAVA SD STEEL, LLC.
1105 WIN DRIVE
BETHELEM, PA 18017
PHONE (610) 691-5337, EXT. 1145
CONTACT: DAVID REALE, CEO

Owner Applicant

JAVA SD STEEL, LLC.
1105 WIN DRIVE
BETHELEM, PA 18017
PHONE (610) 691-5337, EXT. 1145
CONTACT: DAVID REALE, CEO

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

OWNER'S SIGNATURE _____ DATE _____

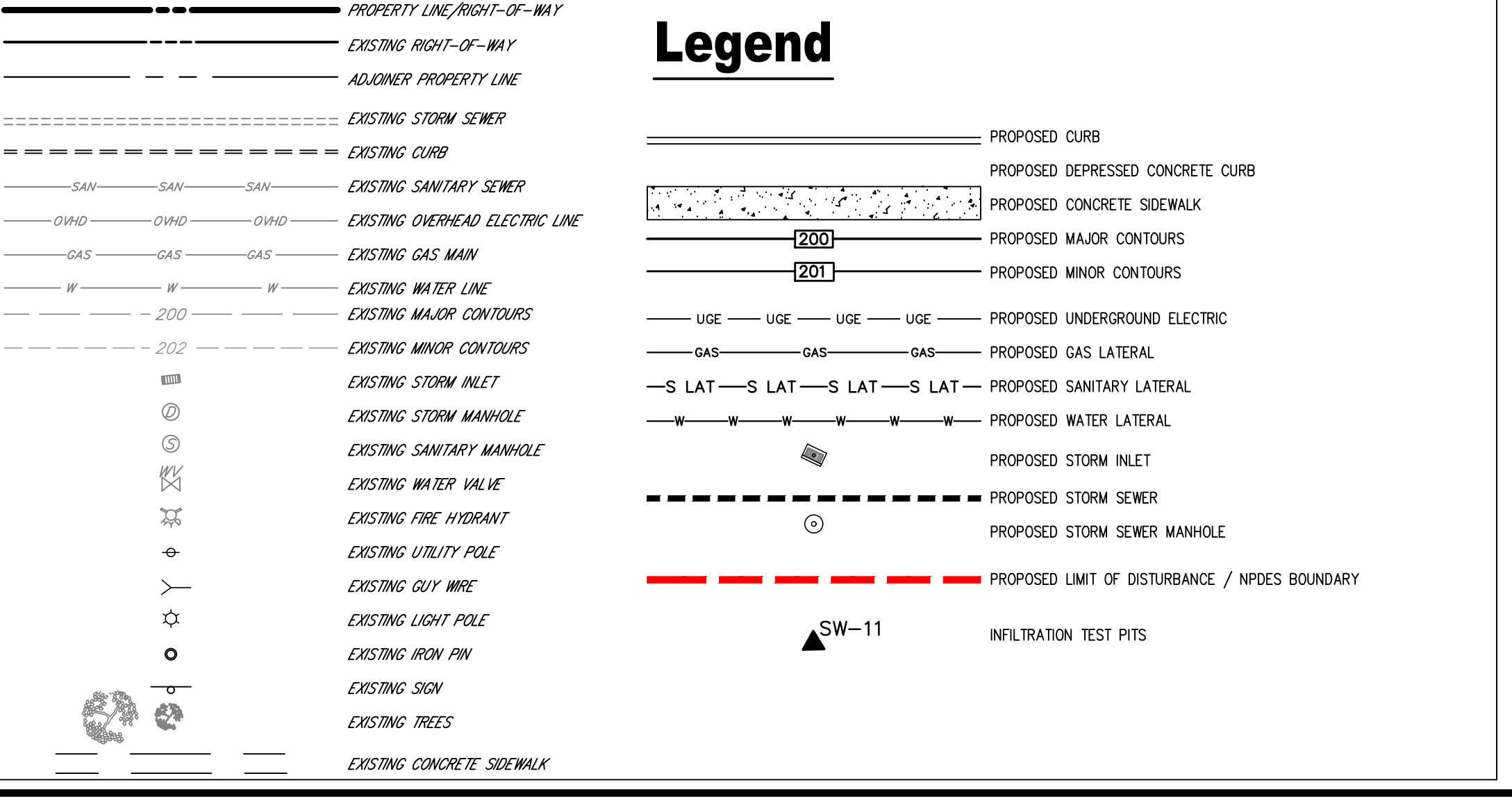
SWORN AND SUBSCRIBED BEFORE ME THIS _____ DAY OF _____, 20____

NOTARY PUBLIC _____

STORM SEWER CHART										
	NAME	TYPE	TOP	INV. IN	INV. OUT	PIPE DIA.	LENGTH	MATERIAL	SLOPE	DOWNSIDE STRUCTURE
*	EX. HW-BP7	STD BOX, M TOP	TG=325.58		322.50	15"	47.52'	HDPE	13.16%	MH-BP6
EX.	INL-BP1	STD BOX, M TOP	TG=307.54	303.78 (INL-BP2)						
	INL-6	STD BOX, C TOP	TG=320.62	315.00 (INL-6A)	315.00	18"	32.11'	HDPE	5.15%	INL 5
	INL-6A	STD BOX, C TOP	TG=325.78	318.00 (INL 7)	316.00	18"	24.85'	HDPE	4.02%	INL-6
*	INL-BP2	STD BOX, M TOP	TG=310.47	304.61 (MH-BP3)	304.02	18"	19.83'	HDPE	1.20%	EX. INL-BP1
	INL-BP4	48" DIA MH	RIM=316.78	309.83 (INL-BP5)	309.73	15"	223.83'	HDPE	1.90%	MH-BP3
*	INL-BP5	STD BOX, M TOP	TG=314.52	311.11 (MH-BP6)	311.01	15"	60.53'	HDPE	1.95%	INL-BP4
	INL 2	STD BOX, C TOP	TG=311.56	303.50 (INL 3)	304.85	24"	71.32'	HDPE	0.50%	MH 1
	INL 3	STD BOX, M TOP	TG=312.59	303.50 (INL 4)	303.50	18"	73.68'	HDPE	0.00%	INL 2
	INL 4	STD BOX, M TOP	TG=314.30	307.88 (INL 5) 307.45 (INL 4A)	303.50	18"	83.98'	HDPE	0.00%	INL 3
	INL 4A	STD BOX, M TOP	TG=314.02		308.00	18"	51.39'	HDPE	1.06%	INL 4
	INL 5	STD BOX, M TOP	TG=319.29	313.35 (INL-6)	313.35	18"	151.96'	HDPE	3.60%	INL 4
	INL 7	STD BOX, C TOP	TG=324.65	318.00 (INL 8)	318.00	15"	28.50'	HDPE	0.00%	INL-6A
	INL 8	STD BOX, C TOP	TG=324.77	318.00 (INL 9)	318.00	15"	72.98'	HDPE	0.00%	INL 7
	INL 9	STD BOX, C TOP	TG=324.80		319.85	18"	94.63'	HDPE	1.95%	INL 8
	MH-BP3	48" DIA MH	RIM=311.01	305.49 (INL-BP4)	305.39	18"	116.77'	HDPE	0.67%	INL-BP2
	MH-BP6	48" DIA MH	RIM=321.69	316.25 (EX. HW-BP8)	316.15	15"	220.07'	HDPE	2.29%	INL-BP5
	MH 1	48" DIA MH	RIM=309.63	304.49 (INL 2)	304.39	24"	55.35'	HDPE	0.50%	

* INLET BP2, BP5 AND BP7 REQUIRE SUMPS. SHEET 12 FOR DETAIL.

Legend



Benchmarks for this Plan
1. TOP OF IRON PIN AT THE SW CORNER OF PARCEL N7-5-1E, ALSO THE SE CORNER OF LANDS N/F OF ZARINS HOLDING COMPANY, LLC
ELEV=316.33
2. TOP OF IRON PIN AT THE NE CORNER OF PARCEL N7-5-1E, ALSO THE SE CORNER OF LANDS N/F OF ZARINS HOLDING COMPANY, LLC
ELEV=315.27
3. TOP OF IRON PIN AT THE SE CORNER OF PARCEL N7-5-1E, ALSO THE SE CORNER OF LANDS N/F OF ZARINS HOLDING COMPANY, LLC
ELEV=324.14
NOTE: FOR THE TWO BENCHMARKS THAT WILL BE DESTROYED DURING CONSTRUCTION, THE CONTRACTOR SHALL ESTABLISH A NEW BENCHMARK/BENCHMARKS.

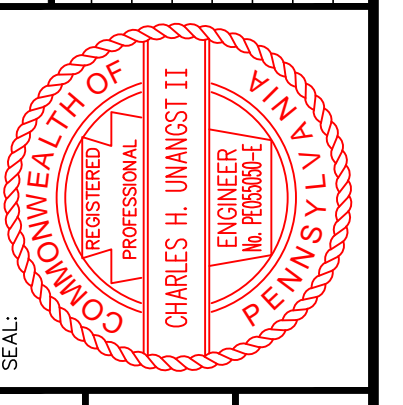


"CALL BEFORE YOU DIG"
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND TO WORKING DAYS IN DESIGN STAGE - STOP CALL
PENNSYLVANIA ONE CALL SYSTEM, INC.
1-800-242-1776
THIS PROJECT'S DESIGNER INQUIRY NO.
20230331109
PROJECT / SERIAL NUMBERS / EXCAVATION-DEMOLITION / TYPE OF ONE CALL / DATE / ADDRESS / NEAREST INT. / TOWNSHIP / COUNTY
4998 / 20230331109 / EXCAVATION / DESIGN / 2/2/2021 / 1055 WIN DR. / JENNINGS ST. / CITY OF BETHELEM / NORTHAMPTON

PRELIMINARY/FINAL LAND DEVELOPMENT
POST CONSTRUCTION STORMWATER MANAGEMENT PLAN
PROJECT TITLE:
925 BETHELEM DRIVE
PHOENIX TUBE

CITY OF BETHELEM
NORTHAMPTON COUNTY
PENNSYLVANIA

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

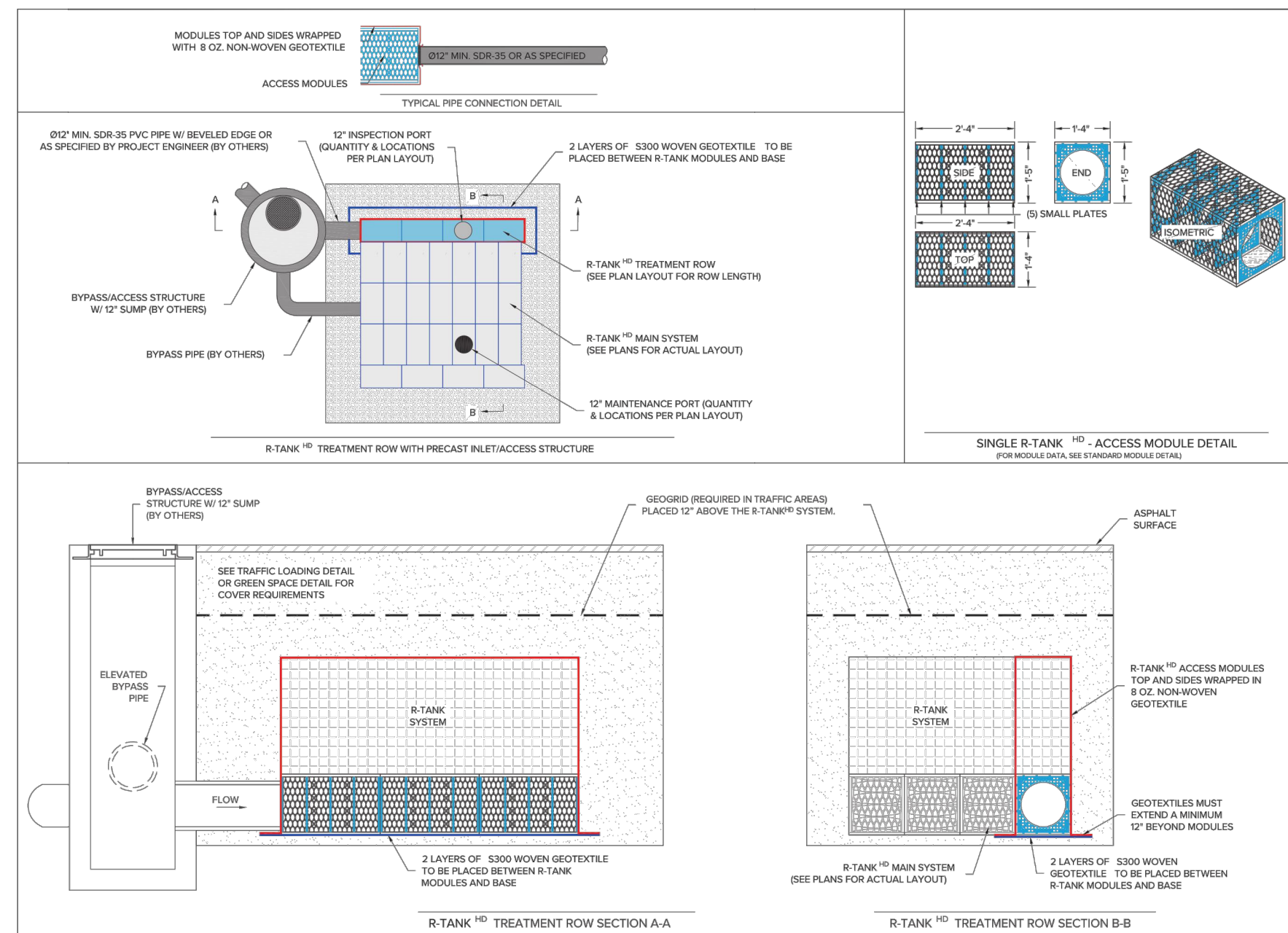
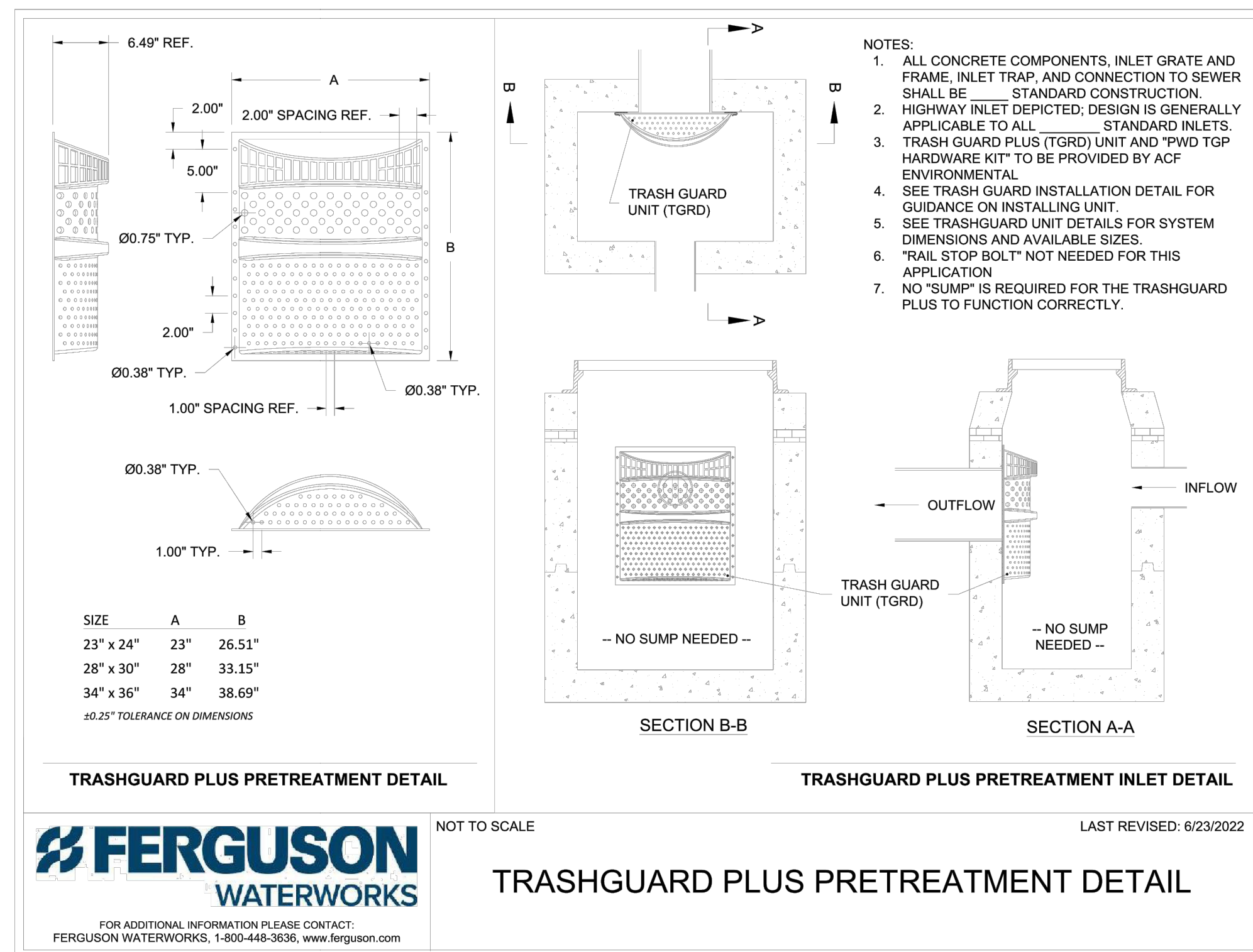
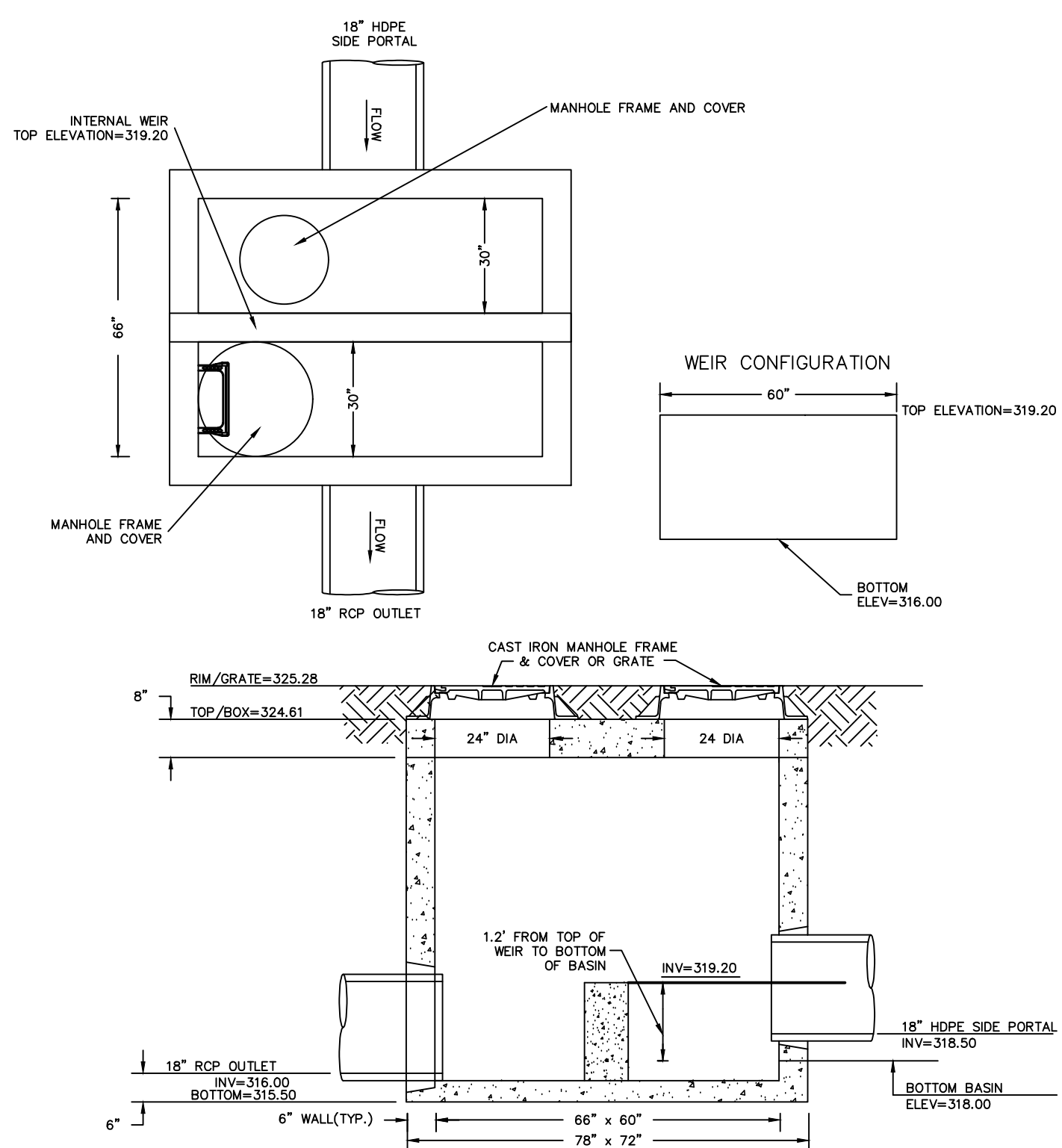
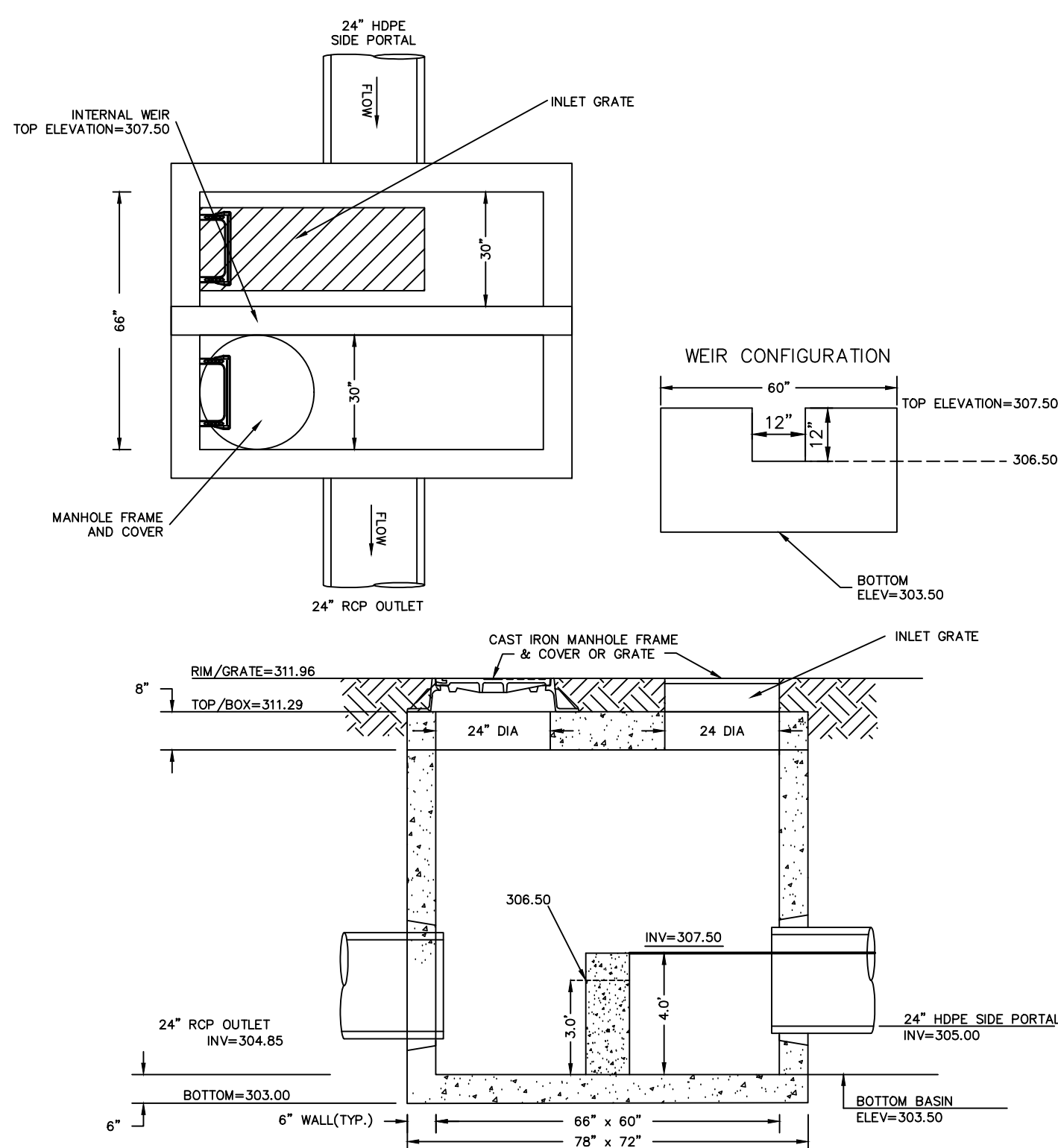
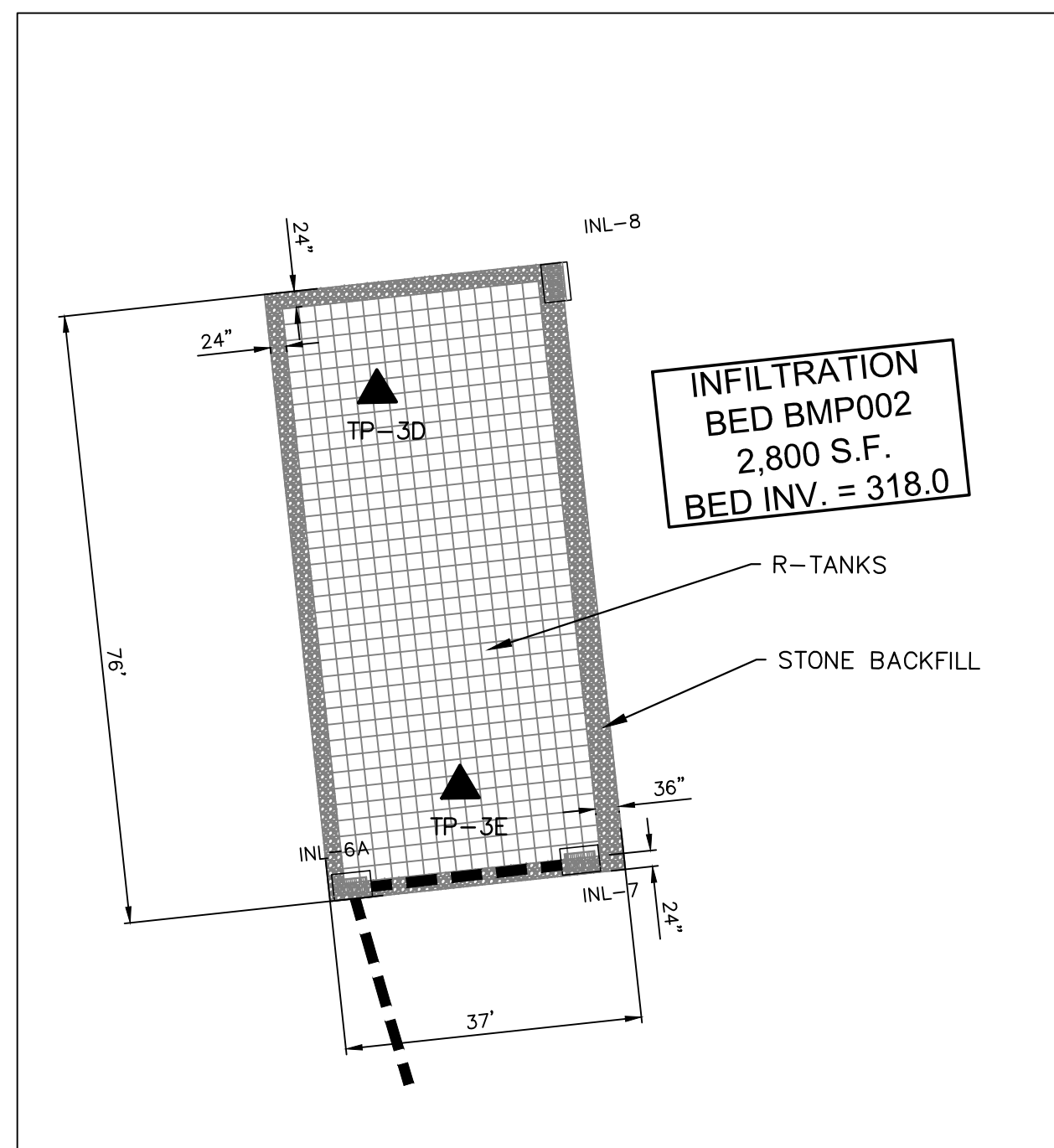
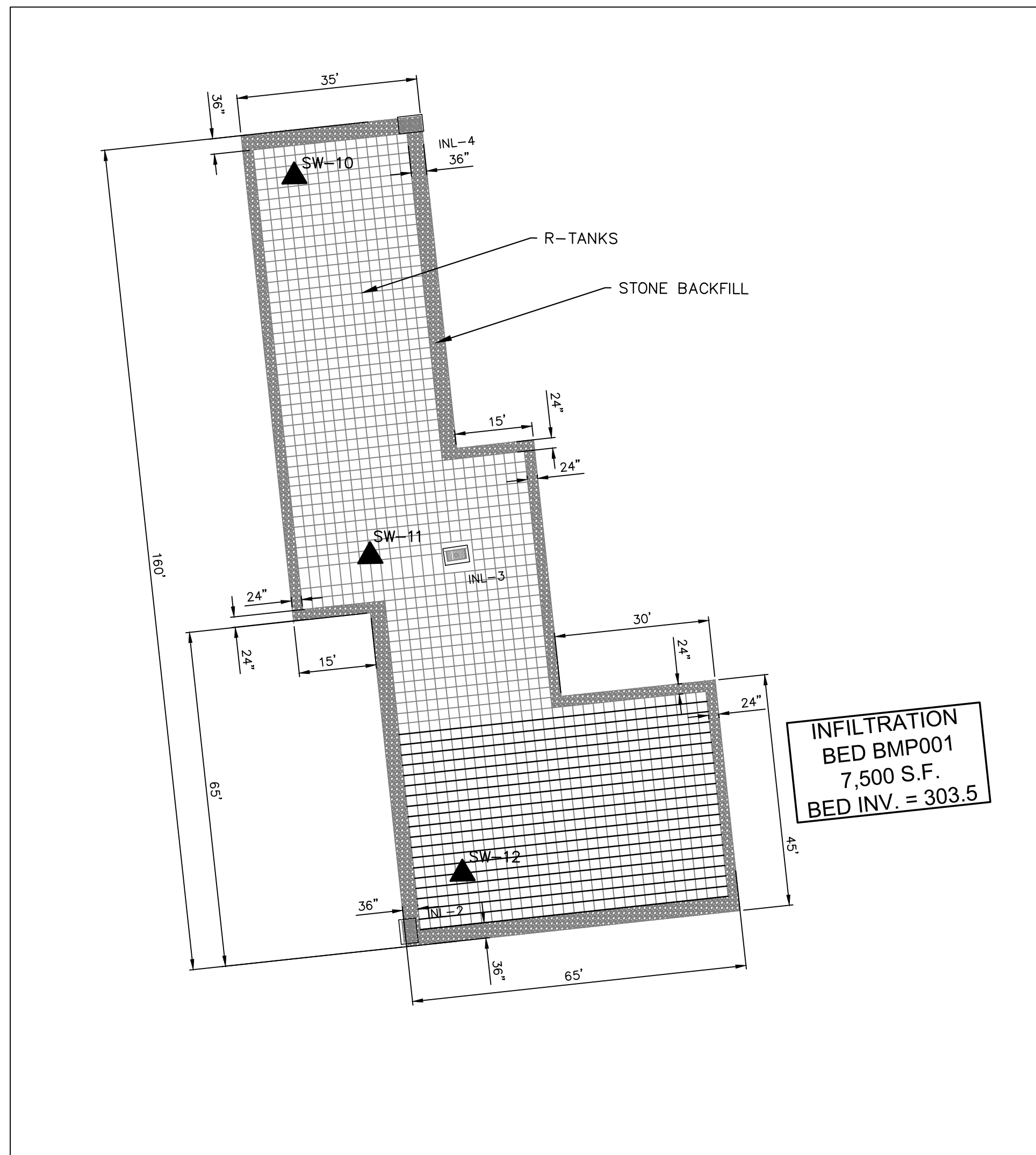


SOIL LIMITATIONS

LIMITATIONS	RESOLUTIONS
CUTBANKS CAVE	LAYBACK SLOPES
CORROSION 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 / HYDRO INCLUSIONS	AVOID
LOW STRENGTH / LANDSLIDE PRONE	LAYBACK SLOPES - DESIGN FOR CONDITION
SLOW PERCOLATIONS	DRAINAGE DITCH
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 SHIMMLES	FLUG OR MITIGATE KNOWN SHIMMLES, PROVIDE POSITIVE SURFACE
DROUGHTY	APPLY COMPOST IF MOISTURE RETENTION IS REQUIRED
EASILY ERODIBLE	TAKE EXTRA CARE IN IMPLEMENTATION OF EPC PLAN
FLOODING	USE PUMPED WATER FILTER BAG OR AVOID
POOR SOURCE OF TOPSOIL	IMPORT TOPSOIL
PONDING	USE PUMPED WATER FILTER BAG OR AVOID

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 RUBBER OR WASTE MATERIALS PRODUCED BY CONTRACTOR'S WORKERS SHALL BE PROTECTED FROM DISSEMINATION BY WIND, RAIN, OR ANIMALS, AND SHALL BE LEGALLY DEPOSED OF REGULARLY. ANY CONTAMINATED RUBBER OR OTHER UNDESIRABLE MATERIALS TRAPPED BY SILT BARRIER FACILITIES SHALL BE SEPARATED FROM SILT MATERIALS AND DEPOSED OF IN A LAWFUL MANNER.
STORMWATER WHICH HAS BEEN TRAPPED BY SILT BARRIER FACILITIES MUST BE REMOVED AND STORAGED 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 STORAGED 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 UPWIND 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 ADVISE 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.



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(g)(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 DESIGNER SHALL BE PRESENT ON-SITE 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 P.S. § 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 GRANTEE, AND PROVIDE PROOF OF FLING 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 6.4.3 Subsurface Infiltration Beds

SEQUENCE OF CONSTRUCTION

1. THE AREA PROPOSED FOR INFILTRATION SHALL BE FENCED TO PROTECT THE AREA FROM COMPACTION FROM CONSTRUCTION ACTIVITIES.
2. INSTALL PROPOSED STORM SEWER FROM DETENTION BASIN PROCEEDING UPSTREAM TO BMP OUTLET STRUCTURE BEFORE THE CONSTRUCTION OF THE BMP.
3. IMMEDIATELY PLACE INLET PROTECTION AT OUTLET & INLETS.
4. EXCAVATE INFILTRATION AREA TO THE DESIGN DEPTH. LIMIT THE AMOUNT OF COMPACTION AND DISTURBANCE TO THE EXISTING SOILS WITHIN THE INFILTRATION AREA.
5. FOR SUBSURFACE INFILTRATION BEDS, INSTALL 6" STONE BED FOR SUBSURFACE INFILL AND INSTALL PERFORATED PIPE NETWORK AND ASSOCIATED STRUCTURES. THEN FILL IN REMAINING AREA WITH AASHITO #3 STONE TO THE DESIGN DEPTH IN 6" MAXIMUM LIFTS. CONSTRUCT PARKING LOT AS SHOWN ON THE LAND DEVELOPMENT PLANS TO STABILIZE THE AREA.

NOTES:

1. THE INFILTRATION SURFACE SHALL BE PROTECTED DURING CONSTRUCTION FROM SEDIMENTATION.
2. EXCAVATION OF THE PROPOSED INFILTRATION BMPs SHOULD BE COMPLETED FROM THE PERIMETER OF THE PROPOSED BMP AND OUTSIDE ANY OTHER INFILTRATION BMP WHERE POSSIBLE. WHERE EXCAVATION CANNOT BE COMPLETED FROM THE PERIMETER OF THE BMP, BULK EARTHWORK MAY BE COMPLETED TO AN ELEVATION WHICH IS 1 FOOT ABOVE THE INFILTRATION SURFACE. THE FINAL 1 FOOT OF MATERIAL SHOULD BE EXCAVATED WITH A HOE OR SIMILAR EQUIPMENT. EXCAVATION FROM THIS POINT SHOULD BE PER THE MANUFACTURE OF THE UNDERGROUND TANK SYSTEM.
3. THE USE OF LOW GROUND PRESSURE (LGP) MACHINES IS ALLOWED AS LONG AS THE SPECIFICATIONS OF THE MACHINE TO BE USED ARE PROVIDED AT THE PRE-CONSTRUCTION MEETING AND IT IS VERIFIED PRIOR TO EXCAVATION THAT THE PROPOSED MACHINE IS A LGP MACHINE.
4. REGARDLESS OF THE EXCAVATION TYPE, THE INFILTRATION SURFACE SHALL BE SCARIFIED.
5. STRIP TOPSOIL FROM BMP (REMOVING TEMPORARY CONSTRUCTION FENCE) AND STOCKPILE AS SHOWN ON THE PLAN, FERTILIZE, SEED AND MULCH STOCKPILE.
6. WITH LIGHT EQUIPMENT, EXCAVATE BED SUBGRADE AS SHOWN ON THE PLAN, BEING CAREFUL NOT TO COMPACT SUBGRADE.
7. SCARIFY SUBGRADE USING HAND TOOLS OR LIGHT EQUIPMENT, PLACE GEOTEXTILE ON PREPARED SUBGRADE AND BEGIN PLACING STONE WITHIN THE INFILTRATION BED. STONE SHALL BE PLACED WITH LIGHT EQUIPMENT WORKING FROM THE UPSLOPE SIDE. STONE IS PLACED, STONE IS PLACED, INSTALL PERF HDPE DISTRIBUTION PIPES AS SHOWN ON THE PLANS AS WELL AS THE INFLOW AND OUTFLOW PIPES.
8. UPON COMPLETION OF THE INFILTRATION BED INCLUDING ALL PIPING, PLACE FILL MATERIAL AND TOPSOIL.
9. INFILTRATION BED SHALL BE PROTECTED FROM SEDIMENT AT ALL TIMES. ALL UPSLOPE INLETS SHALL BE INSTALLED WITH FILTERS OR BLOOKEED.

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 CAPING 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.

BMP 6.6.4 WATER QUALITY FILTERS AND HYDRODYNAMIC DEVICES
SEQUENCE OF CONSTRUCTION

1. STABILIZE ALL CONTRIBUTING AREAS BEFORE INSTALLING AND CONNECTING PIPES TO THESE INLETS
2. FOLLOW MANUFACTURE'S GUIDELINES FOR INSTALLATION. DO NOT USE WATER INSERTS DURING CONSTRUCTION UNLESS PRODUCT IS DESIGNED PRIMARILY FOR SEDIMENT REMOVAL. (SOME PRODUCTS HAVE ABSORPTION COMPONENTS THAT SHOULD BE INSTALLED POST-CONSTRUCTION.)

NOTES:

1. INLETS SHOULD BE INSPECTED WEEKLY DURING CONSTRUCTION.
2. POST-CONSTRUCTION, THEY SHOULD BE EMPTIED WHEN OVER HALF FULL OF SEDIMENT (AND TRASH) AND CLEANED AT LEAST TWICE A YEAR. THEY SHOULD BE INSPECTED AFTER RUNOFF EVENTS.
3. WATER QUALITY INSERTS THAT PRIMARILY CATCH SEDIMENT AND DETRITUS FROM AREAS SUCH AS LAWNS MAY REUSE THE WASTE ON SITE.

Subsurface Infiltration Bed Notes:

1. CATCH BASINS AND INLETS (UPGRADIENT OF AN INFILTRATION BMPS) SHOULD BE INSPECTED AND CLEANED AT LEAST TWO TIMES PER YEAR AND AFTER RUNOFF EVENTS.
2. INSPECT AFTER RUNOFF EVENTS AND MAKE SURE THAT RUNOFF DRAINS DOWN WITHIN 72 HOURS. MOSQUITOES SHOULD NOT BE A PROBLEM IF THE WATER DRAINS IN 72 HOURS. MOSQUITOES REQUIRE A CONSIDERABLY LONG BREEDING PERIOD WITH RELATIVELY STATIC WATER LEVELS.
3. INSPECT FOR ACCUMULATION OF SEDIMENT, DAMAGE TO OUTLET CONTROL STRUCTURES, EROSION CONTROL MEASURES, SIGNS OF WATER CONTAMINATION/SPILLS.
4. REMOVE ACCUMULATED SEDIMENT AS REQUIRED. RESTORE ORIGINAL CROSS SECTION AND INFILTRATION RATE. PROPERLY DISPOSE OF SEDIMENT.

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.

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.
IBIDUFERTILIZER 31-0-0, 61 LBS. PER 1,000 S.Y.

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

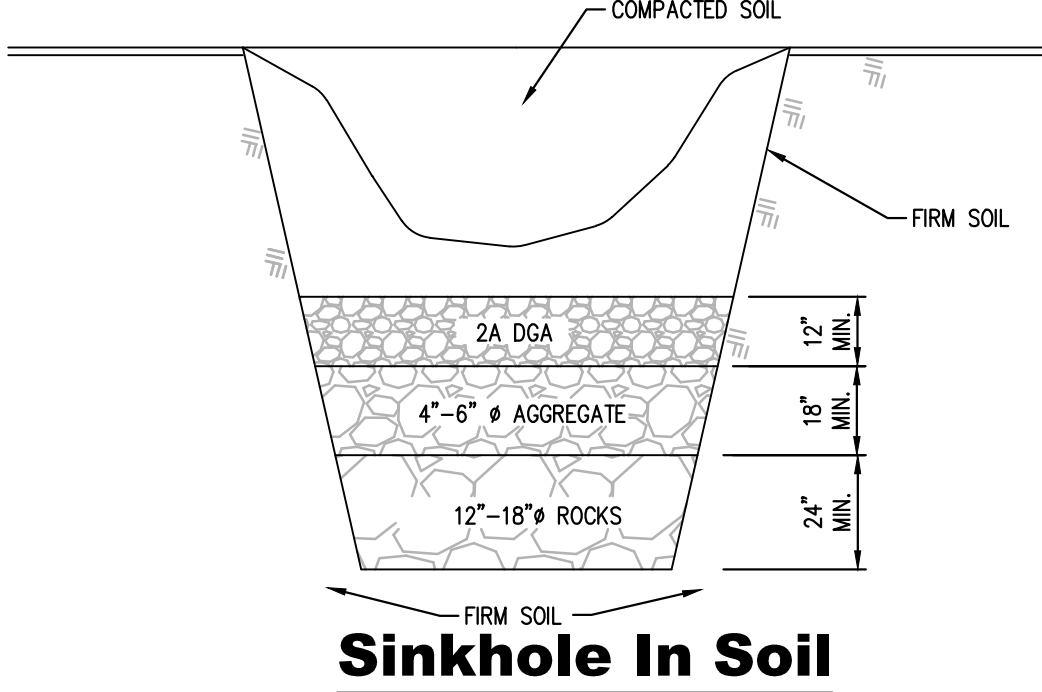
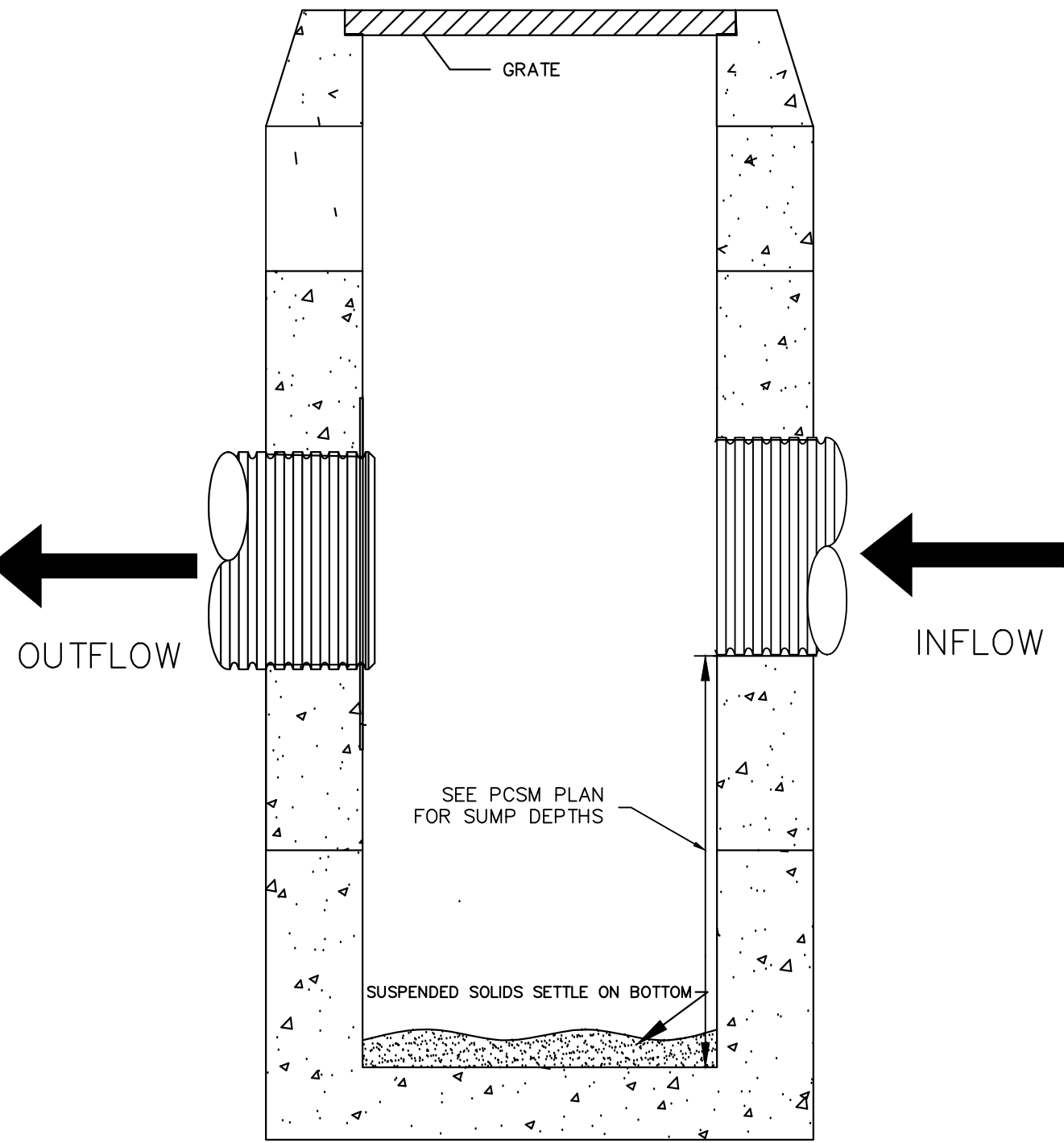
General Maintenance Schedule for Stormwater Management BMPS:

FREQUENCY	MAINTENANCE ACTIVITY	REMEDY
WEEKLY OR WHEN NEEDED	1. MOW LAWN AREAS -- MOW WHEN NEEDED 2. CHECK FOR DAMAGE TO VEGETATED AREAS *3. CHECK FOR SIGNS OF EROSION *4. CHECK FOR STANDING WATERS IN DETENTION & INFILTRATION BMPS *72 HOURS AFTER STORM	1. DO NOT CUT SHORTER THAN RECOMMENDED -- TURF COULD DIE OFF 2. DO NOT CUT SHORTER THAN RECOMMENDED -- TURF COULD DIE OFF 3. RE-GRADE AND RE-SEED AFFECTED AREAS 4. FILL INFILTRATION AREA TO A DEPTH OF 6" AND RE-SEED
MONTHLY	1. INSPECT VEGETATION 2. MINIMAL MOWING OF VEGETATION IN VEGETATED SWALES 1. REMOVE SEDIMENT, TRASH, AND DEBRIS AROUND FACILITY 2. REMOVE INVASIVE WEEDS AROUND FACILITY *3. CHECK FOR STANDING WATER IN SWALES AND BASINS *4. CHECK FOR MOSQUITO-BREEDING HABITATS 5. CHECK FOR ANIMAL BURROWING AROUND FACILITY 6. CHECK BASIN PIPING FOR SEEPAGE AND SETTLING	1. WATER, WEED, AND SEED/REPLANT AS NECESSARY 2. MOW VEGETATION IN SWALES TO 6 INCHES MINIMUM HEIGHT 1. RAKE OR PICK UP SEDIMENT, TRASH, AND DEBRIS 2. REMOVE WEEDS AND RE-SEED WHERE NECESSARY 3. REGRADE FLAT SPOT IF THIS DOES NOT WORK. PROVIDE POSITIVE SLOPE WITH FILL 4. REMOVE MOSQUITO-BREEDING HABITAT, INCLUDING WATER FILLED DEBRIS 5. REMOVE ANIMAL PRESENCE, FILL IN BURROW, REGRADE, AND RE-SEED 6. REMOVE CAUSE OF SEEPAGE, PIPING, AND/OR SETTLING; RESTORE AREA
EVERY 3 MONTHS		
EVERY 6 MONTHS	1. FERTILIZE LAWN AREA 2. CHECK FOR TREES AND WOODY VEGETATION AROUND FACILITY 3. MAINTENANCE OF STORMWATER STRUCTURES	1. NOT APPLICABLE 2. REMOVE VEGETATION, INCLUDING ROOTS, FILL-IN AND RE-SEED WHERE NECESSARY 3. REMOVE FLOATABLES, OIL, AND GREASE AND DISPOSE AT APPROPRIATE SITE AND REMOVE SEDIMENT WHEN DEPTH OF SEDIMENT ACCUMULATION IS > THAN 1/4 DEPTH OF SUMP
EVERY 12 MONTHS	1. CHECK FOR SETTLING AROUND FACILITY 2. INSPECT CLEAN OUT PORTS & OUTLET STRUCTURES 3. INSPECT FOR PROPER VEGETATION GROWTH AND MAINTAIN 85% COVER	1. FILL-IN SETTLED AREA, REGRADE, AND RE-SEED AREA 2. REMOVE DEBRIS AND SEDIMENT AS NECESSARY 3. WATER, WEED, SEED/REPLANT, AND MULCH AS NECESSARY

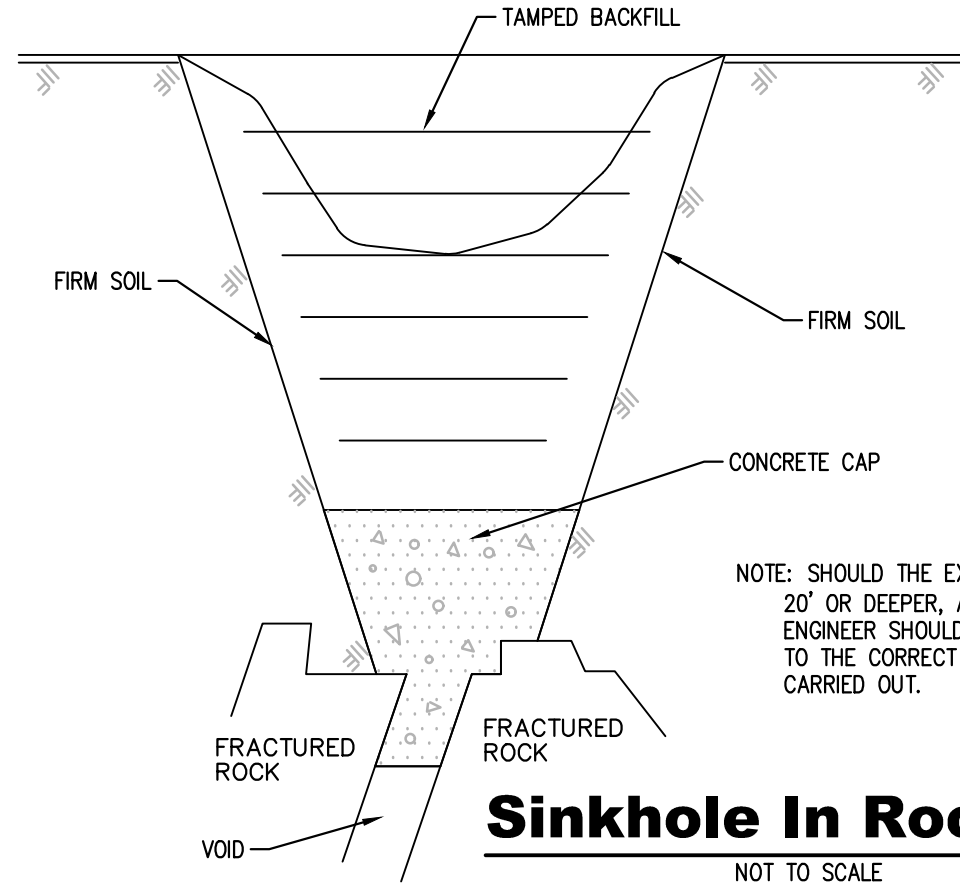
* ALSO AFTER EVERY MAJOR STORM EVENT (>1" RAINFALL DEPTH)

Maintenance and Operation Schedule for Stormwater Management BMPS:

FREQUENCY	MAINTENANCE ACTIVITY	REMEDY
WEEKLY OR AS NEEDED	1. INSPECT INLETS SUMPS FOR SEDIMENT, DEBRIS & OIL ACCUMULATION 1. CLEAN THE INLET	1. CHECK AND RECORD SEDIMENT DEPTH AND SURFACE POLLUTANTS TO PLAN FUTURE MAINTENANCE. IT IS BEST TO SCHEDULE MAINTENANCE BASED ON SOLIDS COLLECTED IN SUMP. 1. MAINTENANCE IS BEST PERFORMED WITH A VACUUM TRUCK. ALL COLLECTED WASTED MUST BE HANDLED AND DISPOSED OF ACCORDING TO LOCAL, STATE, AND FEDERAL REGULATIONS.
ANNUALLY	1. INSPECT INLET SUMPS FOR SEDIMENT, DEBRIS & OIL ACCUMULATION	1. MAINTENANCE IS BEST PERFORMED WITH A VACUUM TRUCK. ALL COLLECTED WASTED MUST BE HANDLED AND DISPOSED OF ACCORDING TO LOCAL, STATE, AND FEDERAL REGULATIONS.
YEARLY	1. INSPECT CLEAN OUT PORT	1. REMOVE DEBRIS FROM DRAINAGE PIPE AS NECESSARY



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.



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 20C 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.

AVOIDANCE MEASURE: THE PROPOSED PROJECT IS LOCATED IN THE VICINITY OF NORTHERN LONG-EARED BAT SPRING STAGING/FALL SWARMING HABITAT. TO ENSURE TAKE IS NOT REASONABLE CERTAIN TO OCCUR, DO NOT CONDUCT TREE REMOVAL FROM MAY 15 TO AUGUST 15.

PRELIMINARY/FINAL LAND DEVELOPMENT

POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS

PROJECT TITLE: PHOENIX TUBE DRIVE

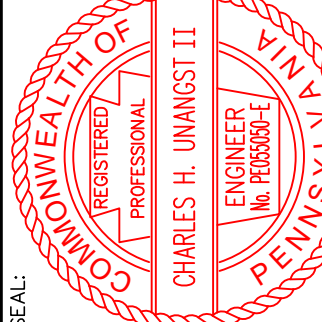
925 BETHEHEM DRIVE

1" = 30'

CITY OF BETHEHEM
NORTHAMPTON COUNTY
PENNSYLVANIA

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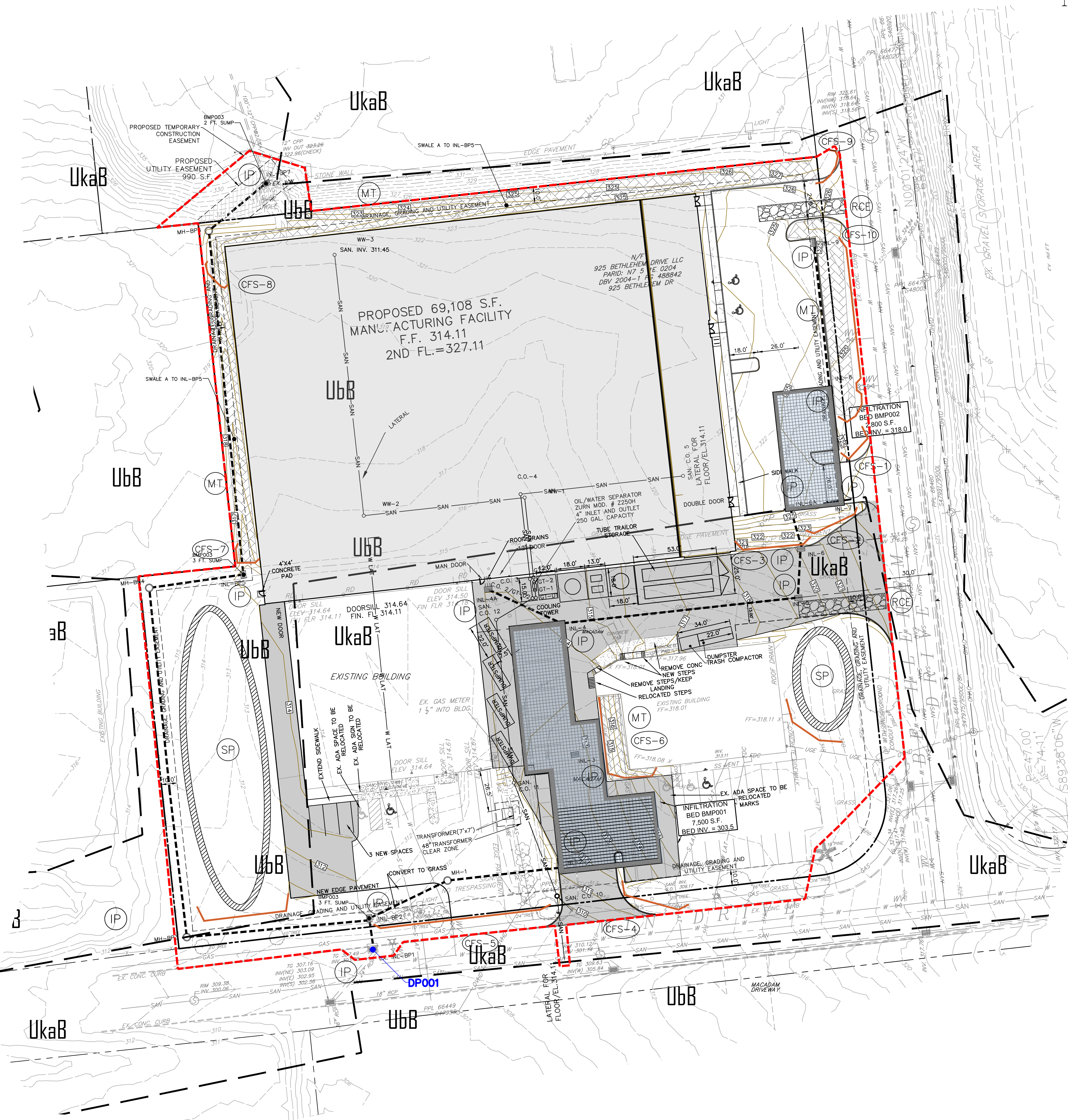


NO.	REVISIONS	DATE	DRAWN BY	CHECKED BY
1	PER. ACOD COMMENTS	9/7/23	DA	DAU
2	FEEL CITY REVIEW	11/02/23	SCALE: 1"=30'	DATE: 7/28/23
				PROJECT NO. 4998
				SHEET NO. 12 OF 17

	PROPOSED CURB
	PROPOSED DEPRESSED CURB
	PROPOSED CONCRETE SIDEWALK
	PROPOSED UNDERGROUND ELECTRIC
	PROPOSED GAS LINE
	PROPOSED SANITARY SEWER LINE
	PROPOSED WATER LINE
	PROPOSED FIRE HYDRANT/GATE VALVE
	PROPOSED STORM SEWER
	PROPOSED STORM SEWER MANHOLE
	PROPOSED STORM SEWER INLET

1. TOP OF IRON PIN AT THE SW CORNER OF PARCEL
N7-5-1E, ALSO THE SE CORNER OF LANDS N/F OF
ZARNAS HOLDING COMPANY LLC
ELEV=316.33
 2. TOP OF IRON PIN AT THE NE CORNER OF PARCEL
N7-5-1L, 164.4 FT. EAST OF BM-1
ELEV=315.27
 3. TOP OF IRON PIN AT THE SE CORNER OF PARCEL
N7-5-1E, ALONG THE WEST RIGHT-OF-WAY OF
BETHEHEM DRIVE, 231.7 FT. EAST OF BM-2
ELEV=324.14
- NOTE: FOR THE TWO BENCHMARKS THAT WILL BE
DESTROYED DURING CONSTRUCTION, THE CONTRACTOR
SHALL ESTABLISH A NEW BENCHMARK/BENCHMARKS.

	LIMIT OF DISTURBANCE/NPDES BOUNDARY
	INLET PROTECTION
	ROCK CONSTRUCTION ENTRANCE WITH WASH ROCK
	COMPOST FILTER SOCK
	EROSION CONTROL MATTING (NAG S75) STAPLE PATTERN D
	HIGH VISIBILITY FENCE
	CONCRETE WASHOUT
	STOCKPILE



<u>STRUCTURE</u>	<u>SIZE</u>
CFS-1	12"
CFS-2	12"
CFS-3	12"
CFS-4	12"
CFS-5	12"
CFS-6	12"
CFS-7	12"
CFS-8	24"
CFS-9	24"
CFS-10	12"

<u>STRUCTURE</u>	<u>DRAINAGE AREA</u> <u>(AC.)</u>
INL-2	0.18
INL-3	0.44
INL-4A	0.02
INL-4	0.14
INL-5	0.04
INL-6	0.04
INL-7	0.18
INL-8	0.19
INL-9	0.08
INL-BP-8	0.15
INL-BP-5 *	0.96
INL-BP-2 *	0.52

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PLAN TITLE
EROSION & SEDIMENTATION CONTROL PLAN

PROJECT TITLE
PHOENIX TUBE
925 BETHLEHEM DRIVE

0' 10' 20' 30' 40' 50'

0' 10' 20' 30' 40' 50'

4" = 50'

A vertical color calibration bar. The top half features a grayscale ramp with 11 steps, ranging from white to black. The bottom half features a color checker chart with 24 color patches arranged in two columns of 12. The patches include primary colors, skin tones, and various shades of gray.

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

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

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
NORTHAMPTON COUNTY CONSERVATION DISTRICT
LEHIGH VALLEY PLANNING COMMISSION

Standard Erosion And Sediment Control Plan Notes

- 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 SUBMITAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
- 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 P&SM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION, THE P&SM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON-SITE PRECONSTRUCTION MEETING.
- 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 1-800-242-7776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
- ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE REQUESTED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.
- AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIALS.
- 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 COMENCE 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.
- 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.
- TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAP(S) IN THE MANNER NECESSARY TO COMPLETE THE FRESH 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. STOCKPILES SHALL BE COVERED WITH 20% VOLUME FLAT OR FLATLIER.
- 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 SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.
- 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 2601 ET. SEQ., 2711, AND 2871 ET. SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURIED, BURNED, DUMPED, OR DISCHARGED AT THE SITE.
- 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 ACTIVELY USED.
- THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM PP-001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE AT A REGULARLY SCHEDULED INTERVAL AS PART OF THE SUBMITTAL TESTING PROGRAM.
- ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS.
- 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, RESURFACING, RESEEDING, REMULCHING AND REINVENTING MUST BE PERFORMED IMMEDIATELY. IF THE E&S BMPs FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPs, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
- 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 AGENCIES AND OFFICIALS AT THE TIME OF INSPECTION.
- SEDIMENT TRAPPED 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 SWEEP INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
- ALL SEDIMENT REMOVED FROM BMPs SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
- AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARPED TO A MINIMUM DEPTH OF 3 TO 5 INCHES OR 4 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.
- ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLUFFAGE, 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.
- ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
- FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOIL, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
- FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
- FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
- SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
- ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. OUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDING SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.
- 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 REQUIRED TO PREVENT EROSION. AREAS WHICH HAVE BEEN REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATION. THOSE AREAS WHICH HAVE NOT BEEN REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
- PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UPON, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A MINIMUM DEPTH OF 3 TO 5 INCHES. MULCH AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
- 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.
- UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPs.
- AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPs MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT BMPs. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPs SHALL BE STABILIZED IMMEDIATELY. IN PLACE PRIOR TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON.
- 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.
- 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 IMPOSED 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 \$100,000 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.

- 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.
- ALL CHANNELS SHALL BE KEPT FREE OF OBSTRUCTIONS INCLUDING BUT NOT LIMITED TO FILL, ROCKS, LEAVES, WOODY DEBRIS, ACCUMULATED SEDIMENT, AND EXCESS VEGETATION, AND SPECIFICATIONS FOR SUBSURFACE DRAINS OR OTHER APPROVED METHOD.
- 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.
- CHANNELS HAVING RIPRAP, POND MATTRASS, OR GABION LININGS MUST BE SUFFICIENTLY OVER-EXCAVATED SO THAT THE DESIGN DIMENSIONS WILL BE PROVIDED AFTER PLACEMENT OF THE PROTECTIVE LINING.
- 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.
- SEDIMENT TRAPS SHALL BE PROTECTED FROM UNAUTHORIZED ACCESS BY THIRD PARTIES.
- 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.
- 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.
- EROSION CONTROL BLANKETING SHALL BE INSTALLED ON ALL SLOPES 3% OR STEEPER WITHIN 90 FEET OF A SURFACE WATER AND ON ALL OTHER DISTURBED AREAS SPECIFIED ON THE PLAN MAPS AND/OR DETAIL SHEETS.
- FILL MATERIAL FOR EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS.

Buffers (Riparian and Forest)

102.4(B)(5)(XIV) NO EXISTING RIPARIAN OR FOREST BUFFERS ARE LOCATED ON THE PROJECT. NO RIPARIAN OR FOREST BUFFERS ARE PROPOSED FOR THIS PROJECT. SINCE THERE ARE NO FOREST OR RIPARIAN WETLANDS LOCATED ON THE SUBJECT PARCEL, NOR WITHIN 150' OF THE LIMIT OF CONSTRUCTION BOUNDARY.

Potential Thermal Impacts to Surface Water

102.4(B)(5)(XIII) THE PROJECT IS DESIGNED TO MINIMIZE THE THERMAL IMPACTS TO SURFACE WATERS OF THE PROJECT. DISCHARGES TOW. THE PROJECT PROPOSES SUBSURFACE INFILTRATION BEDS TO ASSIST TO PREVENT THERMAL IMPACTS TO THE SURFACE WATERS.

Erosion and Sediment Plans Consistent with PCSM Plans

102.4(B)(5)(XIV) NO RIPARIAN BUFFERS ARE LOCATED OUTSIDE THE LIMITS OF CONSTRUCTION. NO PROPOSED INFILTRATION BEDS ARE PROPOSED OUTSIDE THE PROPOSED GRADING.

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, PRECONSTRUCTION, 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-SEEDD 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 DRAINAGE FACILITIES LOCATED ON PRIVATE PROPERTY MUST BE MAINTAINED BY THE OWNER OF THE PROPERTY.

Temporary Stabilization & Permanent Stabilization

- MULCH OR STRAW MULCH MUST BE APPLIED AT 3.0 TONS PER ACRE.
 - HAY WITH MULCH CONTROL NETTING OR EROSION CONTROL BLANKETS MUST BE INSTALLED ON ALL SLOPES 3:1 AND STEEPER."
 - 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."
- 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.
 - 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)(X) "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."
- 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 2601 ET. SEQ., 2711, AND 2871 ET. SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURIED, BURNED, DUMPED, OR DISCHARGED AT THE SITE.
 - 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 SPILL 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 SEEDD WITH A CONTRACTOR'S MIX AS LISTED BELOW:			
DATE	TYPE OF MIXTURE	PER 1,000 SQ. ACRES	PER ACRE
MARCH 1 TO JUNE 15	ANNUAL RYEGRASS — 100%	40 LB.	40 LB.
JUNE 15 TO AUG. 15	SUDAGRASS — 100%	40 LB.	40 LB.
AUG. 15 TO SEPT. 15	ANNUAL RYEGRASS — 100%	07 LB.	30 LB.
MARCH 1 TO AUG. 15	WINTER WHEAT — 100%	4.1 LB.	180 LB.
AUG. 15 TO OCT. 15	WINTER WHEAT — 100%		
OCT. 15 TO NOV. 15	HAY — 100%		
NOV. 15 TO FEB. 15	WINTER WHEAT — 100%		
FEB. 15 TO MAY 15	WINTER WHEAT — 100%		
MAY 15 TO AUG. 15	WINTER WHEAT — 100%		
AUG. 15 TO OCT. 15	WINTER WHEAT — 100%		
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FEB. 15 TO MAY 15	WINTER WHEAT — 100%		
MAY 15 TO AUG. 15	WINTER WHEAT — 100%		
AUG. 15 TO OCT. 15	WINTER WHEAT — 100%		
OCT. 15 TO NOV. 15	WINTER WHEAT — 100%		
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FEB. 15 TO MAY 15	WINTER WHEAT — 100%		
MAY 15 TO AUG. 15	WINTER WHEAT — 100%		
AUG. 15 TO OCT. 15	WINTER WHEAT — 100%		
OCT. 15 TO NOV. 15	WINTER WHEAT — 100%		
NOV. 1			

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	

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

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	Wet Soil	Dry Site	Low Fertility	Acid Soil (pH 5.5-7)	Purity (%)	Ready Germ (%)	Hard Seed (%)	Total Seed (%)
Warm-Season Grasses									
Deerfoot	bunch	yes	yes	yes	yes	95	75	75	250
Woolgrass	bunch	yes	yes	yes	yes	97	75	75	1,500
Switchgrass	bunch	yes	yes	yes	yes	95	75	75	1,500
Big bluestem	bunch	yes	yes	yes	yes	95	75	75	1,500
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	yes	95	70	70	500
Oxchordgrass	bunch	yes	yes	yes	yes	95	80	80	500
Timothy	bunch	yes	no	yes	yes	95	80	80	1,230
Smooth bromegrass	sod	no	yes	yes	no	95	80	80	136
Legumes²									
Crownvetch	sod	no	yes	yes	no	98	40	30	65
Birdfoot trefoil ³	bunch	yes	no	yes	yes	98	60	20	400
Flatpea	sod	no	no	yes	yes	98	55	20	75
Serotia lespedeza	bunch	no	yes	yes	yes	98	60	20	80
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 (solons, 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.

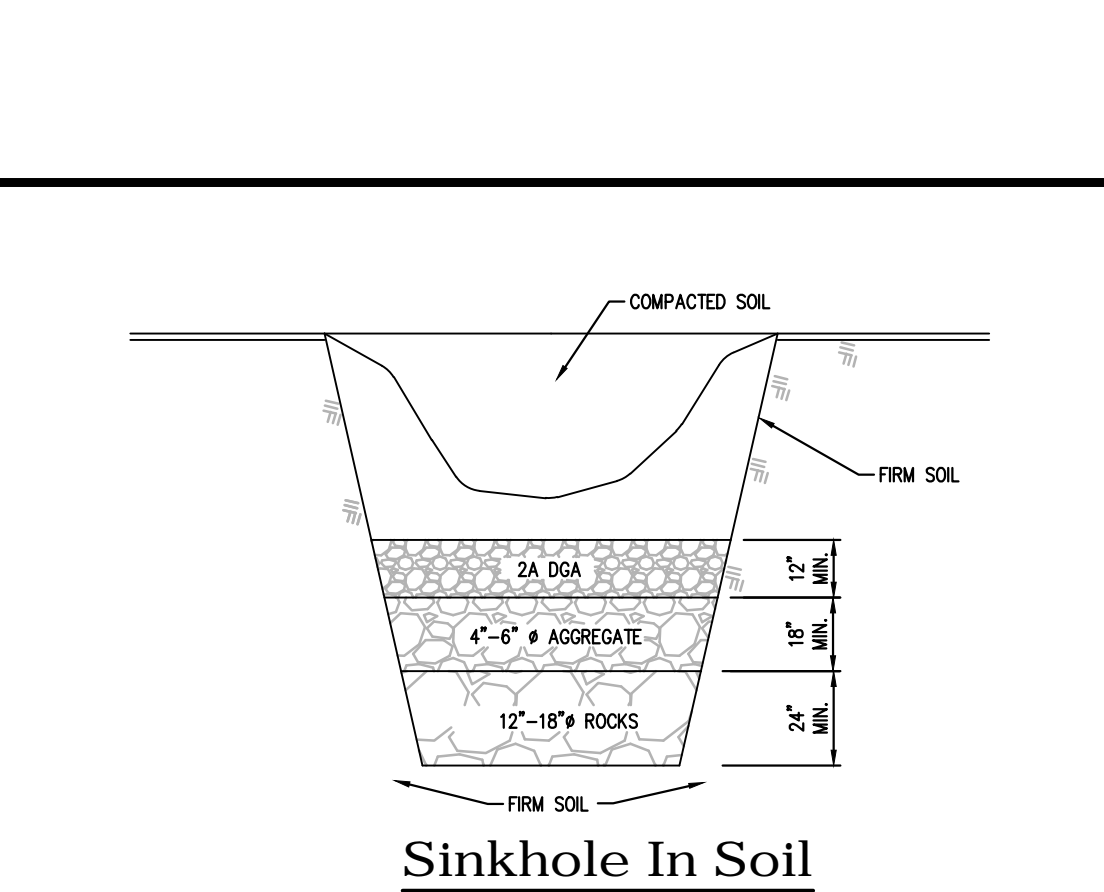
³ Minimum seed lots are truly minimum, and seed lots to be used for revegetation purposes should equal or exceed these standards. Thus, deerfootgrass should germinate 75% or better. Crownvetch should have at least 40% readily germinable seed and 30% hard seed. Commonly, seed lots are available that equal 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.

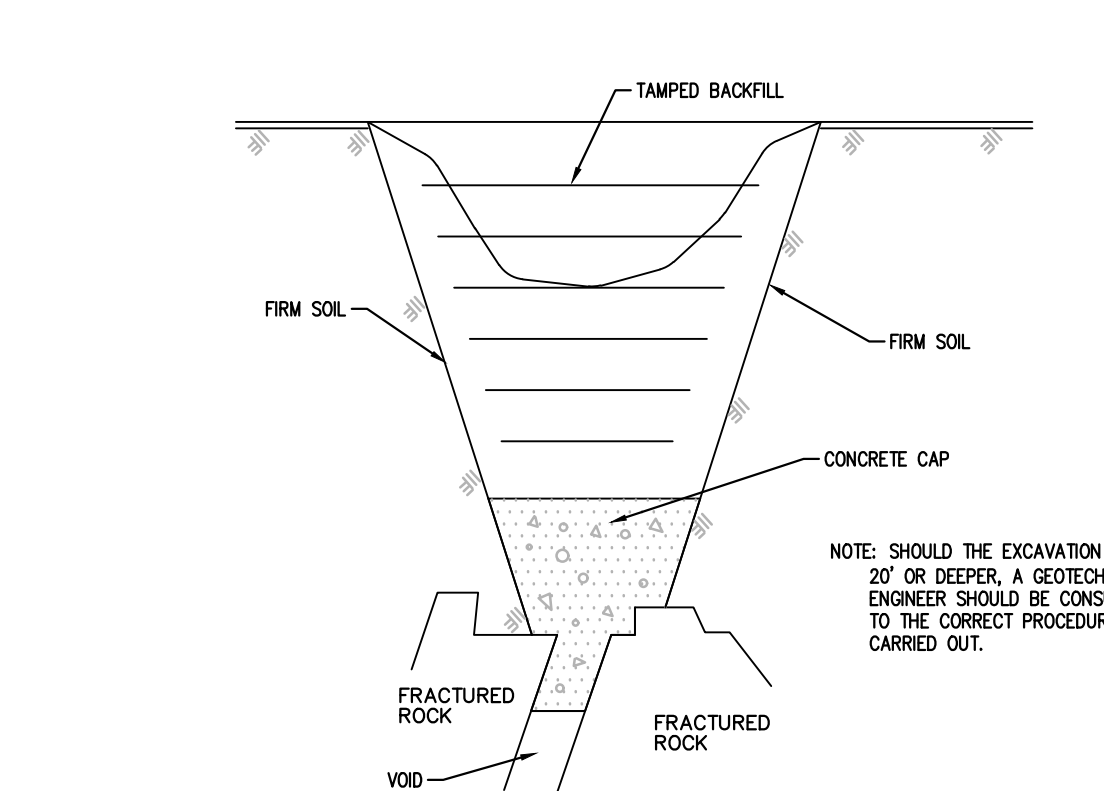
⁵ Need specific legume inoculant. Inoculant suitable for garden peas and sweetpeas usually is satisfactory for flatpeas.

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 Noncrop Land."



- 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, CONSTRUCTION GRouting MAY BE NECESSARY FOR REMEDIATION, AS DETERMINED BY A GEOTECHNICAL ENGINEER LICENSED IN THE COMMONWEALTH OF PENNSYLVANIA.
- EXCAVATE DOWN TO ROCK TO SINKHOLE THROAT OR TO A DEPTH OF 14 FEET BELOW GRADE, WHICHEVER OCCURS FIRST.
- 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, WET-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.
- BACKFILL HOLE WITH RELATIVELY IMPERMEABLE CLAY SOIL. COMPACT SOIL IN 6\"/>



- 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, CONSTRUCTION GRouting MAY BE NECESSARY FOR REMEDIATION, AS DETERMINED BY A GEOTECHNICAL ENGINEER LICENSED IN THE COMMONWEALTH OF PENNSYLVANIA.
- EXCAVATE DOWN TO BEDROCK OR TO THE SINKHOLE THROAT.
- EXPOSE THE ROCK SURFACE BY WASHING THE AREA WITH A SMALL HOSE WATER SPRAY AND INSTALL HIGHSPRINK 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.
- AFTER CONCRETE HAS SET OVERNIGHT, BACKFILL HOLE WITH RELATIVELY IMPERMEABLE CLAY SOIL. COMPACT SOIL IN 6\"/>

ADAPTED FROM VA DSWC

TABLE 11.4 Recommended Seed Mixtures					
Mixture Number	Species	Seeding Rate - Pure Live Seed ¹	Most Sites	Pure Live Seed ¹	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		
	Tall fescue, or Fine fescue, or Kentucky bluegrass, plus Redtop ³ , or Perennial ryegrass	60 35 25 15	75 40 30 3		
2 ³	Birdfoot trefoil, plus Tall fescue	6 30	6 35		
	Birdfoot trefoil, plus Reed canarygrass	6 10	6 15		
3 ⁴	Crownvetch, plus Tall fescue, or Perennial ryegrass	10 20	15 25		
	Crownvetch, plus Annual ryegrass	10 20	15 25		
6 ^{5,6}	Birdfoot trefoil, plus Crownvetch, plus Annual ryegrass	6 10 20	6 15 30		
	Flatpea, plus Tall fescue, or Perennial ryegrass	20 20 20	30 30 25		
8 ⁷	Serotia lespedeza, plus Tall fescue, plus Redtop ⁸	10 20 3	20 25 3		
	Tall fescue, plus Fine fescue	10 10	60 15		
10 ⁷	Deerfootgrass, plus Birdfoot trefoil	15 10	20 10		
	Switchgrass, or Big Bluestem, plus Birdfoot trefoil	15 15	20 10		
12 ⁷	Orchardgrass, or Smooth bromegrass, plus Birdfoot trefoil	20 25 6	30 35 10		

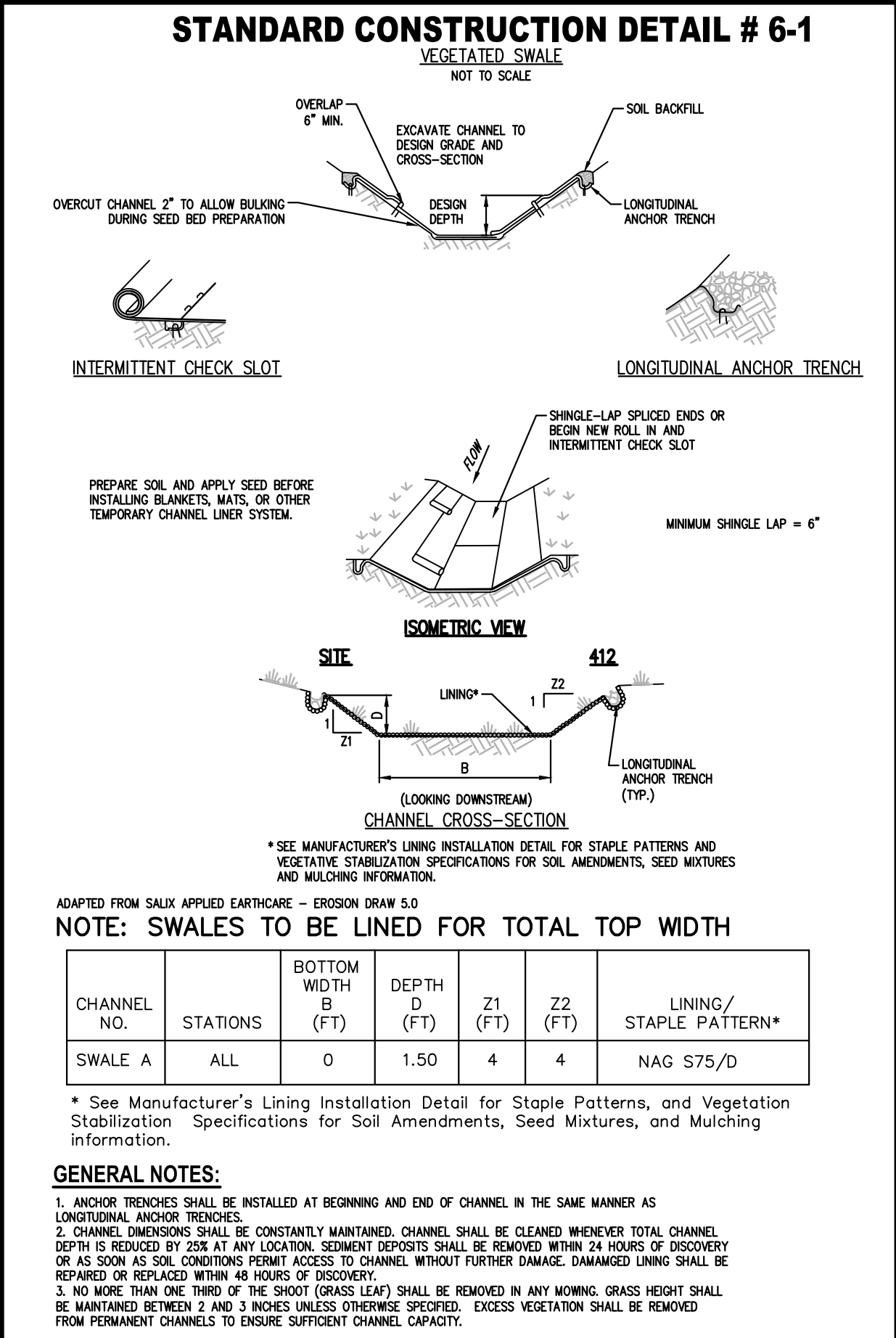
Penn State, "Erosion Control and Conservation Plantings on Noncrop Land."

- 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.
- 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.
- This mixture is suitable for frequent mowing. Do not cut shorter than 4 inches.
- 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 winged lespedeza and redtop, dilute with very sawdust, sand, rice hulls, buckwheat hulls, etc.
- Use for highway slopes and similar sites where the desired species after establishment is crownvetch.

TABLE 11.4 Recommended Seed Mixtures					
Mixture Number	Species	Seeding Rate - Pure Live Seed ¹	Most Sites	Pure Live Seed ¹	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		
	Tall fescue, or Fine fescue, or Kentucky bluegrass, plus Redtop ³ , or Perennial ryegrass	60 35 25 15	75 40 30 3		
2 ³	Birdfoot trefoil, plus Tall fescue	6 30	6 35		
	Birdfoot trefoil, plus Reed canarygrass	6 10	6 15		
3 ⁴	Crownvetch, plus Tall fescue, or Perennial ryegrass	10 20	15 25		
	Crownvetch, plus Annual ryegrass	10 20	15 25		
6 ^{5,6}	Birdfoot trefoil, plus Crownvetch, plus Annual ryegrass	6 10 20	6 15 30		
	Flatpea, plus Tall fescue, or Perennial ryegrass	20 20 20	30 30 25		
8 ⁷	Serotia lespedeza, plus Tall fescue, plus Redtop ⁸	10 20 3	20 25 3		
	Tall fescue, plus Fine fescue	10 10	60 15		
10 ⁷	Deerfootgrass, plus Birdfoot trefoil	15 10	20 10		
	Switchgrass, or Big Bluestem, plus Birdfoot trefoil	15 15	20 10		
12 ⁷	Orchardgrass, or Smooth bromegrass, plus Birdfoot trefoil	20 25 6	30 35 10		

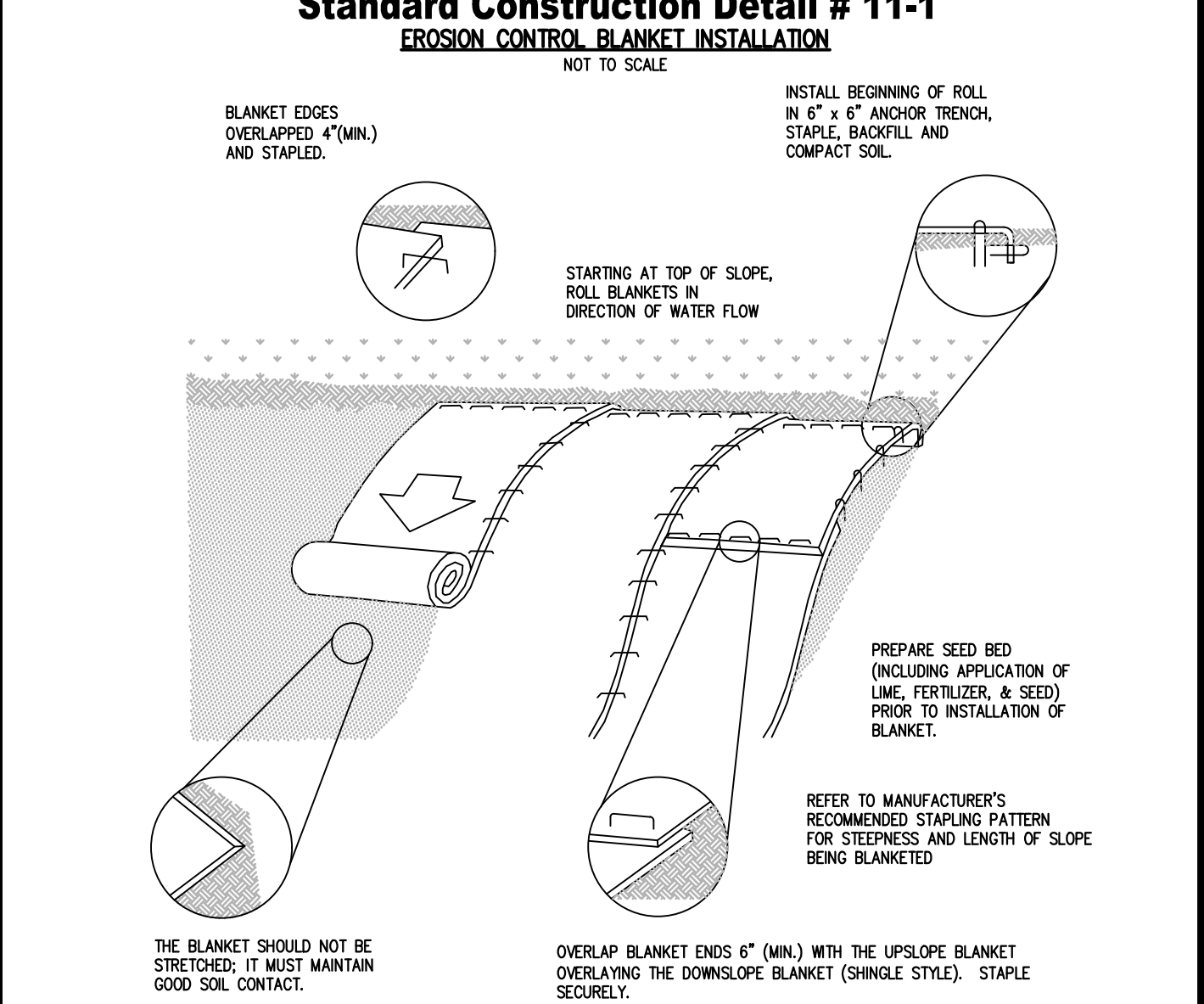
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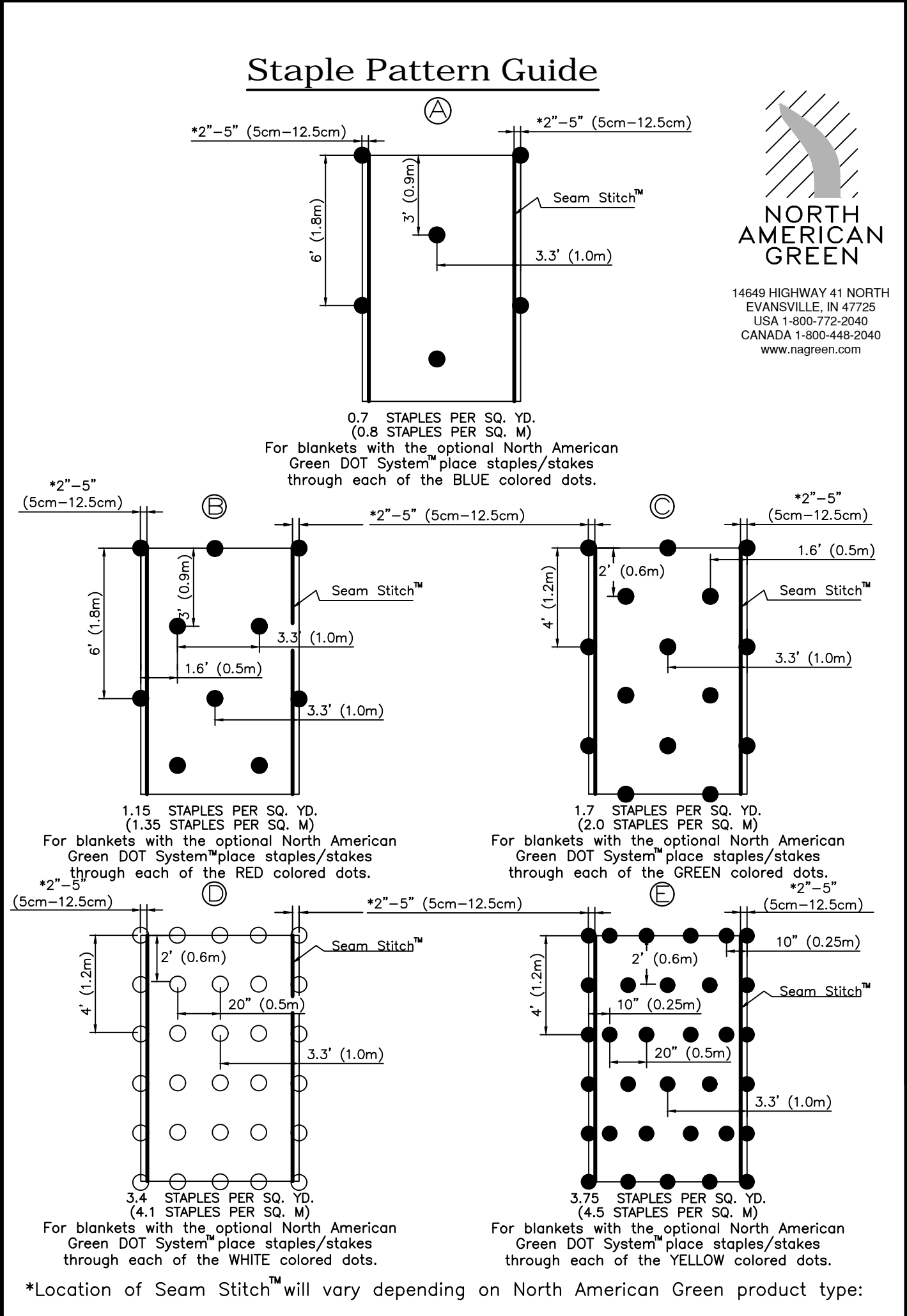
CHANNEL NO.	STATIONS	BOTTOM WIDTH B (FT)	DEPTH D (FT)	Z1 (FT)	Z2 (FT)	LINING/STAPLE PATTERN*
SWALE A	ALL	0	1.50	4	4	NAG S75/D

ADAPTED FROM SALK APPLIED EROSION CONTROL - DESIGN DRAW 5.0

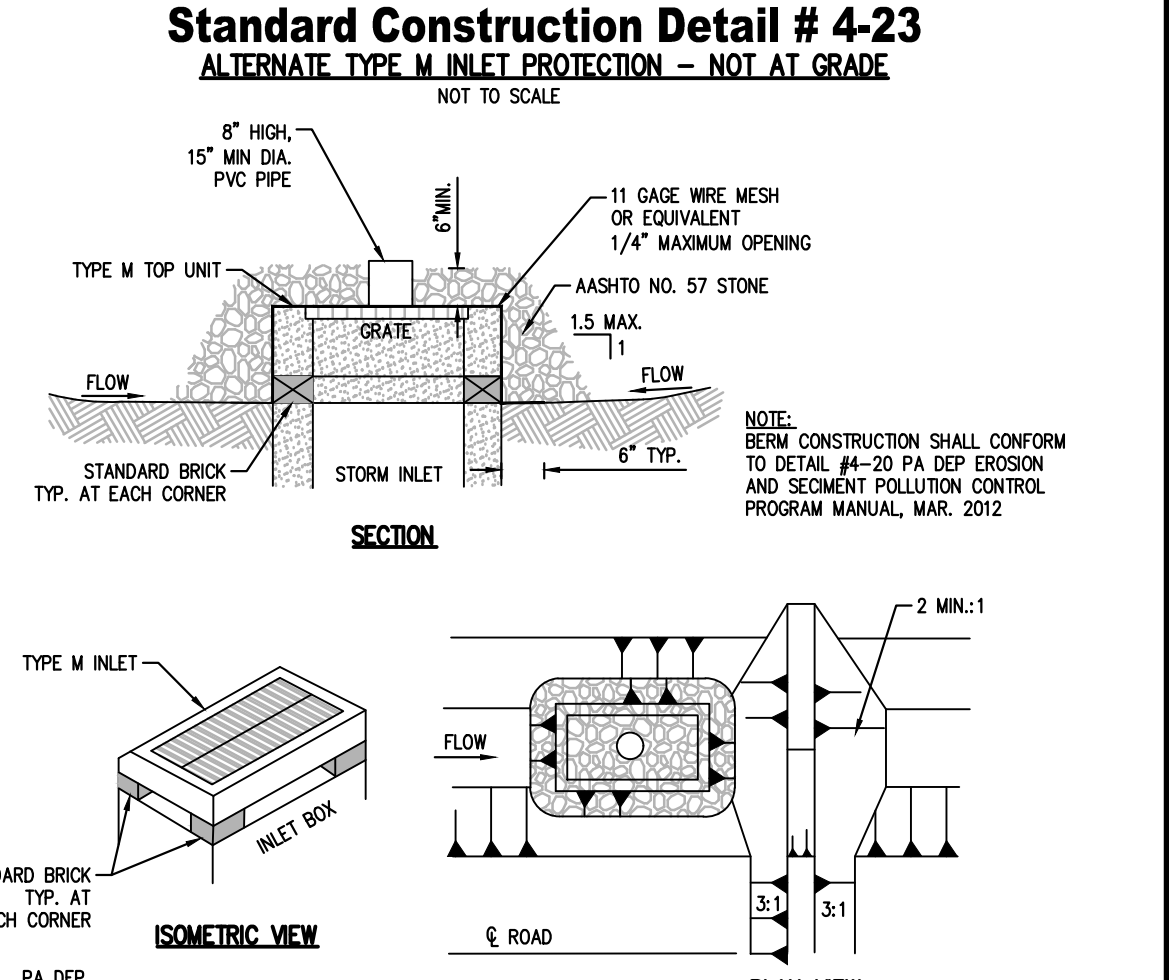


- SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PRIOR TO INSTALLING THE BLANKET.
- PROVIDE ANCHOR TRENCH AT TOP OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.
- SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.
- BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.
- THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- 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 A CALENDAR DAYS.

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

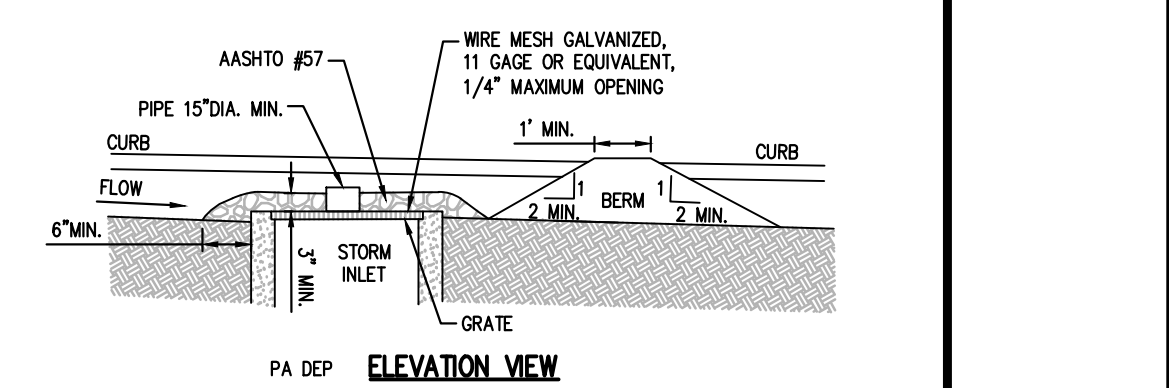
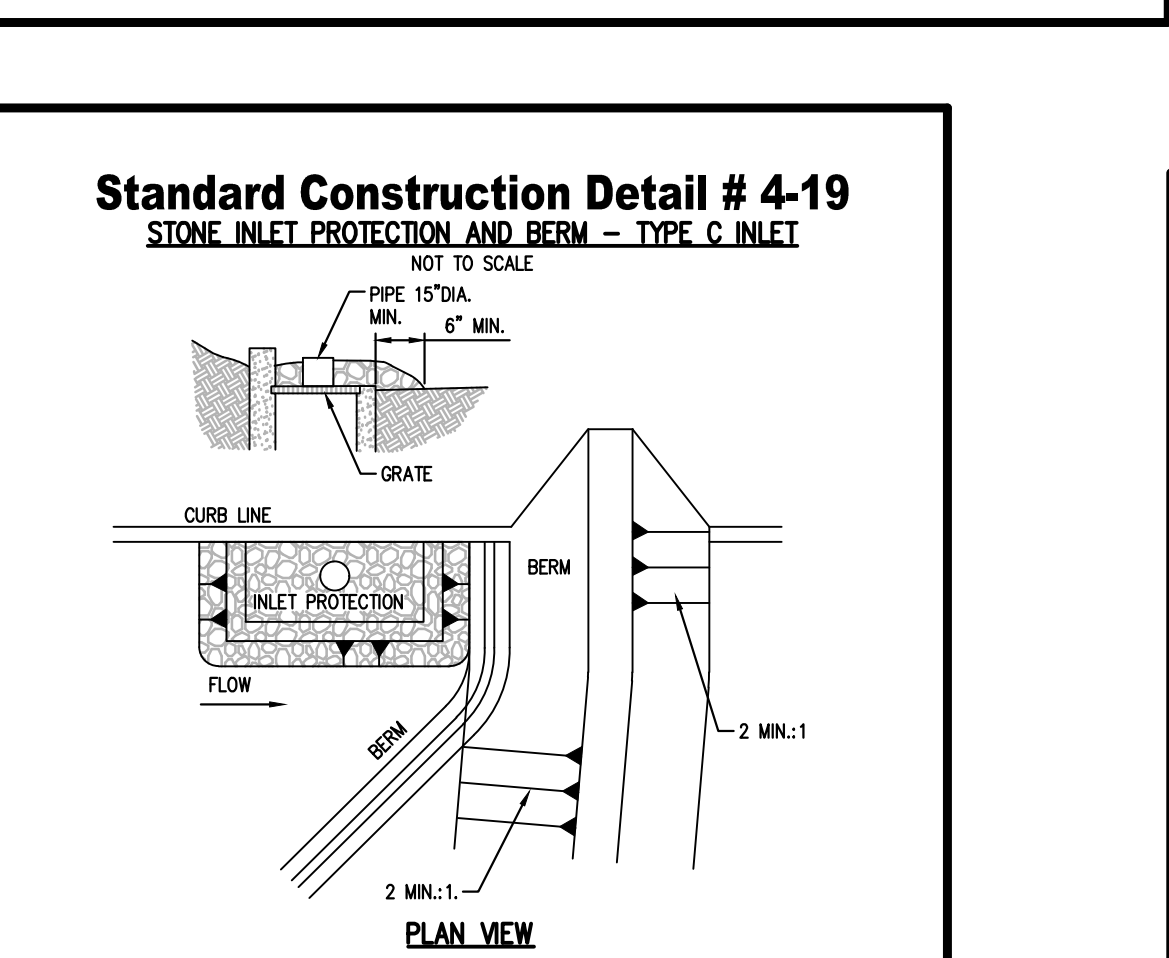


*Location of Seam Stitch will vary depending on North American Green product type:



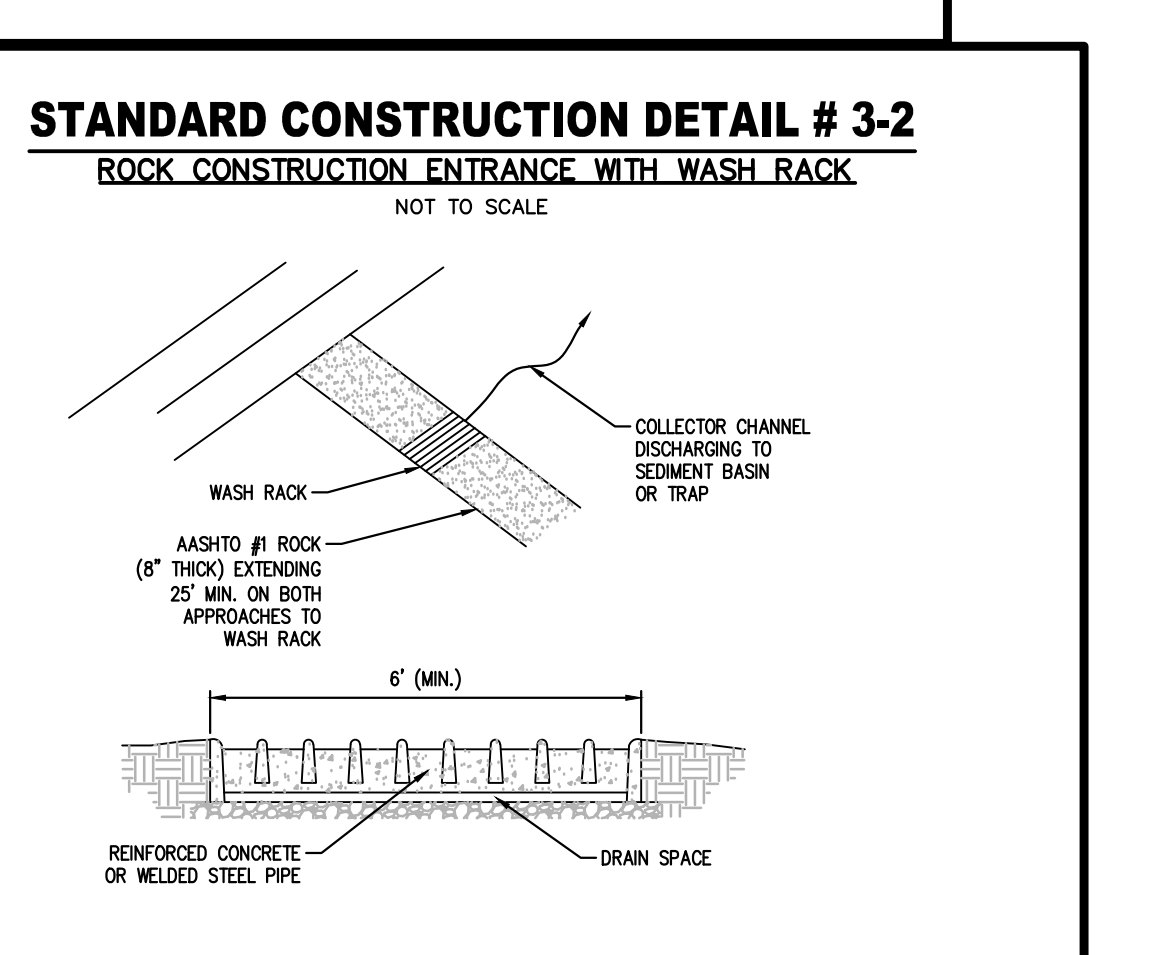
- INLET PROTECTION SHALL NOT BE REQUIRED FOR INLETS TRIBUTARY TO SEDIMENT BASINS OR SEDIMENT TRAPS. ALTERNATE TYPE C INLET PROTECTION CAN BE USED ON ONE ACRE MAXIMUM DRAINAGE AREA WITH 15\"/>

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" SCREEN
SOLUBLE SALT CONCENTRATION		5.0 ds/m (mmhos/cm) MAXIMUM



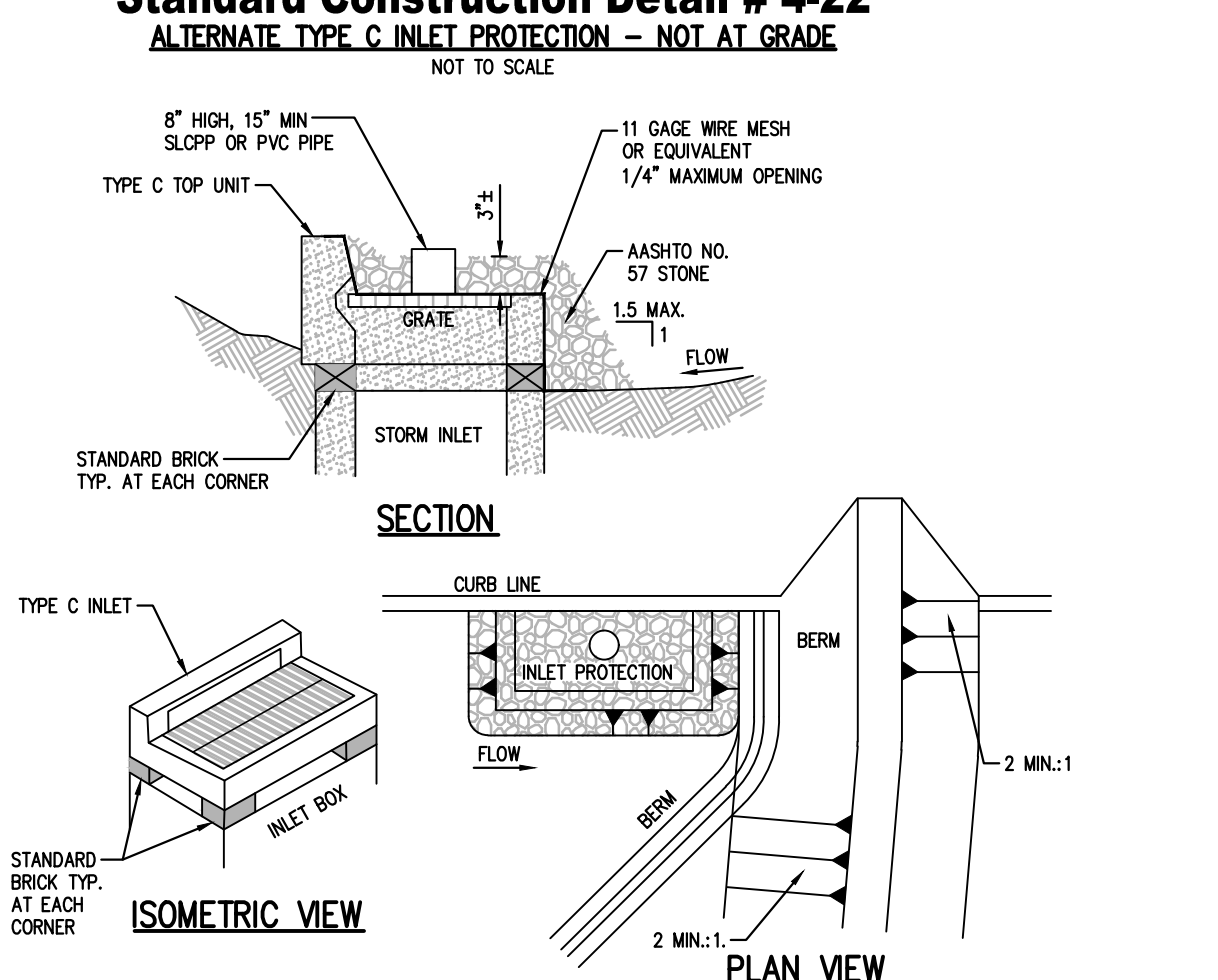
- INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.
- ROLLED EARTHEN BERM SHALL BE MAINTAINED IMMEDIATELY DOWN GRADIENT OF THE PROTECTED INLET UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. A 6\"/>

ORGANIC MATTER CONTENT		80%-100% (DRY WEIGHT BASIS)
ORGANIC PORTION		FIBROUS AND ELONGATED
PH		5.5-8.0
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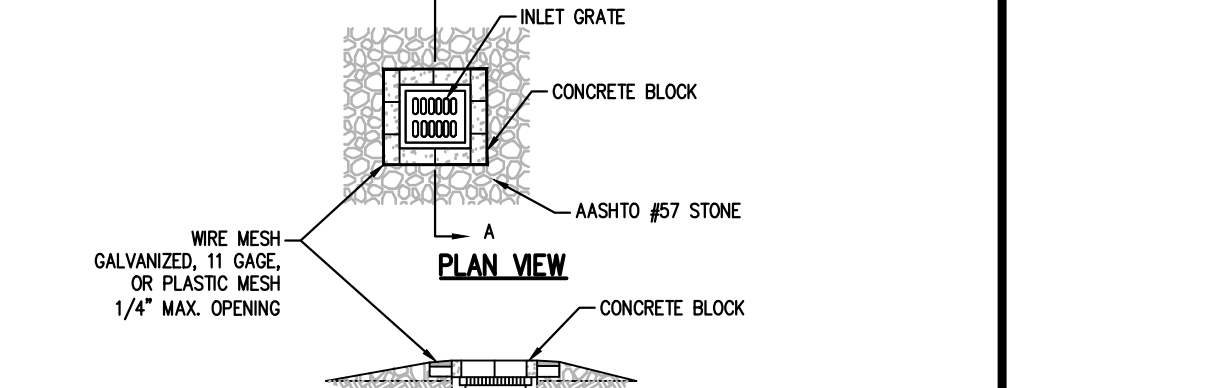
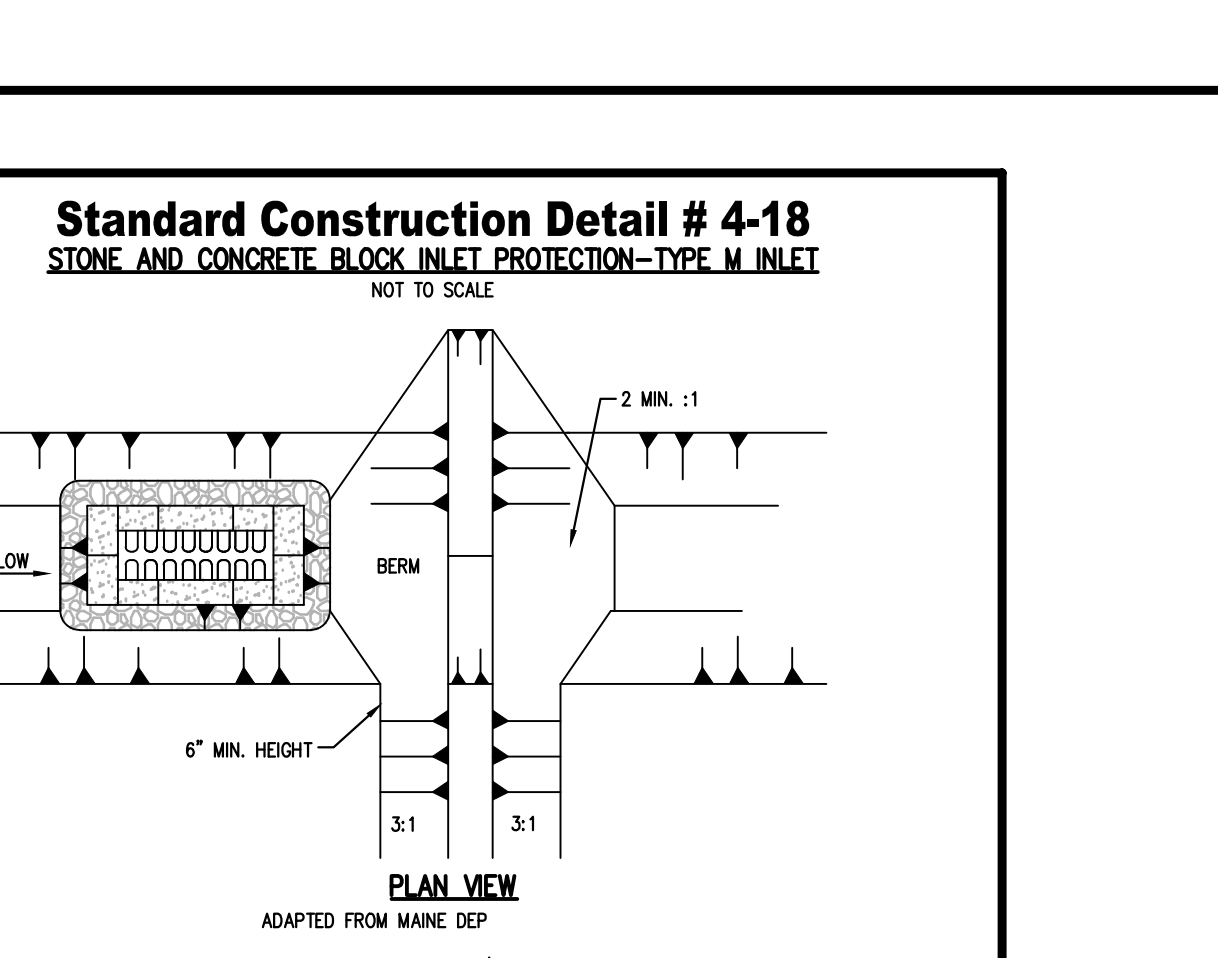
- WASH RACK SHALL BE 30 FEET (MIN) WIDE OR TOTAL WIDTH OF ACCESS.
- WASH RACK SHALL BE DESIGNED AND CONSTRUCTED TO ACCOMMODATE ANTICIPATED VEHICULAR TRAFFIC.
- A WATER SUPPLY SHALL BE MADE AVAILABLE TO WASH THE WHEELS OF ALL VEHICLES EXITING THE SITE.

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 SHEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.



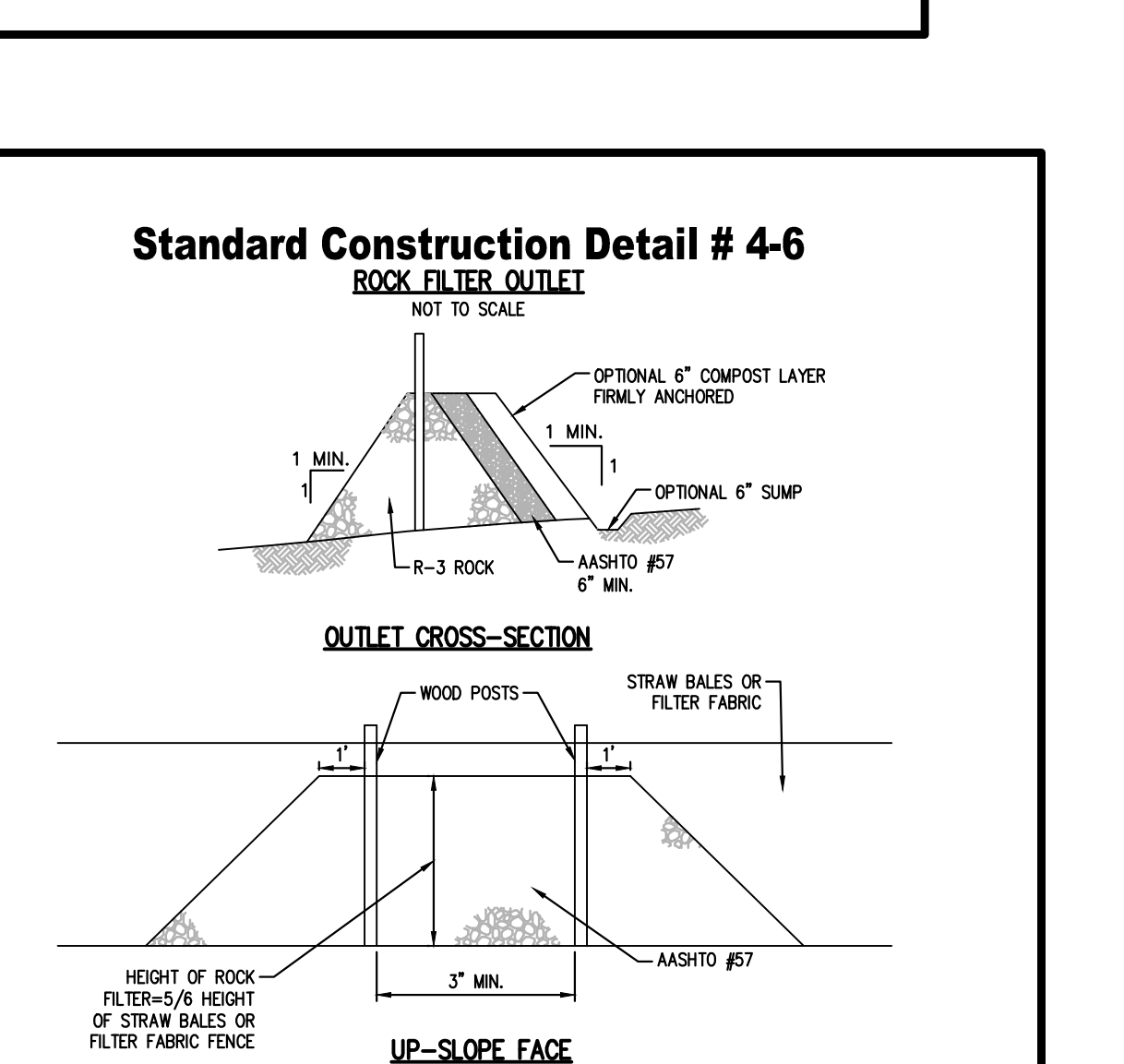
- INLET PROTECTION SHALL NOT BE REQUIRED FOR INLETS TRIBUTARY TO SEDIMENT BASINS OR SEDIMENT TRAPS. ALTERNATE TYPE C INLET PROTECTION CAN BE USED ON ONE ACRE MAXIMUM DRAINAGE AREA WITH 15\"/>

ORGANIC MATTER CONTENT		80%-100% (DRY WEIGHT BASIS)
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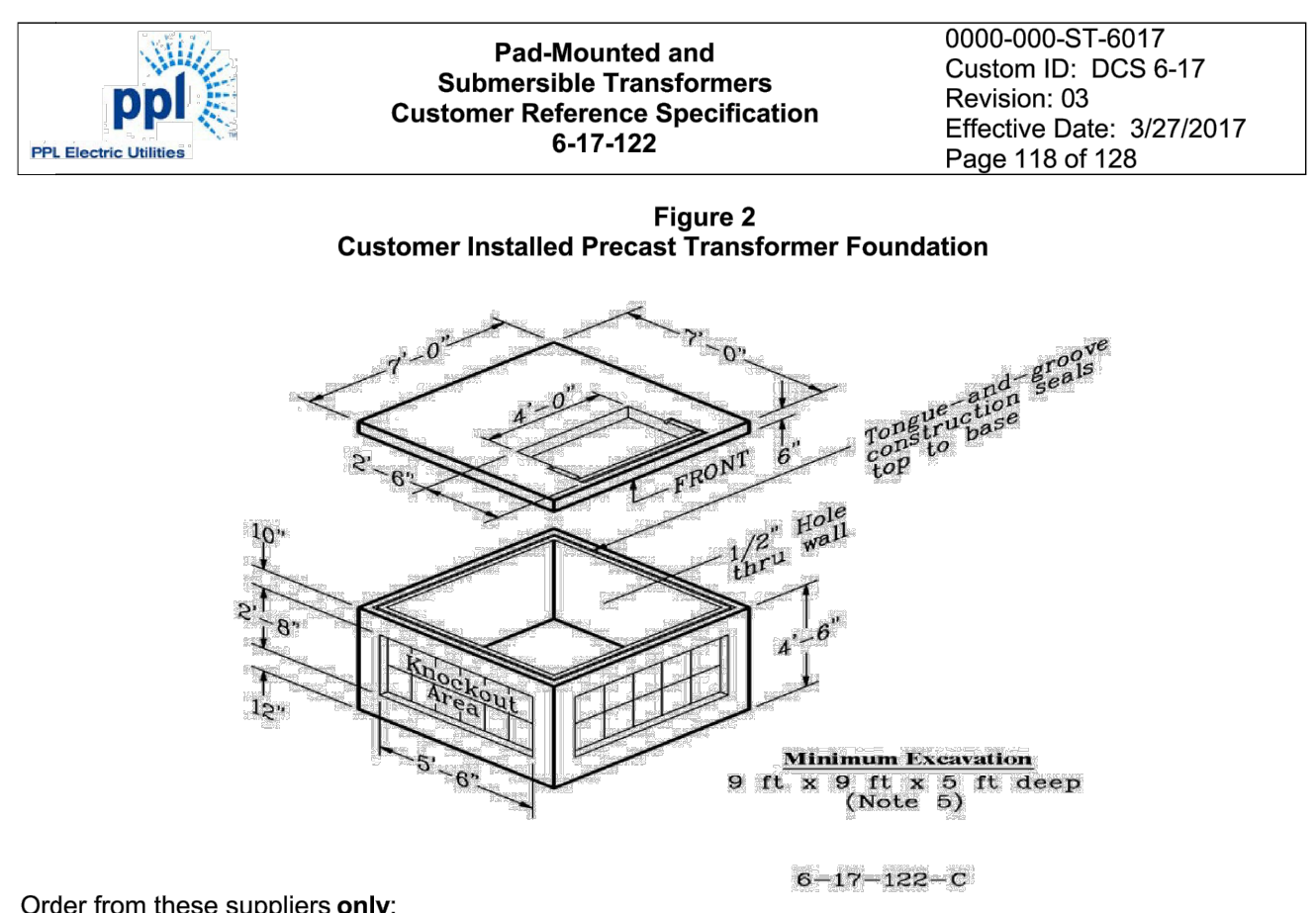
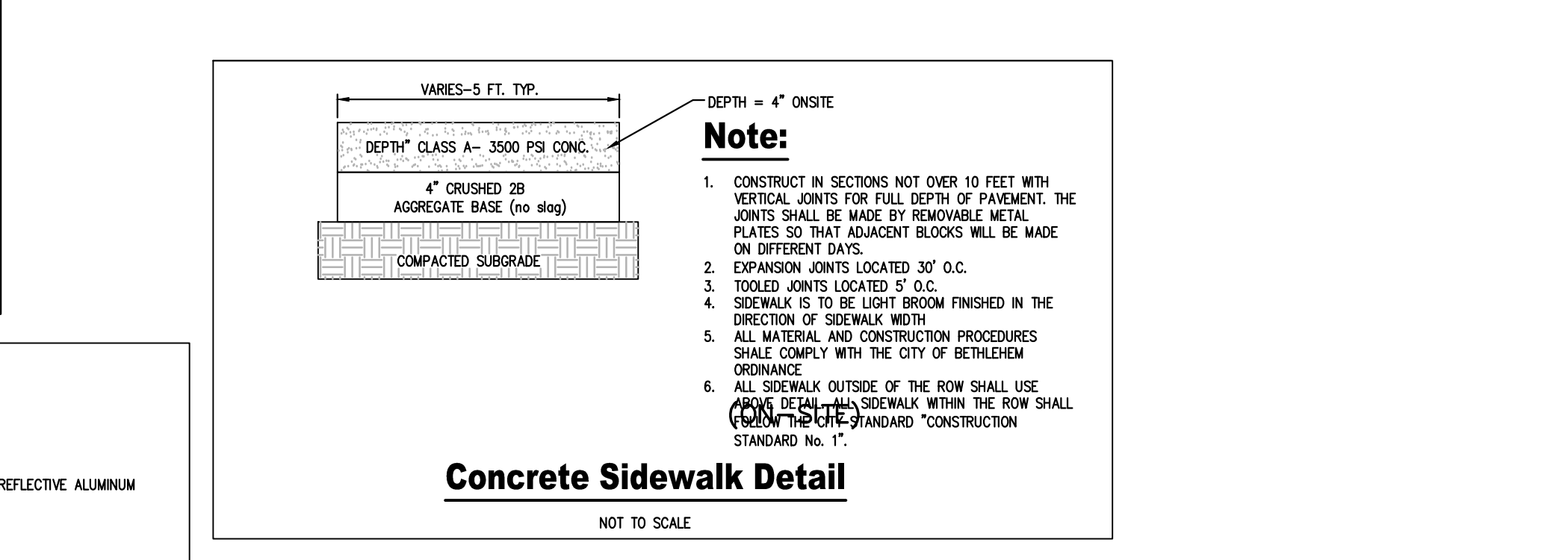
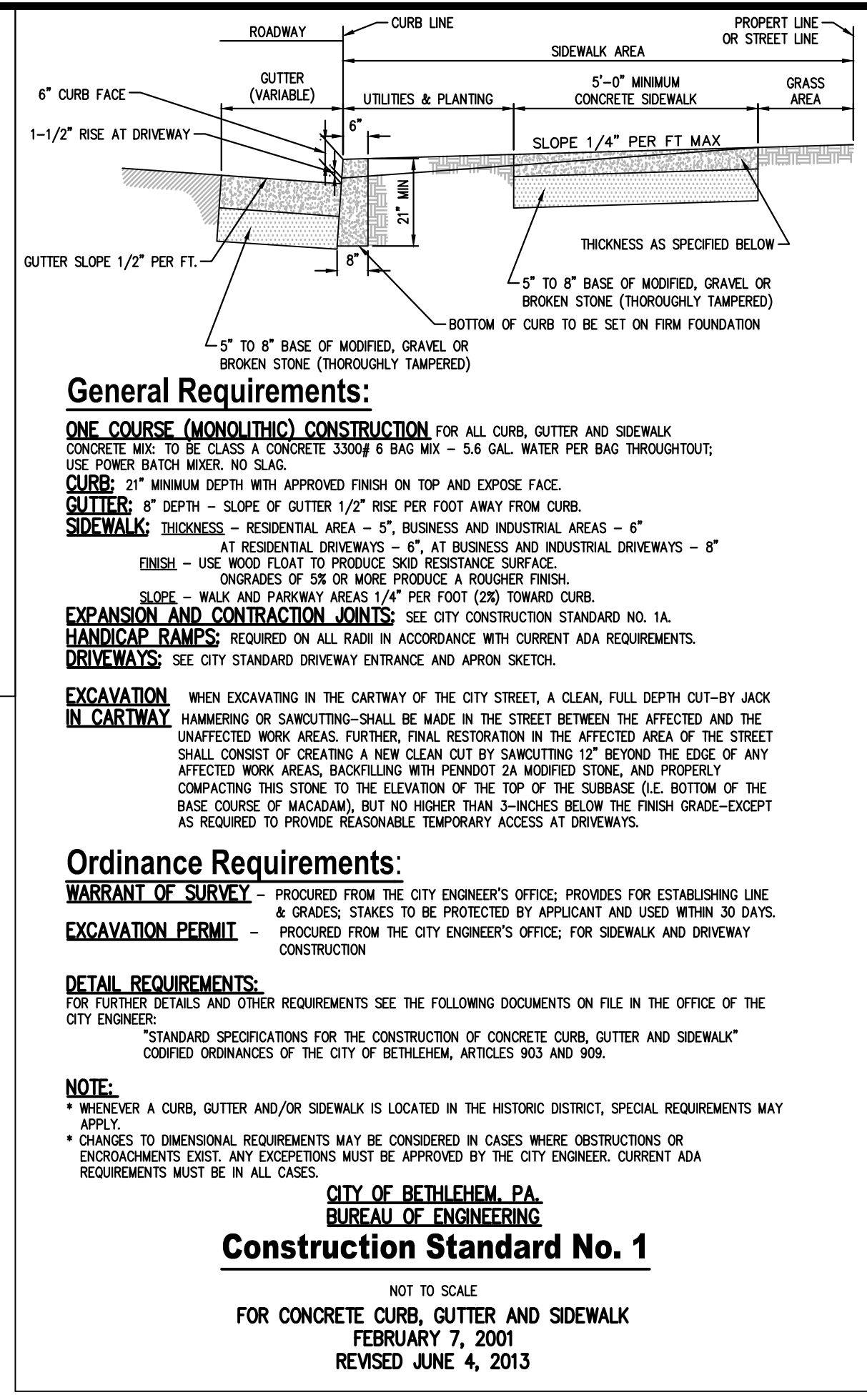
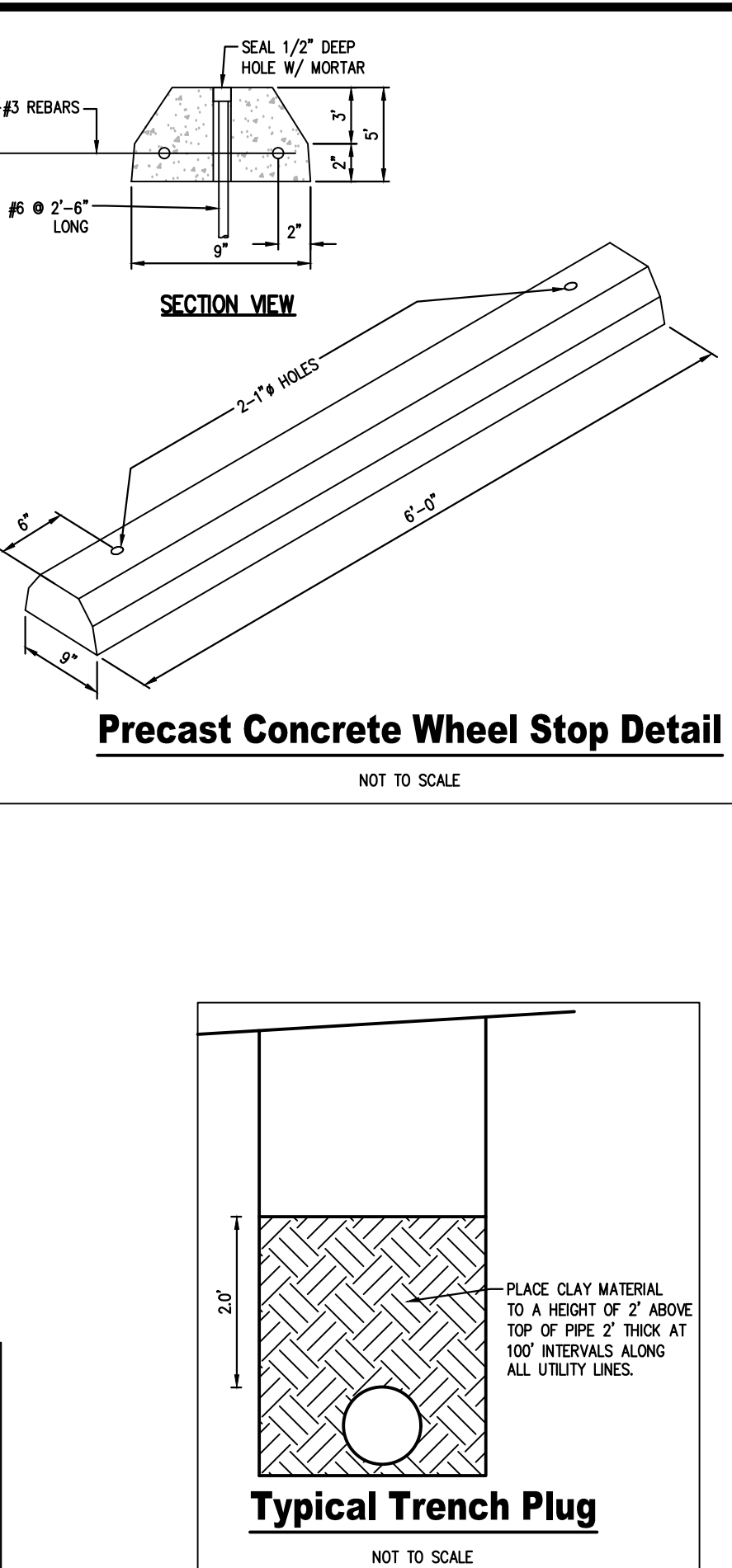
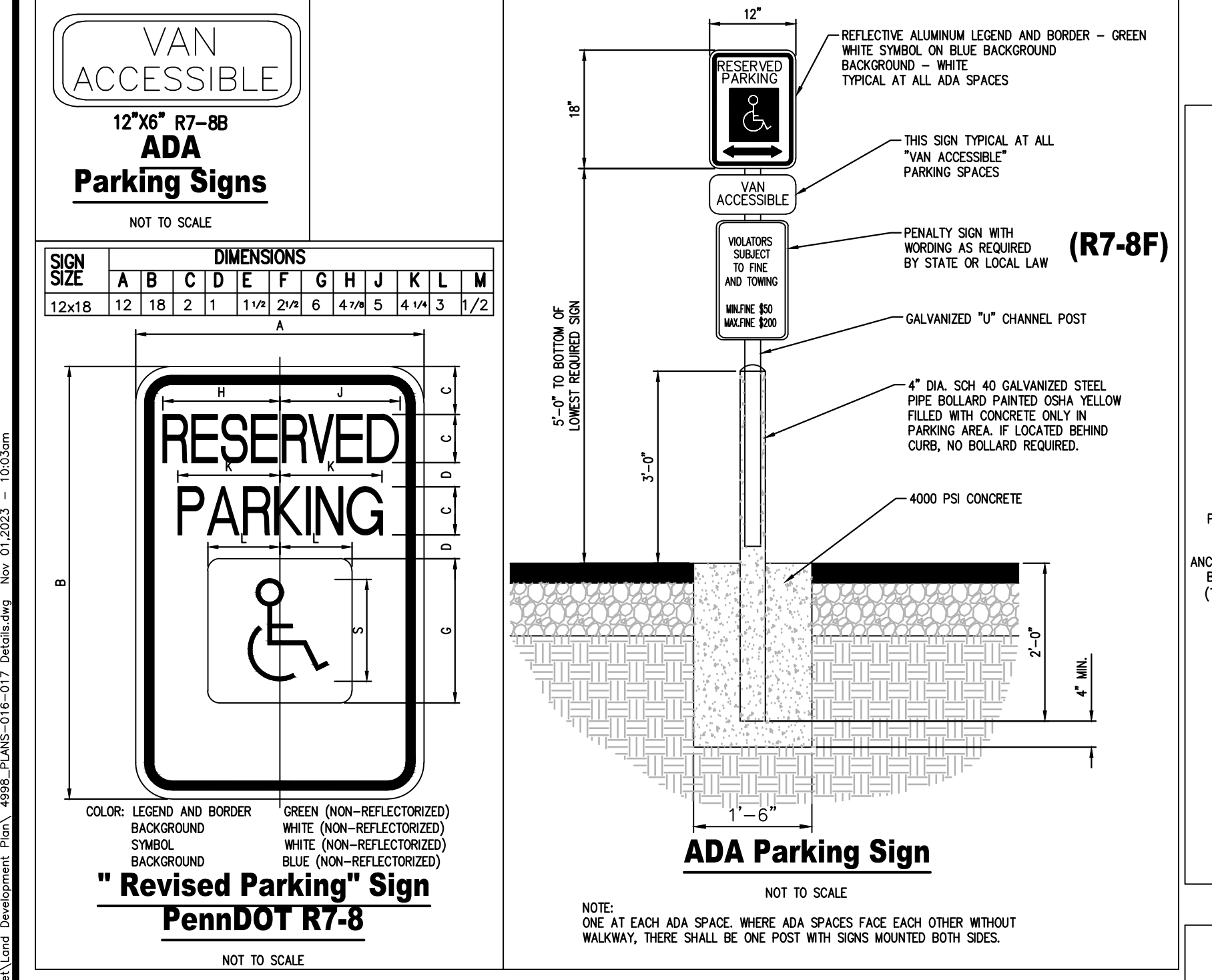
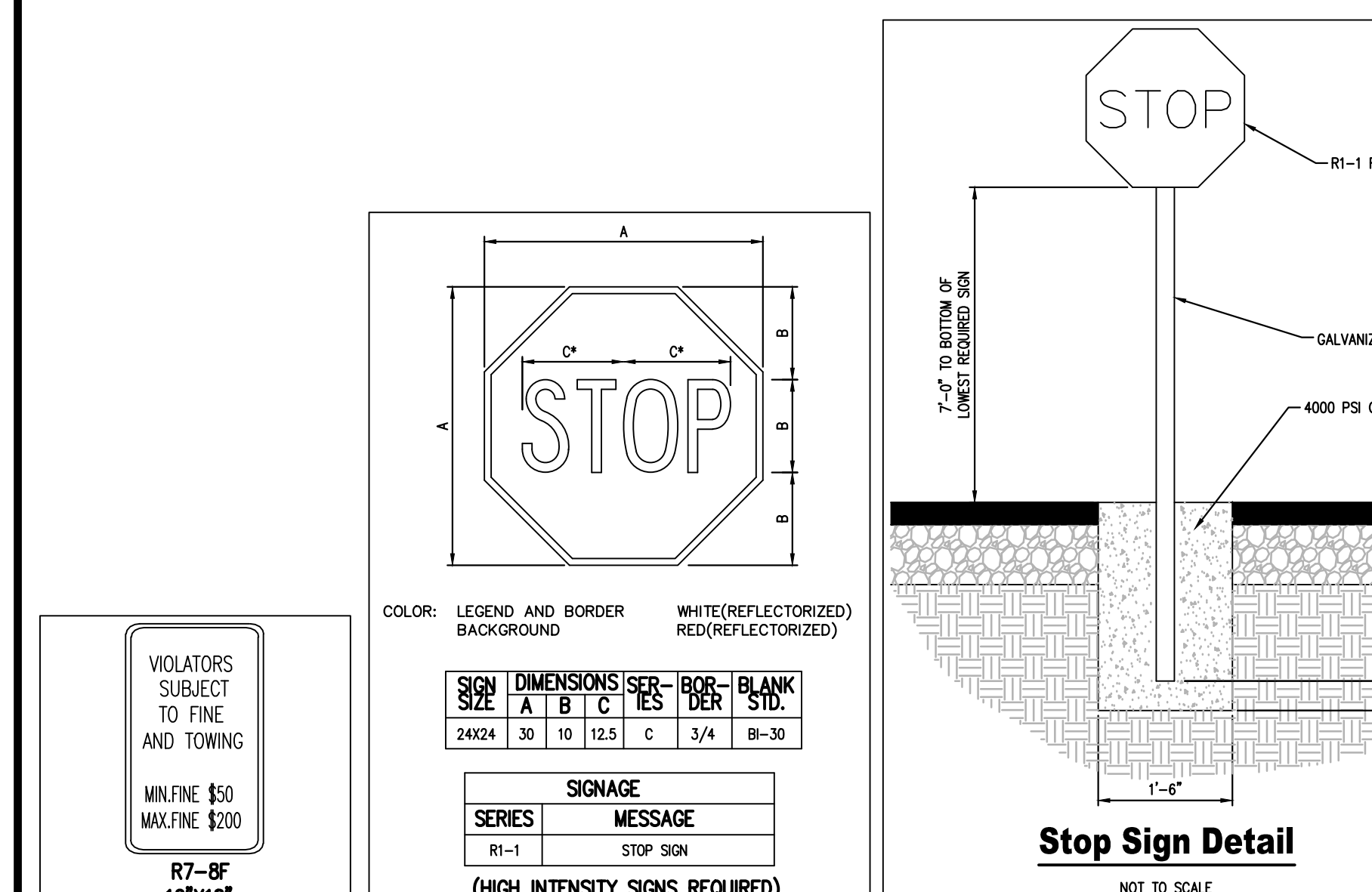
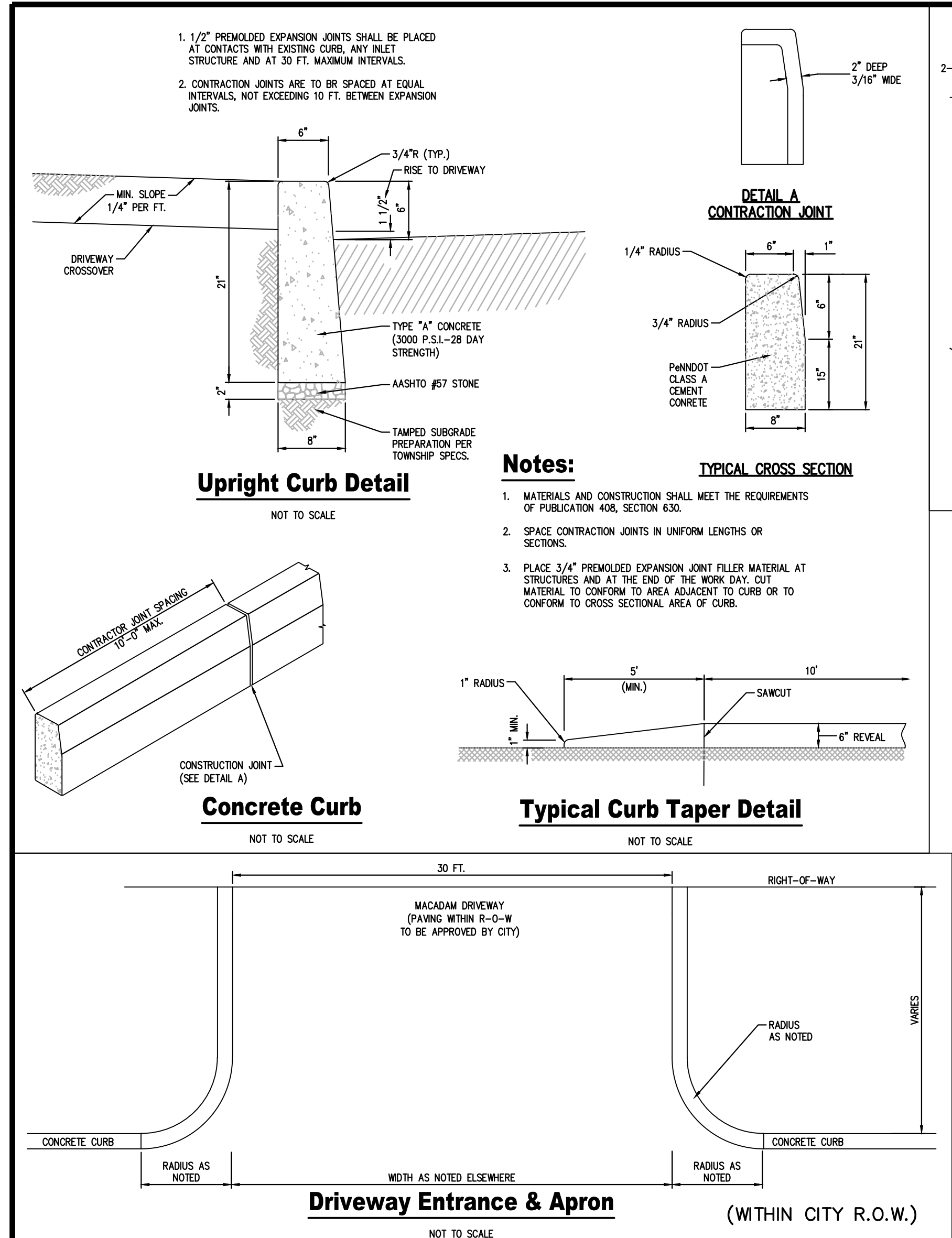


- MAXIMUM DRAINAGE AREA = 1 ACRE.
- INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS NOT LOCATED AT A LOW POINT.
- ROLLED EARTHEN BERM SHALL BE MAINTAINED IMMEDIATELY DOWN GRADIENT OF THE PROTECTED INLET UNTIL ROADWAY 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.
- TOP OF BERM SHALL BE AT LEAST 6 INCHES BELOW ADJACENT ROADS IF PAVED WATER WOULD POSE A SPILLAGE HAZARD TO TRAFFIC.
- SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE HEIGHT OF THE STONE. DAMAGED OR CLOGGED INSTALLATIONS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.
- FOR SYSTEMS DISCHARGING TO HO OR EV SURFACE WATER, A 6 INCH THICK COMPOST LAYER SHALL BE SECRETLY 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



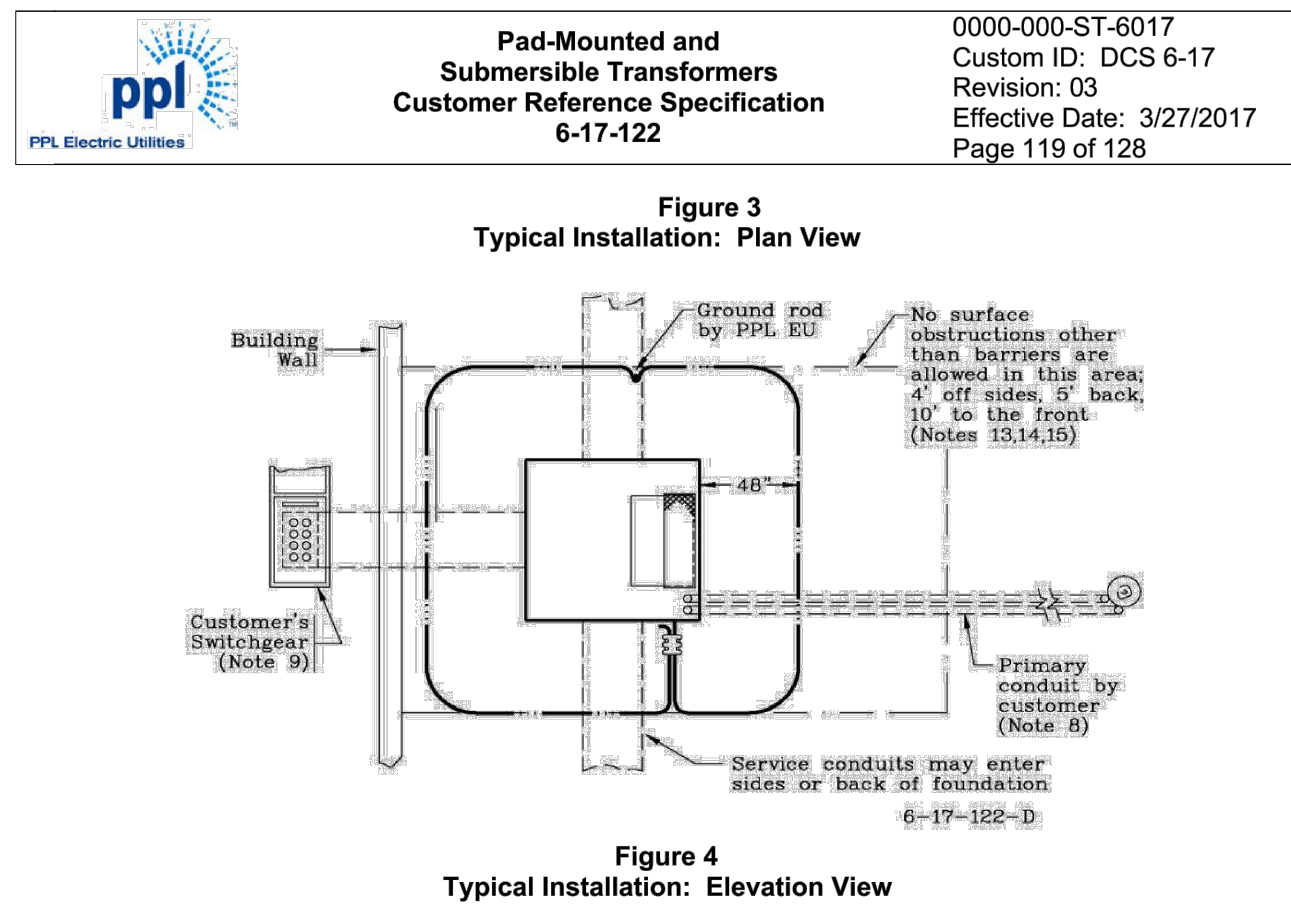
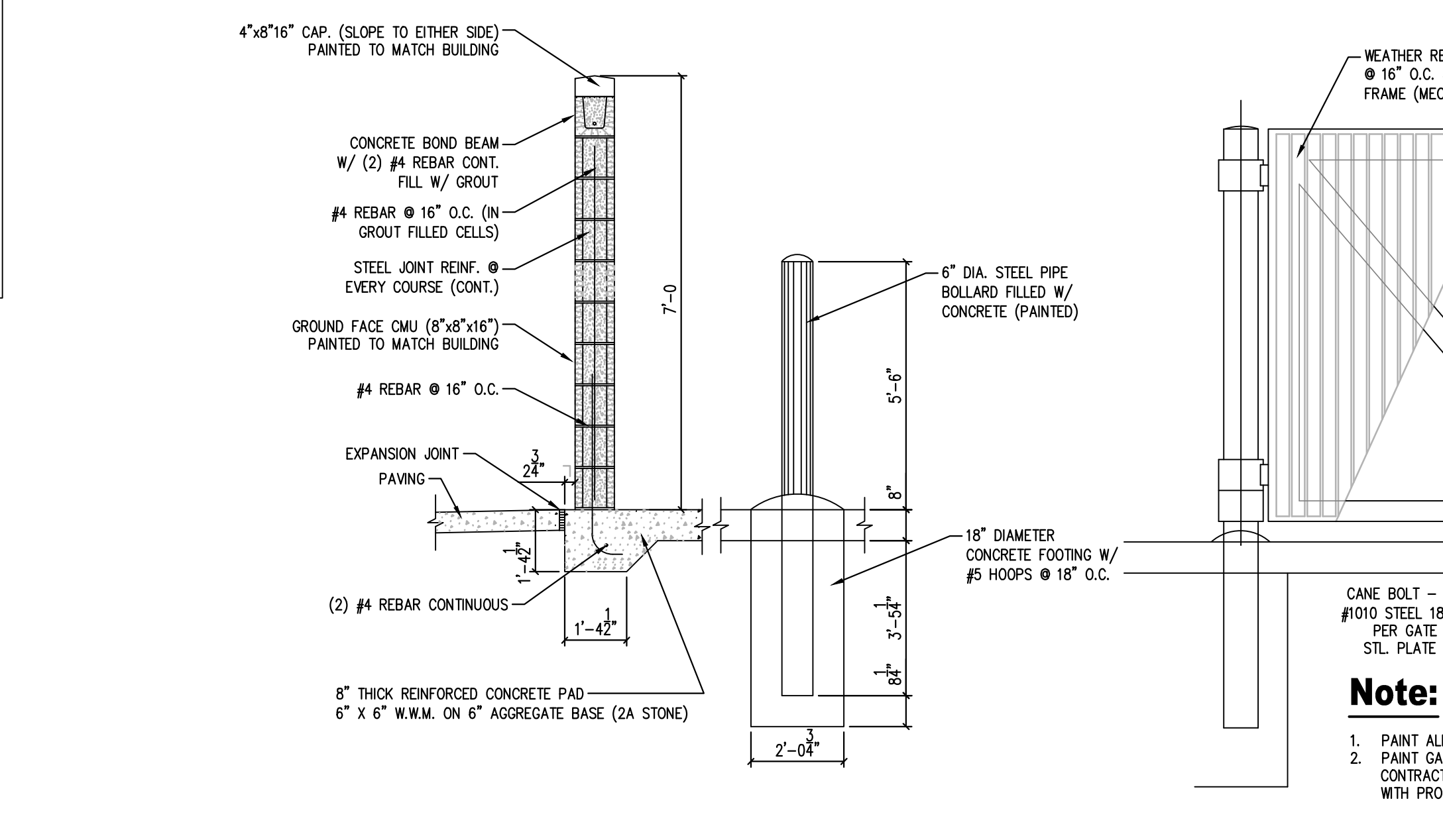
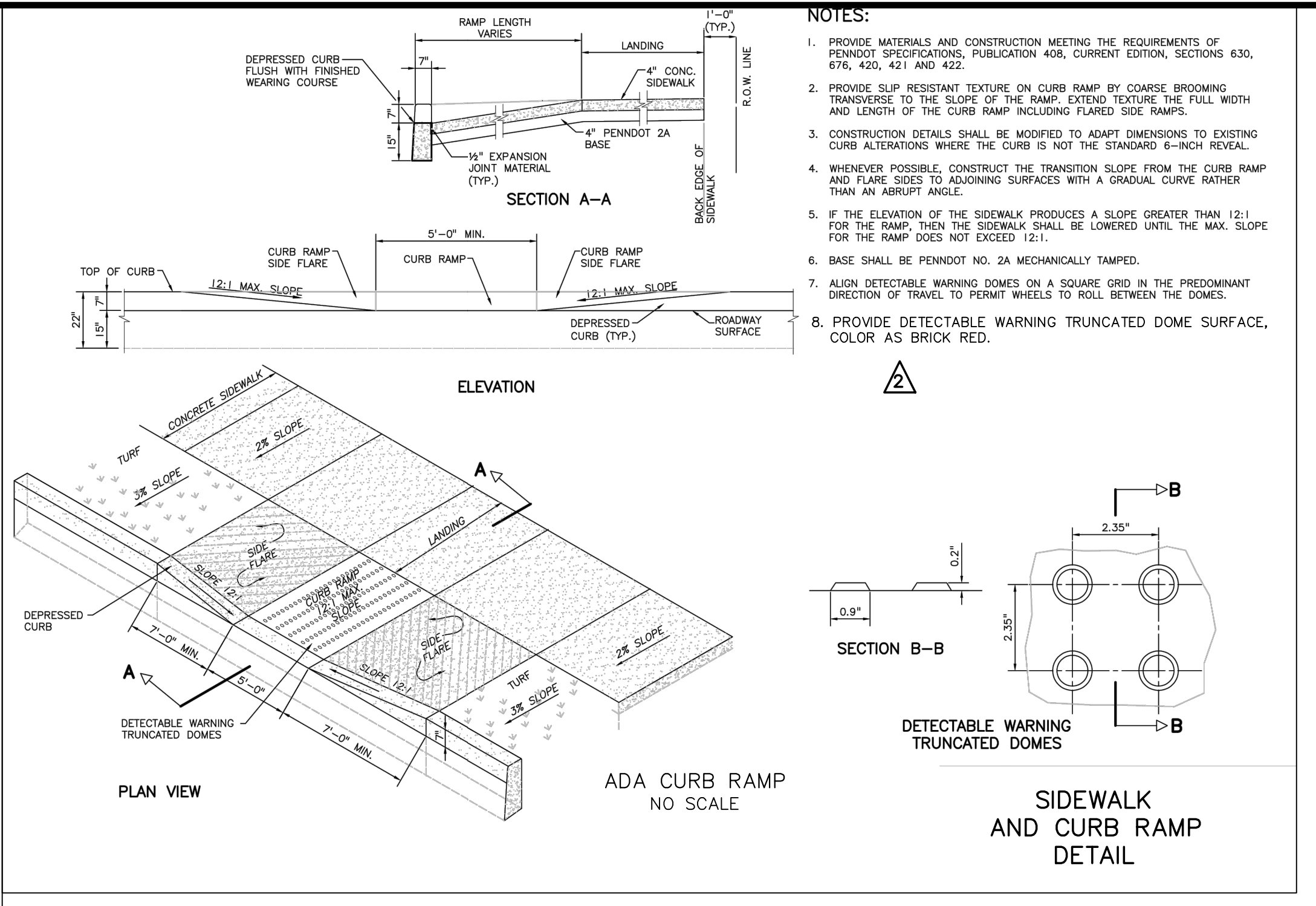
- A ROCK FILTER OUTLET SHALL BE INSTALLED WHERE FAILURE OF A STRAW BALE OR FILTER FABRIC BARRIER OR FILTER FABRIC FENCE HAS OCCURRED. FLOW ANCHORED COMPOST LAYER SHALL BE USED ON UPSLOPE FACE IN HO AND EV WATERWAYS.
- SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/3 THE



- Order from these suppliers only:
- Approved Suppliers:** Please allow approximately 3 days to coordinate delivery.
- Oldcastle Precast
200 Keystone Drive
Telford, PA 16969
(215) 257-8081
 - A.C. Miller Concrete Products, Inc.
31 E. Bridge Street
Spring City, PA 19475
(610) 948-4600, 800-229-2922
 - Monarch Products Co., Inc.
385 Snipe Road
York Haven, PA 17370-9705
(717) 938-8303
 - Monarch Precast Concrete Corp
425 North Dauphin Street
Allentown, PA 18109-2159
(610) 435-6746
 - Binghamton Precast & Supply
18 Phelps Street
Binghamton, NY 13901
(607) 722-0334
 - By-Crete
517 King Street
Lebanon, PA 17042
(717) 866-7690
 - Modern Precast Concrete Products & Construction Supplies
3900 Glover Road
Easton, PA 18040
(610) 997-3119
 - Soranton Craftsmen, Inc.
8300 Dunmore Street
Throop, PA 18512
(800) 775-1479
- Mailing Address:
P.O. Box 97
Dunmore, PA 18512

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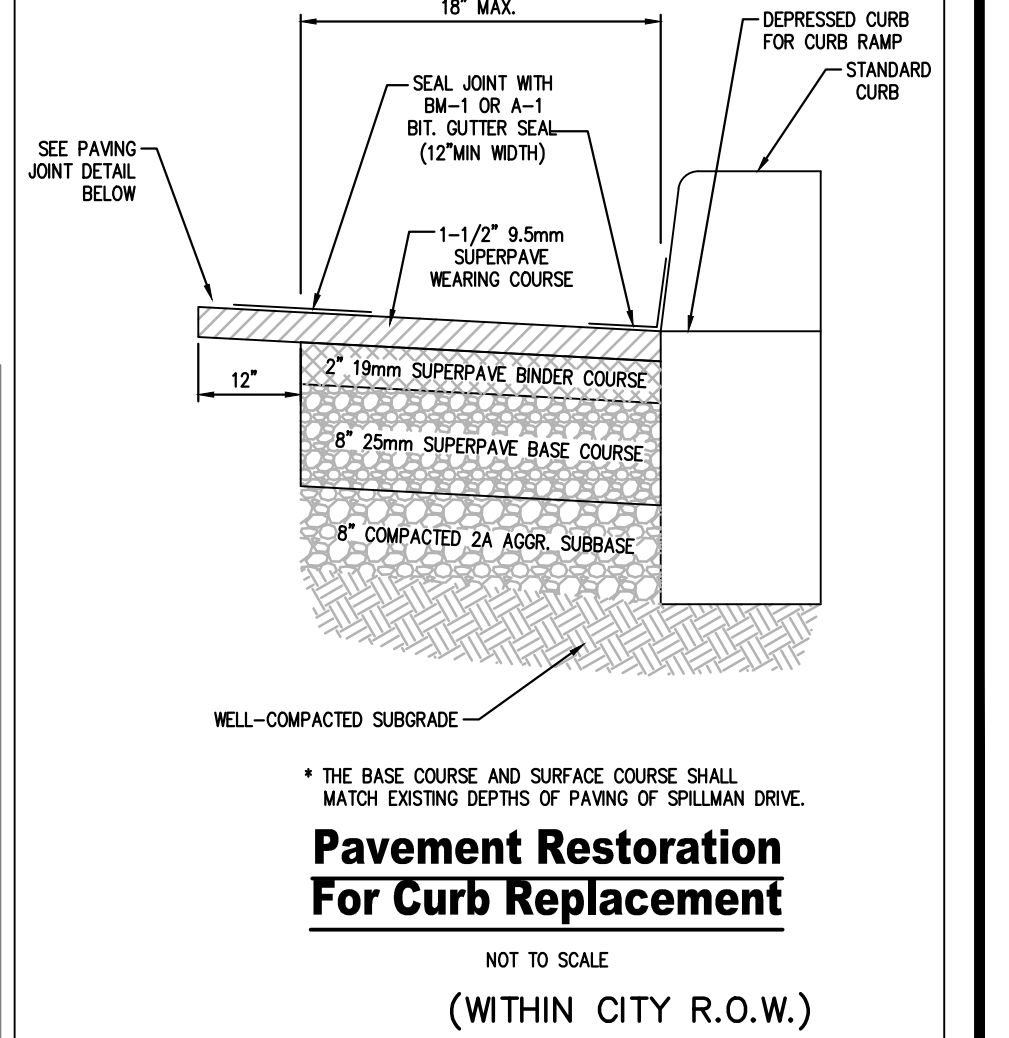
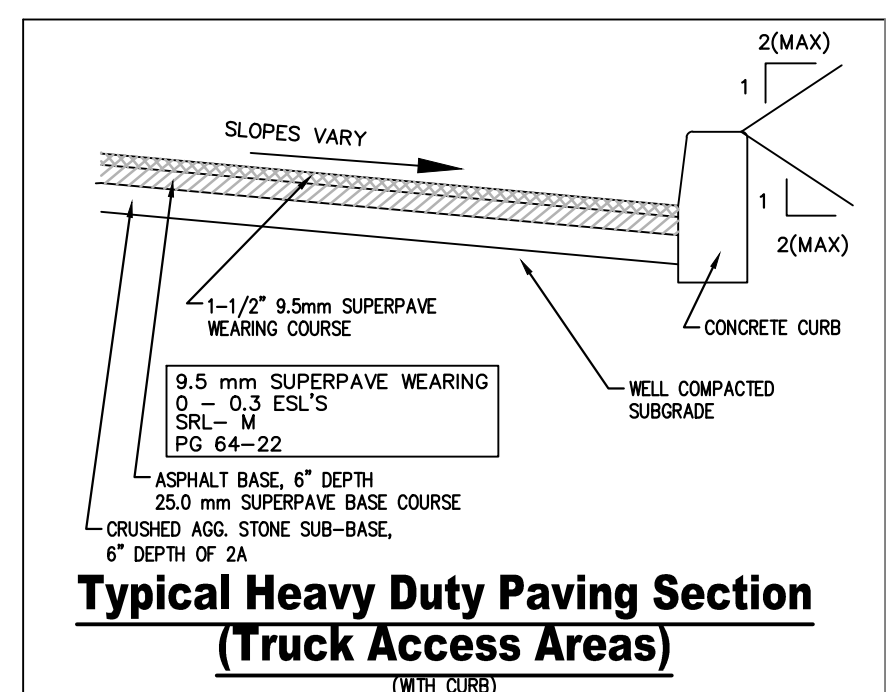
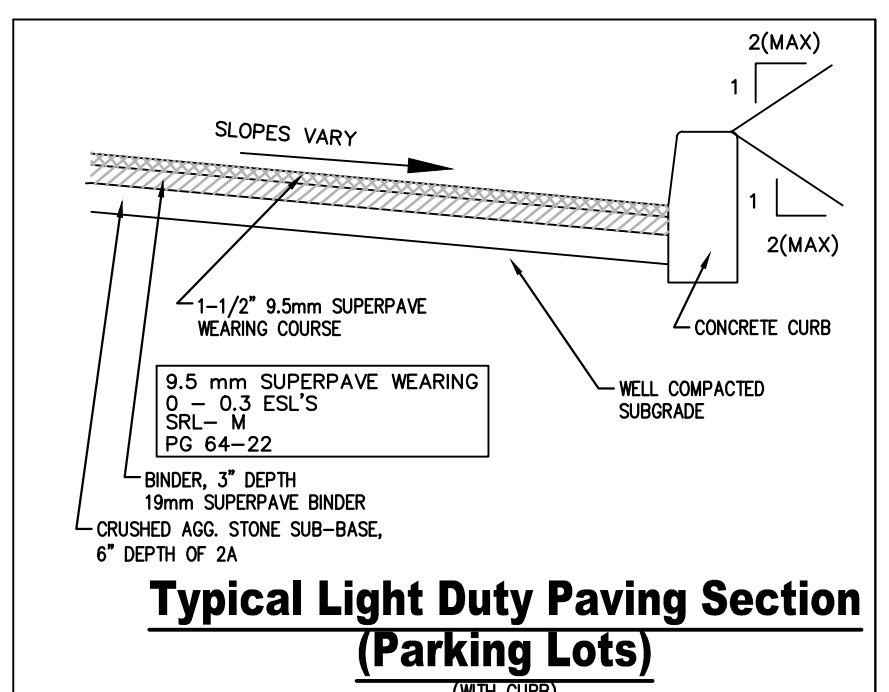
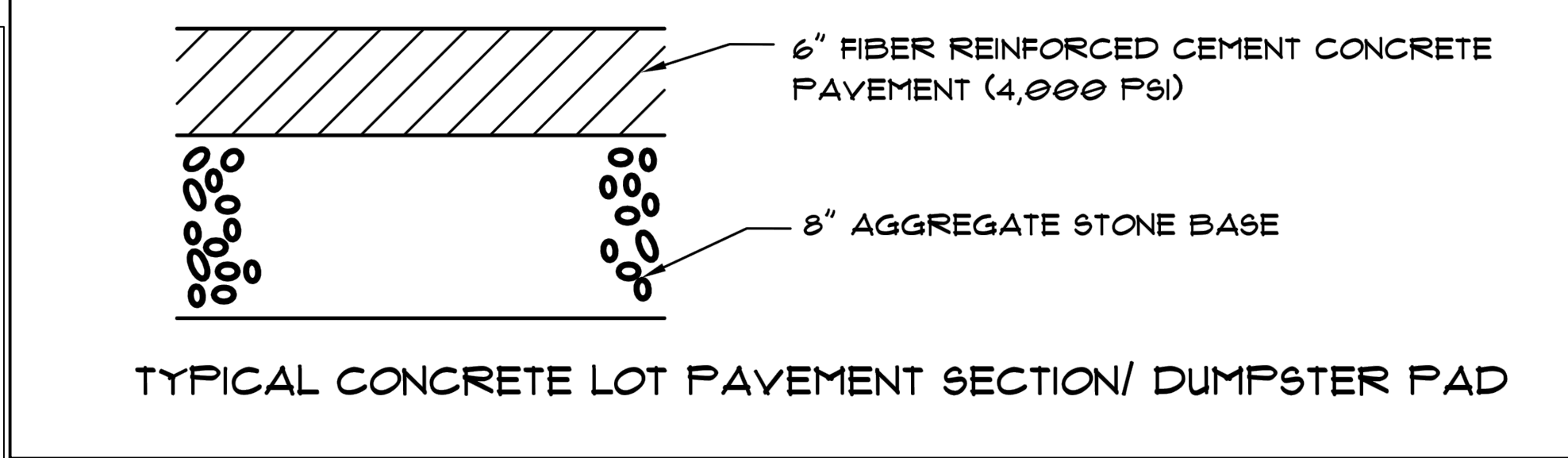
Approved: E178021 Conrad, James



KVA	75	150	300	500	750	1000	1500	2000	2500
WYE 120/208	2	2	2	4	8	10	12	12	14
WYE 277/480	-	2	2	2	3	4	8	10	12

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- NOTES:**
1. PROVIDE MATERIALS AND CONSTRUCTION MEETING THE REQUIREMENTS OF PENNDOT SPECIFICATIONS, PUBLICATION 408, CURRENT EDITION, SECTIONS 630, 676, 420, 421 AND 422.
 2. PROVIDE SLUR RESISTANT TEXTURE ON CURB RAMP BY COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP, EXTENDING THE FULL WIDTH AND LENGTH OF THE CURB RAMP INCLUDING FLARED SIDE RAMPS.
 3. CONSTRUCTION DETAILS SHALL BE MODIFIED TO ADAPT DIMENSIONS TO EXISTING CURB ALTERATIONS WHERE THE CURB IS NOT THE STANDARD 6-INCH RAMP.
 4. WHENEVER POSSIBLE, CONSTRUCT THE TRANSITION SLOPE FROM THE CURB RAMP AND FLARE SIDES TO ADJOINING SURFACES WITH A GRADUAL CURVE RATHER THAN AN ABRUPT ANGLE.
 5. IF THE ELEVATION OF THE SIDEWALK PRODUCES A SLOPE GREATER THAN 1:1 FOR THE RAMP, THEN THE SIDEWALK SHALL BE LOWERED UNTIL THE MAX. SLOPE FOR THE RAMP DOES NOT EXCEED 1:2:1.
 6. BASE SHALL BE PENNDOT NO. 2A MECHANICALLY TAMPED.
 7. ALIGN DETECTABLE WARNING DOMES ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF TRAVEL TO PERMIT WHEELS TO ROLL BETWEEN THE DOMES.
 8. PROVIDE DETECTABLE WARNING TRUNCATED DOME SURFACE, COLOR AS BRICK RED.

PRELIMINARY/FINAL LAND DEVELOPMENT

CONSTRUCTION DETAIL PLAN

PHOENIX TUBE DRIVE

925 BETHLEHEM DRIVE

CITY OF BETHLEHEM NORTHAMPTON COUNTY PENNSYLVANIA

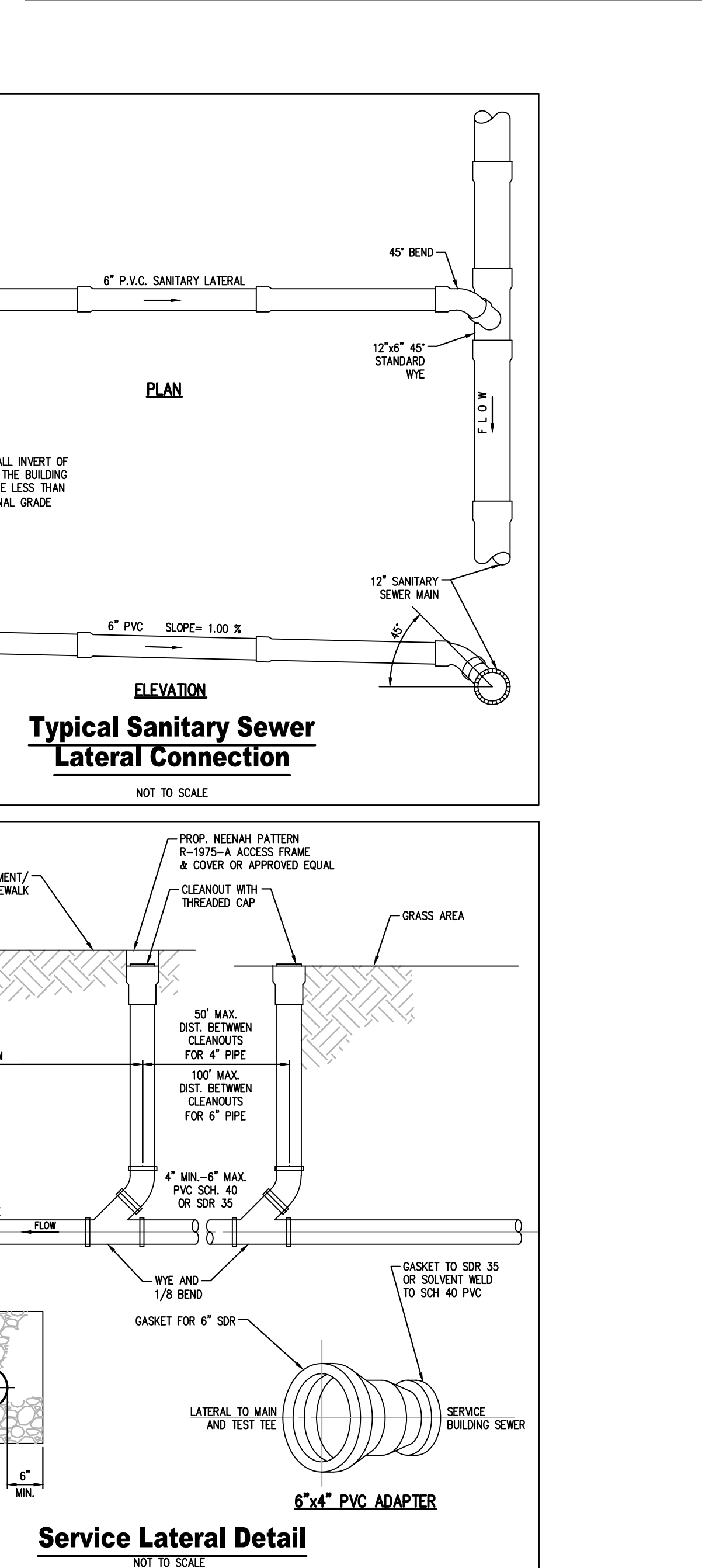
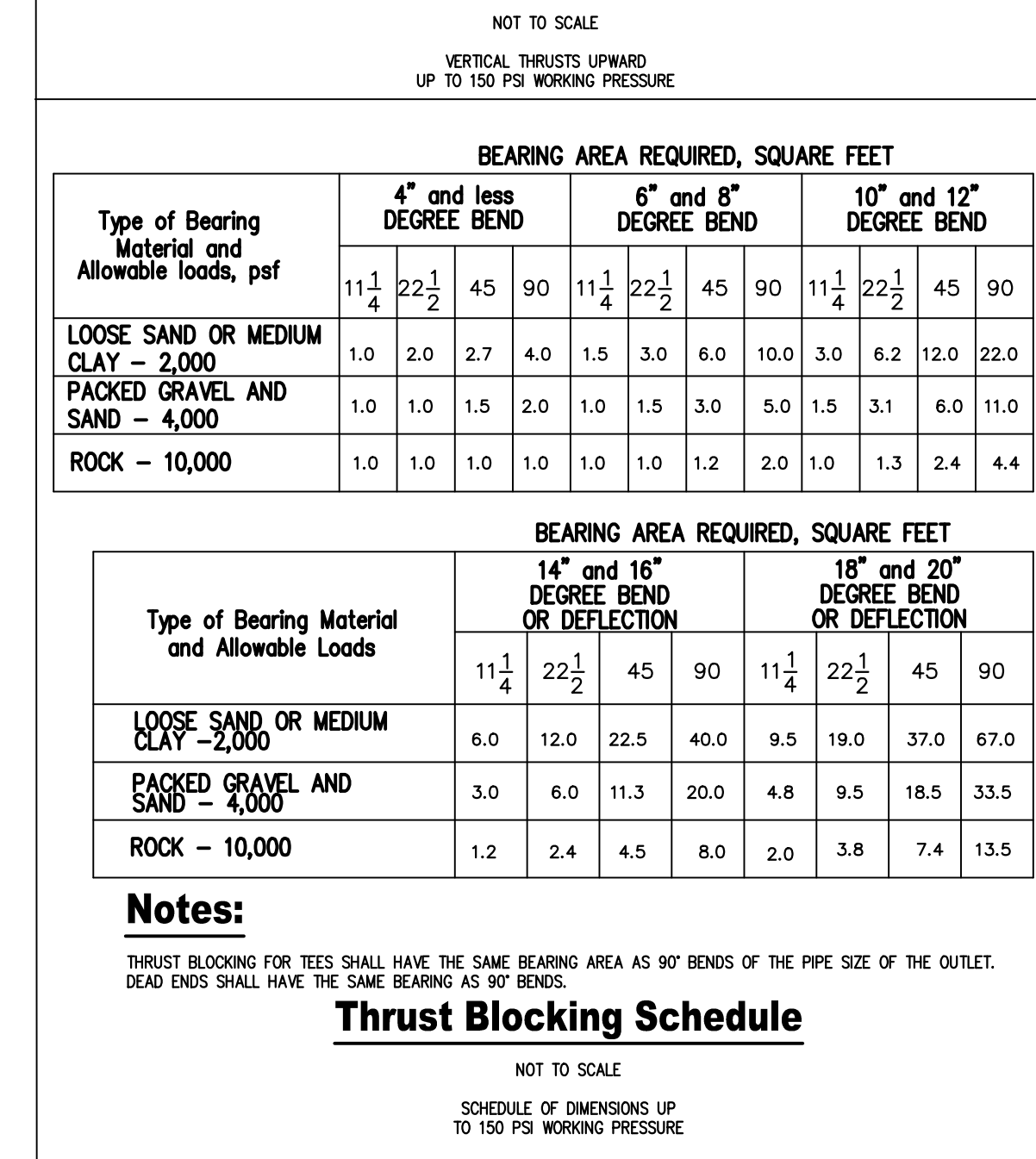
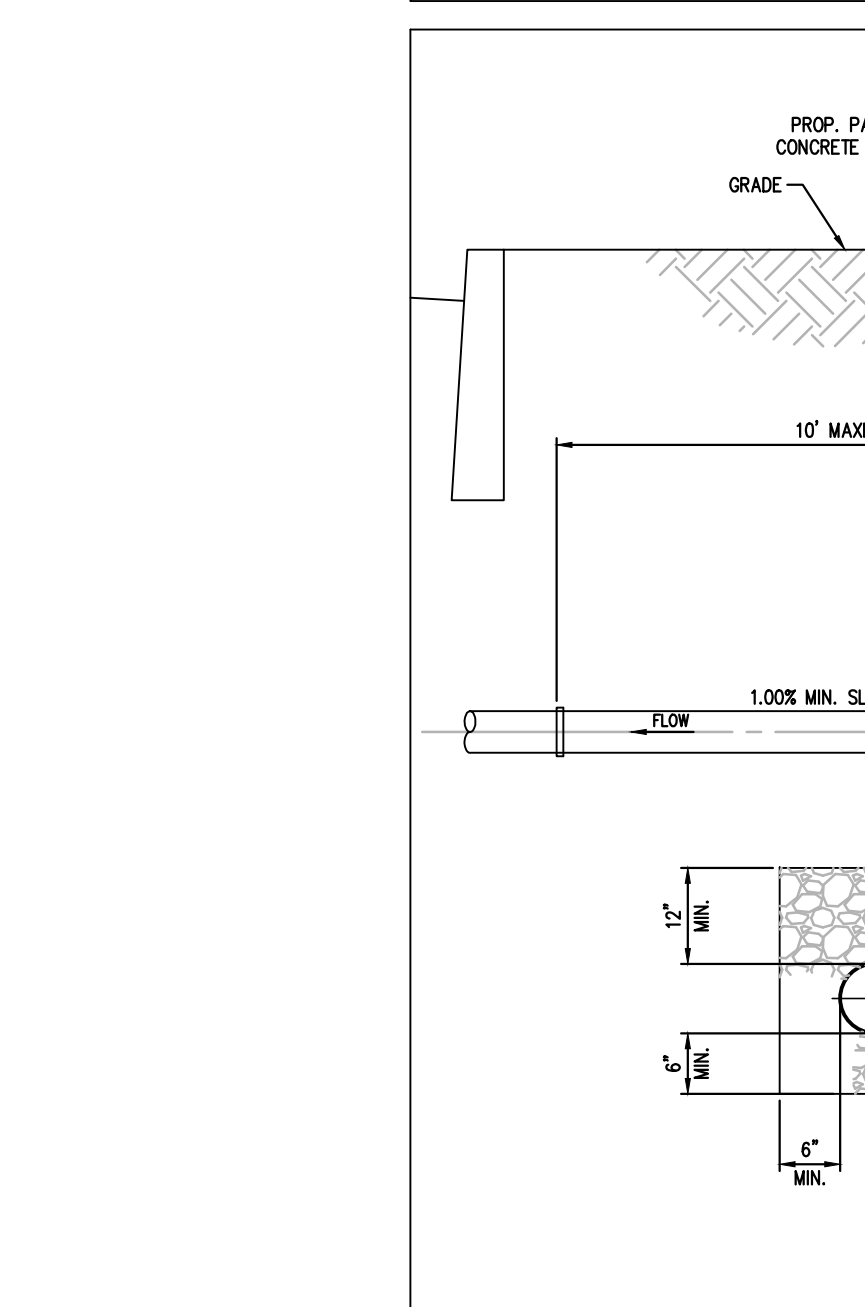
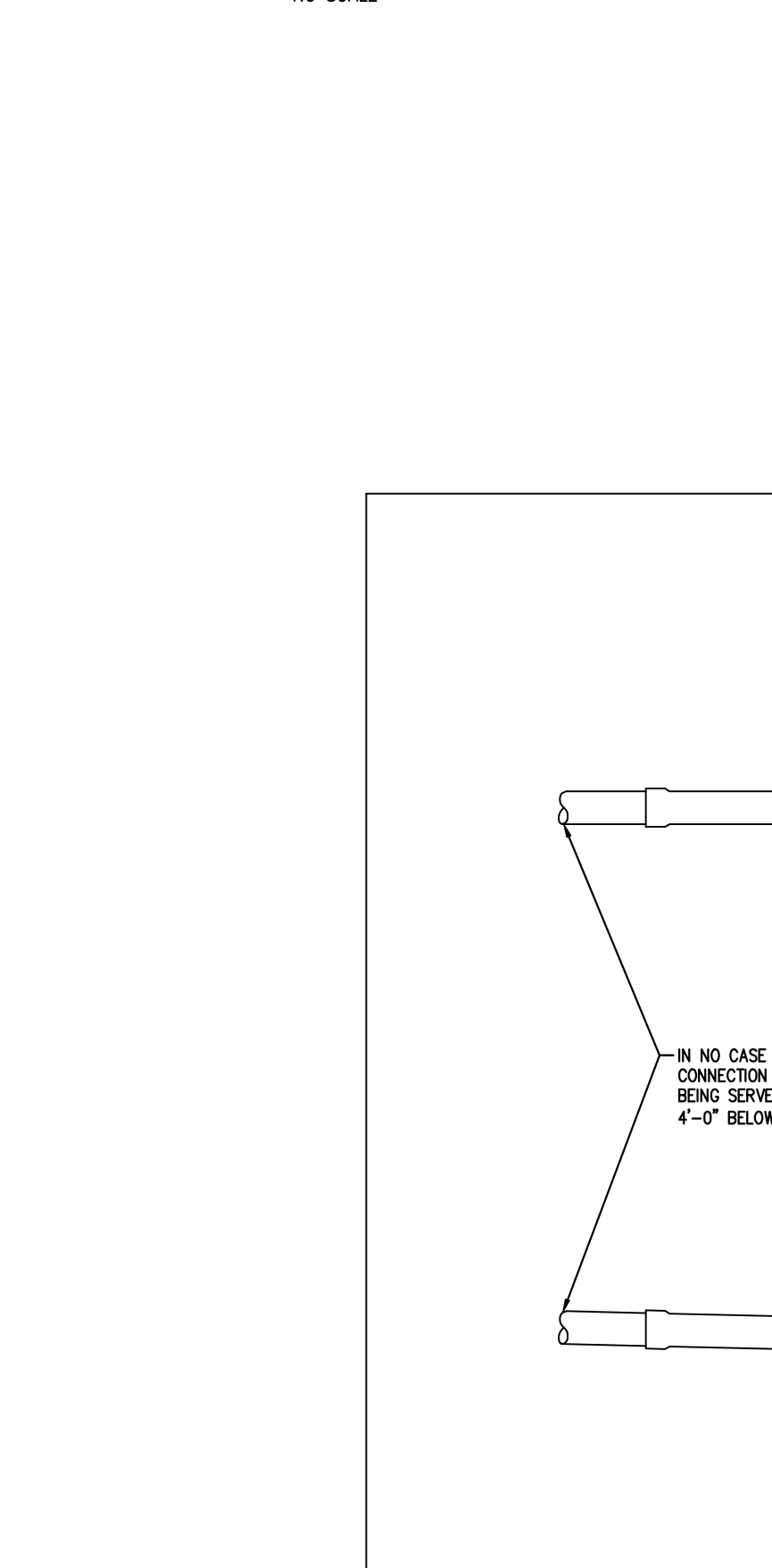
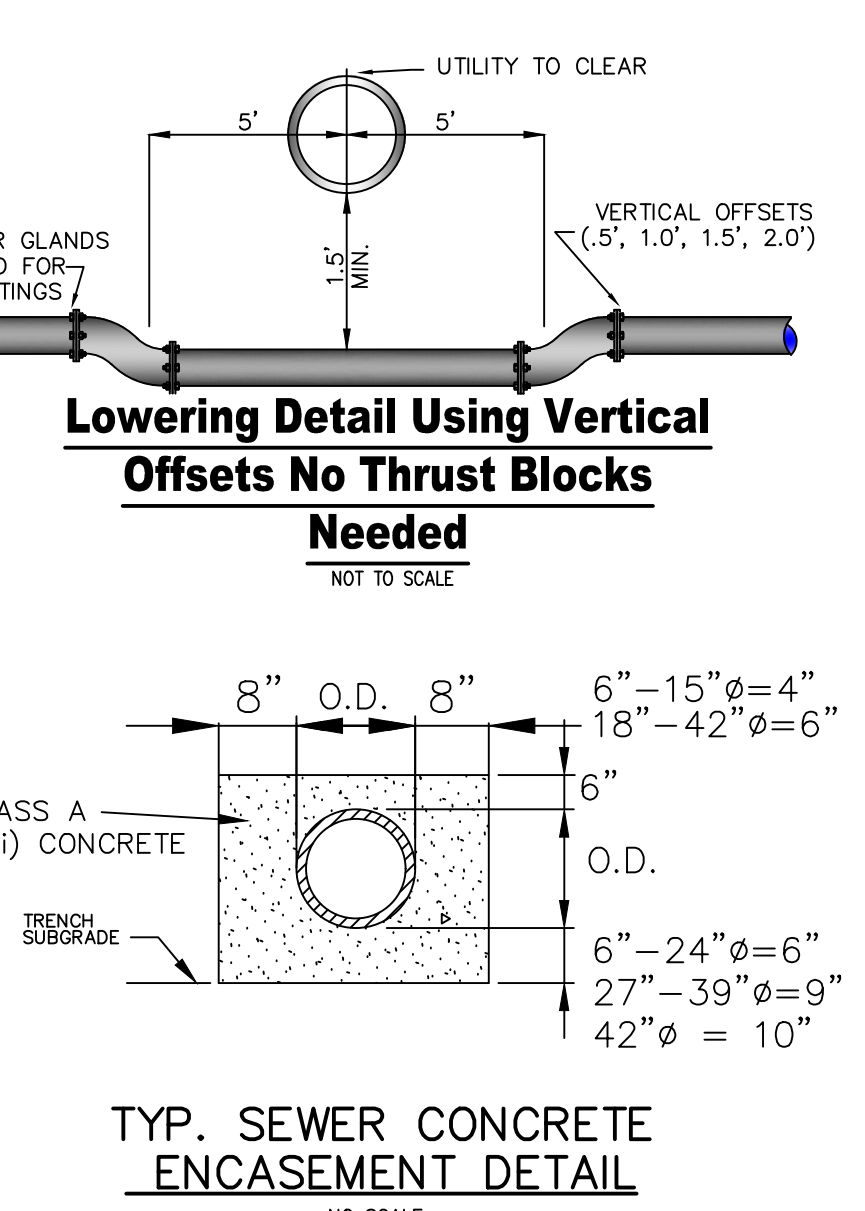
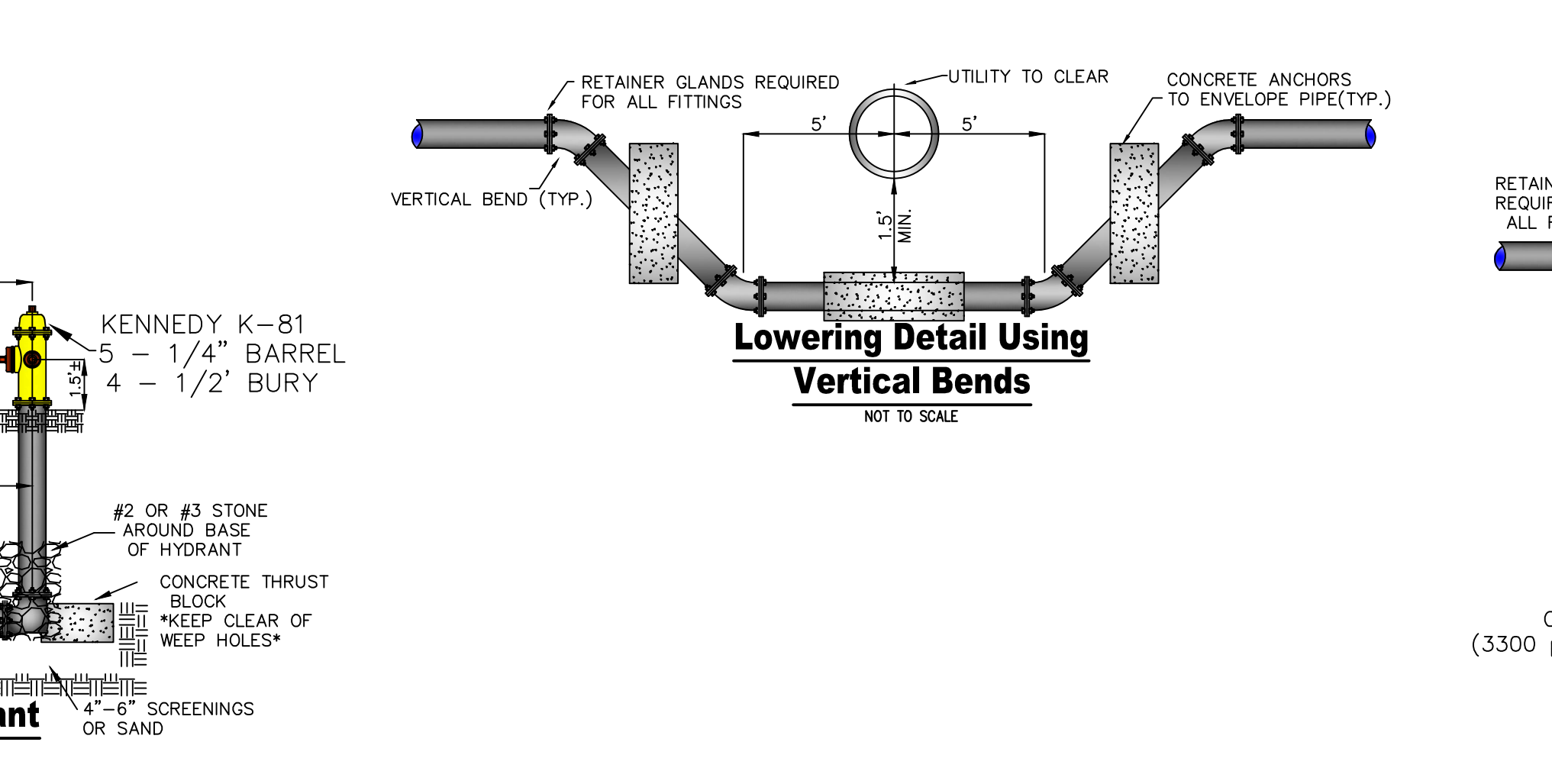
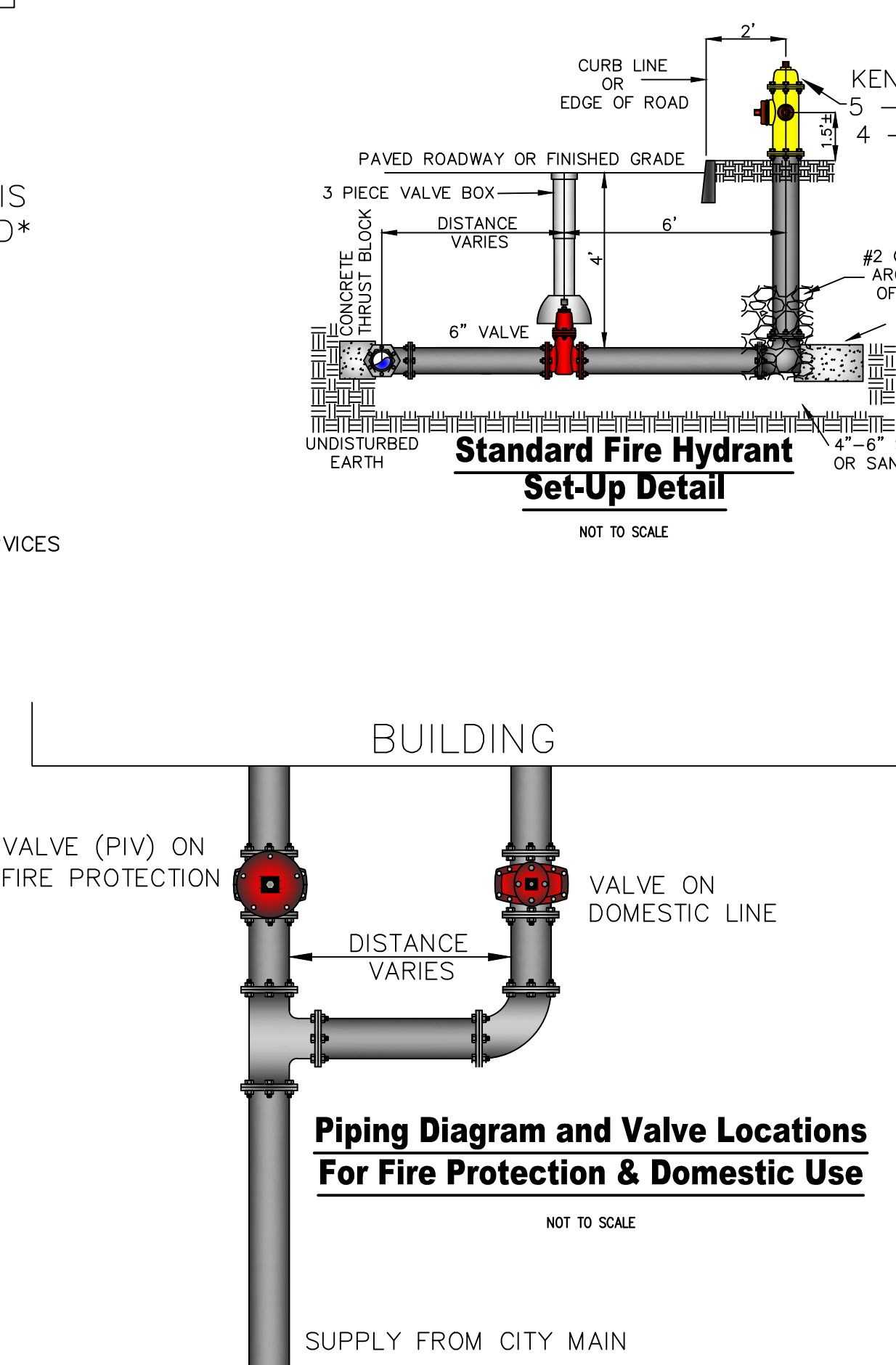
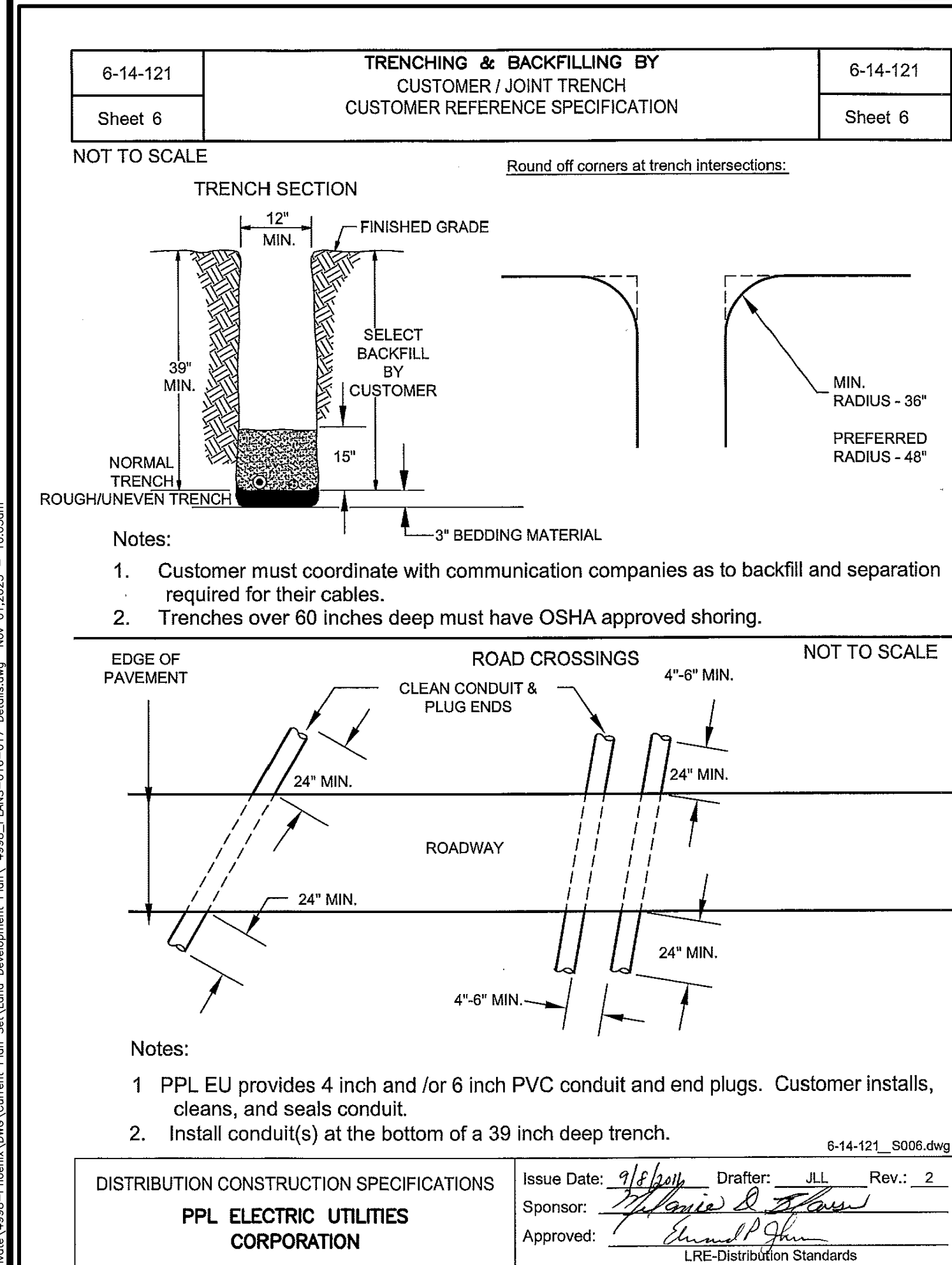
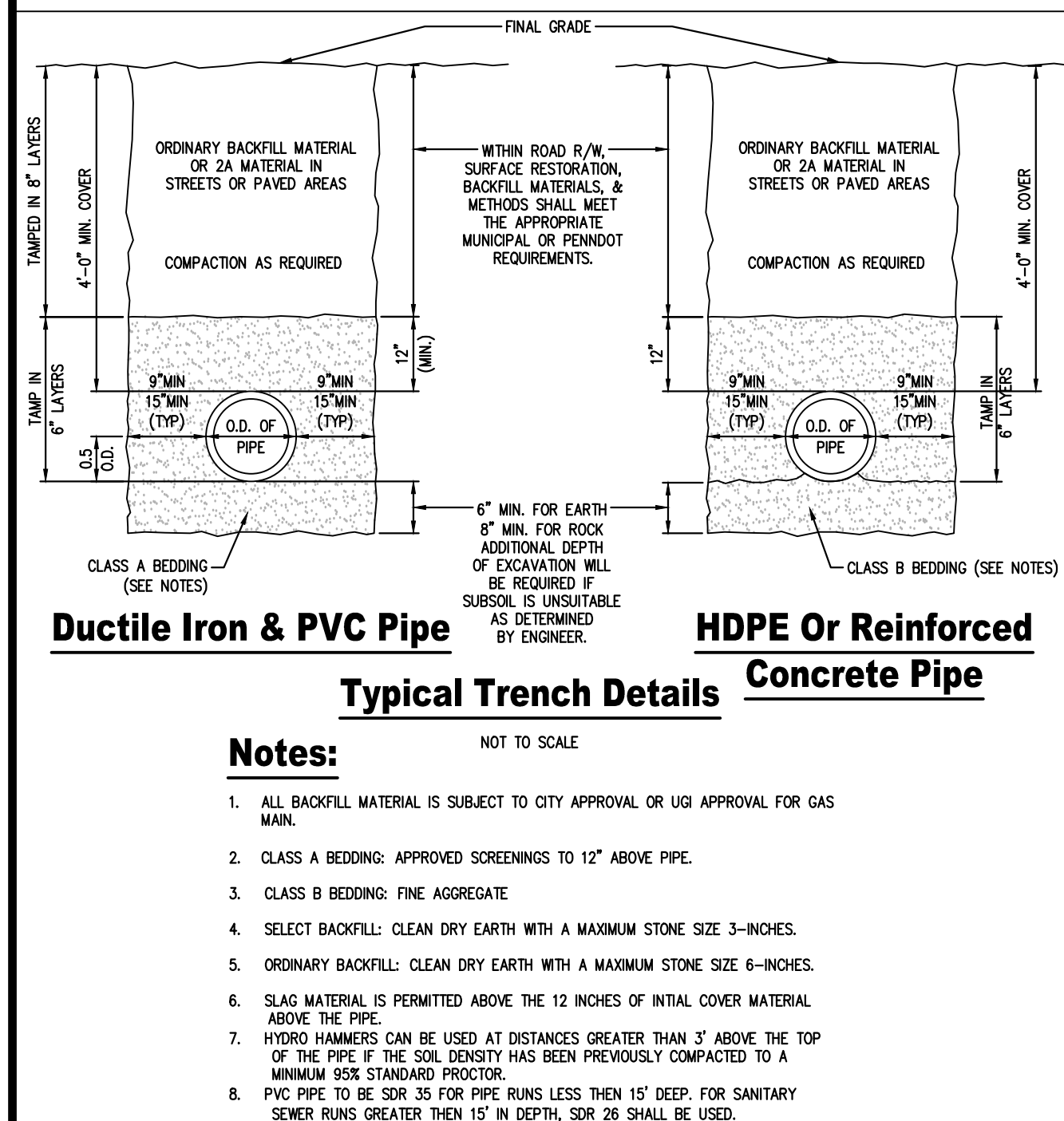
HanoverEngineering

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HanoverEng.com

REVISIONS

NO.	DATE	REVISIONS
1	9/7/23	PER ACORD COMMENTS
2	11/02/23	PER CITY REVIEW

DRAWN BY: DA
CHECKED BY: CHU
DATE: 7/26/23
SCALE: AS NOTED
PROJECT NO.: 4998
SHEET NO.: 16 OF 17

[illegible]