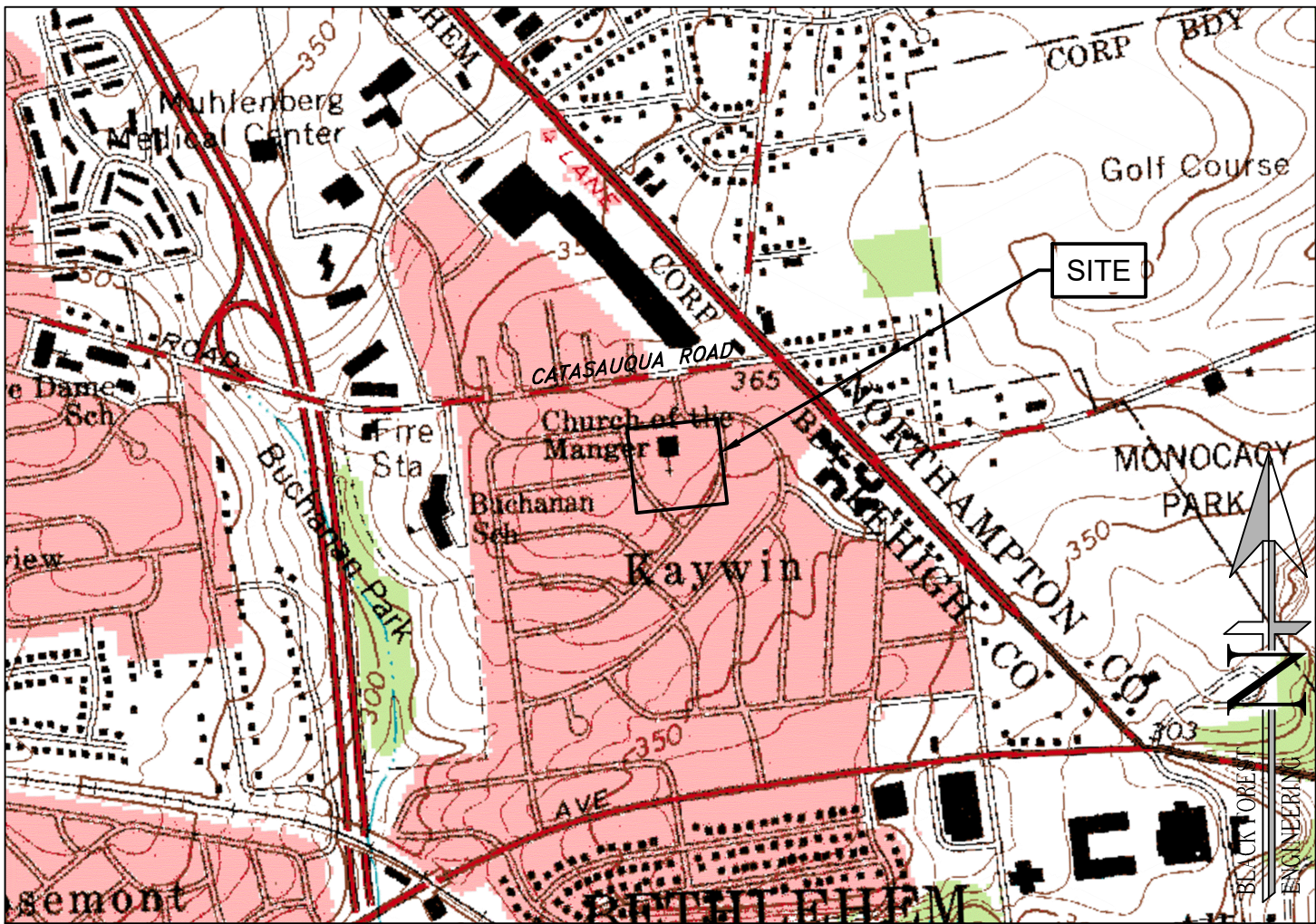


LAND DEVELOPMENT LOCATED IN THE
CITY OF BETHLEHEM
WARD 13 BLOCK 113
LEHIGH COUNTY
COMMONWEALTH OF PENNSYLVANIA

INVOLVING PARCELS LOCATED AT
1411 GREENVIEW DRIVE

1411 GREENVIEW DRIVE
LAND DEVELOPMENT
PRELIMINARY/FINAL PLAN



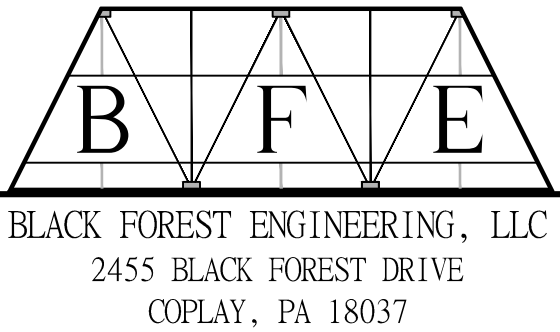
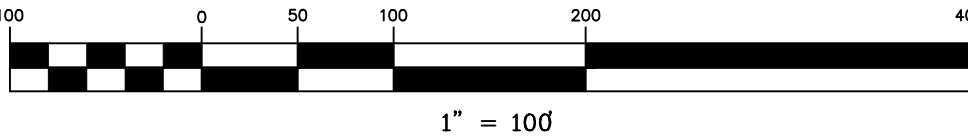
LOCATION MAP
USGS CATASAUQUA QUADRANGLE
SCALE: 1"=1000'



BLACK FOREST
ENGINEERING

PLAN INTENT

THE APPLICANT WISHES TO CONSTRUCT 24 TOWNHOMES WITH
OFFSTREET PARKING, STORMWATER MANAGEMENT, LANDSCAPING
AND PUBLIC UTILITIES.



EQUITABLE OWNER / DEVELOPER:
1015 PARTNERS LLC
555 ASHWOOD ROAD
NAZARETH, PA 18064

FINAL PLAN SHEET INDEX			
PLAN TITLE		SHEET NO.	
COVER		1 OF	9
* RECORD PLAN		2 OF	9
EXISTING FEATURES PLAN		3 OF	9
UTILITY PLAN		4 OF	9
GRADING PLAN		5 OF	9
LANDSCAPE AND LIGHTING PLAN		6 OF	9
CONSTRUCTION DETAILS		7 OF	9
CONSTRUCTION DETAILS		8 OF	9
CONSTRUCTION DETAILS		9 OF	9
PRE-DEV DRAINAGE PLAN		1 OF	2
POST-DEV DRAINAGE PLAN		2 OF	2
SUPPLEMENTAL PLANS			
ESPC PLAN			
PCSM PLAN			
* DENOTES PLAN TO BE RECORDED			

"CALL BEFORE YOU DIG"
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE
FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN
DESIGN STAGE - STOP CALL
PENNSYLVANIA ONE CALL SYSTEM, INC.
1-800-242-1776
SERIAL NO.20232380206

REV:	DESCRIPTION:		BY:	DATE:	
PROJECT NO.	SCALE:	DATE:	REVISION:		
2330	1"=100'	9/5/23	00		

SITE DATA

EQUITABLE OWNER: 1015 PARTNERS LLC
OWNER: CHURCH OF THE MANAGER
LOT 1
PINC: 642804111751
ADDRESS: 1411 GREENVIEW DRIVE
AREA: 99,159 SF (2.2764)

NUMBER OF LOTS -
EXISTING: 1
PROPOSED: 1

LINEAL FEET OF NEW STREETS - 0 L.F.

WATER SUPPLY - PROPOSED PUBLIC
SEWER - PROPOSED PUBLIC

ZONING DATA

ZONING DISTRICT:	RG MEDIUM DENSITY DISTRICT (SF ATTACHED DWELLINGS)
MINIMUM LOT SIZE:	REQUIRED 12,000 SF EXISTING 99,159 SF PROPOSED 99,159 SF
MINIMUM LOT WIDTH:	20 FT 300 FT 300 FT
MINIMUM YARDS:	FRONT: 20 FT SIDE: 25 FT REAR: 30 FT
	NA NA NA
	20 FT 25 FT 30 FT
MAX. BUILDING COVERAGE: 70%	13%
MAX. BUILDING HEIGHT: 35 FT (2.5 STORIES)	<35 FT
MIN LOT AREA PER DWELLING UNIT:	4,000 SF NA 4,131 SF

SURVEY NOTES:

1. THIS PLAN IS BASED ON A FIELD SURVEY CONDUCTED MAY 23, 2023 BY BLACK FOREST ENGINEERING LLC USING A TOTAL STATION AND GPS RTK UNIT.
2. BEARINGS BASED ON PA STATE PLANE SOUTH,NAD83.
3. ELEVATIONS BASED ON NAVD88.
4. UTILITY LOCATIONS SHOULD BE CONSIDERED APPROXIMATE AND HAVE BEEN BASED ON VISIBLE ABOVE-GROUND EVIDENCE. A CONTRACTOR SHALL DETERMINE THE ACTUAL LOCATION OF ALL UTILITIES SHOWN ON THIS PLAN AND ANY ADDITIONAL EXISTING UTILITIES NOT SHOWN ON THIS PLAN.
5. BOUNDARY LINES SHOWN WITH BEARINGS AND DISTANCES OR CURVE INFORMATION HAVE BEEN FIELD VERIFIED BY THIS SURVEY.

BENCHMARK FOR THIS PLAN

VERTICAL CONTROL IS BASED UPON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88). BEARING SYSTEM BASED UPON THE PENNSYLVANIA NORTH AMERICAN DATUM OF 1983, SOUTH ZONE, US FOOT (PA-NAD83).

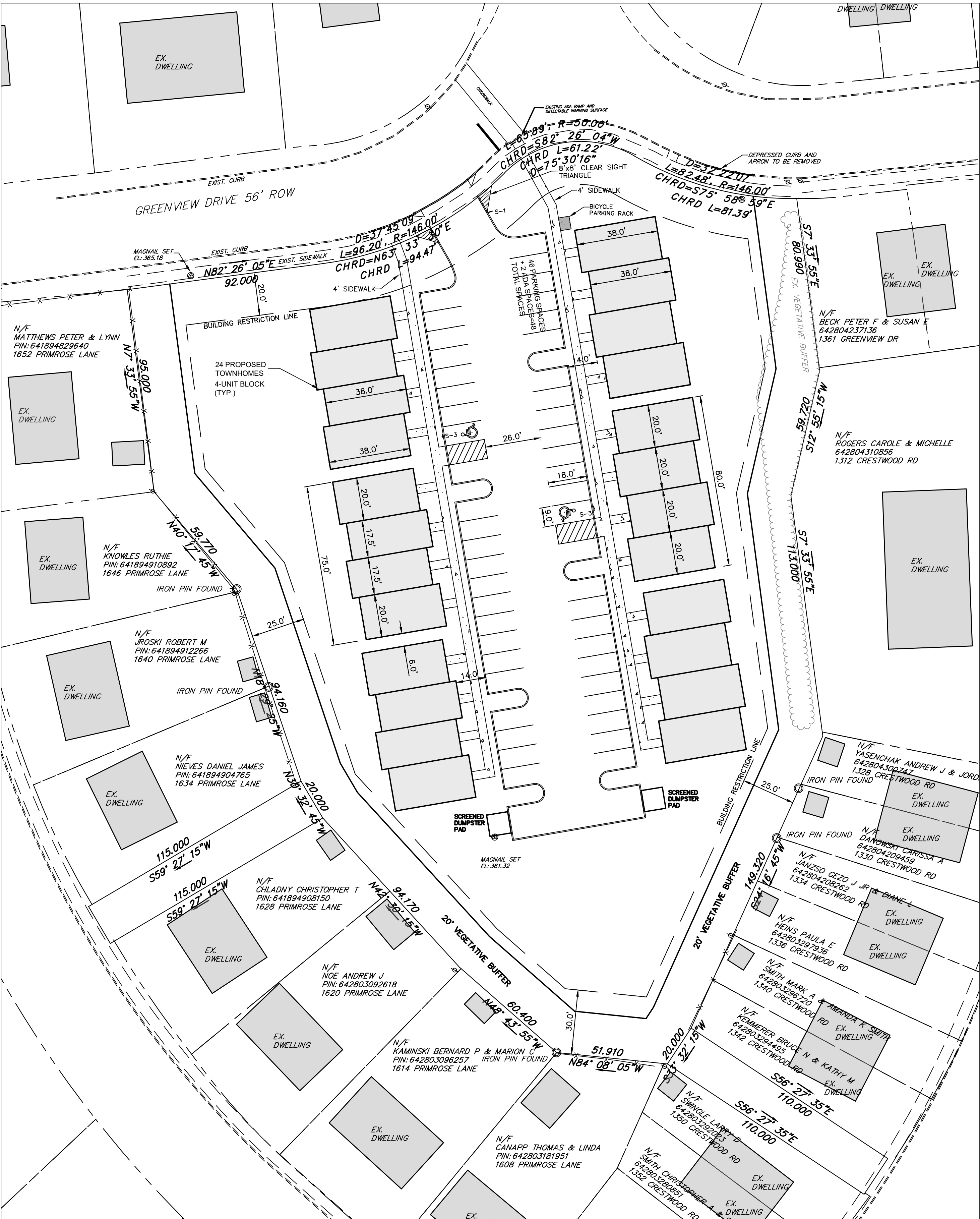
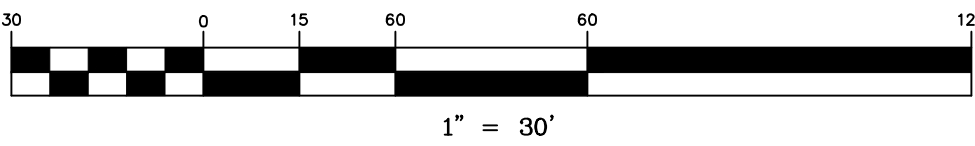
1. EXISTING MAGNAIL ELEV.=365.18

Legend

---	PROPERTY LINE
---	EXISTING RIGHT-OF-WAY
---	EXISTING EDGE OF PAVE
---	EXISTING VEGETATION
---	EXISTING CENTERLINE
---	EXISTING ROAD PAVEMENT
---	EXISTING SIDEWALK
---	EXISTING STRUCTURE
---	EXISTING ADJOINER
---	EXISTING MINOR CONTOUR
---	EXISTING MAJOR CONTOUR
---	EXISTING ELECTRIC POLE
---	EXISTING IRON PIN
---	EXISTING CONTROL POINT
---	EXISTING TEST PIT/PROBE

Proposed Legend

---	PROP. PROPERTY LINE
---	PROP. TRACT LINE
---	PROP. RIGHT-OF-WAY
---	PROP. EASEMENT
---	PROP. BUILDING RESTRICTION LINE
---	PROP. FENCE
---	PROP. TREE LINE
---	PROP. CENTERLINE
---	PROP. SIDEWALK
---	PROP. CURB
---	PROP. DRIVEWAY
---	PROP. CONTOUR MAJOR
---	PROP. CONTOUR MINOR
---	PROP. IRON PIN
---	PROP. CONCRETE MONUMENT
---	PROP. SIGN
---	PROP. TREE
---	PROP. BENCHMARK
---	PROP. BUILDING/STRUCTURE
---	PROP. DRIVEWAY



PARKING REQUIREMENT

VEHICLE:
2 SPACES PER DWELLING
24 UNITS x 2 = 48 SPACES REQ'D (48 PROVIDED)

IMPERVIOUS COVER

EXISTING CONDITION=30,210 SF
PROPOSED CONDITION=38,000 SF

NOTE:AN INCREASE OF 7,790 SF IS PROPOSED AND THEREFOR ACT 167 APPROVAL IS NOT REQUIRED. STORMWATER WILL BE CONTROLLED UNDER NPDES REGULATORY REQUIREMENTS.

SIGN SCHEDULE

SYMBOL	LEGEND	QTY.	BLANK SIZE	PENNDOT #
S-1	STOP	1	24 X 24	R1-1
S-2	RESERVED PARKING WITH PARKING FINE PLAQUE	0	12 X 18 12 X 18	R7-8 R7-8B
S-3	SAME AS S-2 WITH VAN ACCESSIBLE PLAQUE AND PARKING FINE PLAQUE	2	12 X 18 12 X 6 12 X 18	R7-8 R7-8A R7-8B

SIGNATURE BLOCKS

CERTIFICATION OF OWNERSHIP

I (WE) THE OWNER(S) OF _____, BEING DULY SWORN ACCORDING TO LAW, DEPOSE AND SAY THAT I (WE) AM (ARE) THE SOLE OWNER(S) OF THE ABOVE PROPERTY IN PEACEFUL POSSESSION OF THE SAME AND THAT THERE ARE NO SUITS OR LIENS PENDING AFFECTING THE TITLE THEREOF.

SIGNATURE OF OWNER _____ PRINTED NAME OF OWNER _____

NOTARIZATION

SWORN AND SUBSCRIBED BEFORE ME THIS _____ DAY

OF _____ A.D.

(LEGIBLE IMPRESSION OF NOTARY SEAL)

NOTARY PUBLIC

MY COMMISSION EXPIRES: _____

PLANNING COMMISSION APPROVAL

THE WITHIN PLOT OR PLAN OF LAND LOCATED IN BETHLEHEM, NORTHAMPTON COUNTY, PENNSYLVANIA, WAS APPROVED BY THE BETHLEHEM CITY PLANNING COMMISSION.

CHAIRMAN _____ DATE _____

PLANNING DIRECTOR _____ DATE _____

ENGINEER'S CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN CORRECTLY AND ACCURATELY REPRESENTS THE LANDS OF THE OWNER AND, WHERE APPLICABLE, THE LOTS, BUILDINGS, STREETS, PARKING AREAS, WALKWAYS, AND OTHER STRUCTURES AND IMPROVEMENTS SHOWN THEREON.

JOSEPH EDWARD RENTKO

REGISTRATION NO. PE085609

PROOF OF RECORDING

PLAN RECORDED IN THE OFFICE OF THE RECORDER OF DEEDS OF NORTHAMPTON COUNTY.

PENNSYLVANIA, UNDER DOCKET ID # _____

ON THE _____ DAY OF _____ 20____

WITNESS MY HAND AND SEAL OF OFFICE THIS _____ DAY OF _____ 20____

RECORDER OF DEEDS
WITNESS: _____

L.V.P.C REVIEW

REVIEWED BY THE LEHIGH VALLEY PLANNING COMMISSION

PLANNING _____ DATE _____

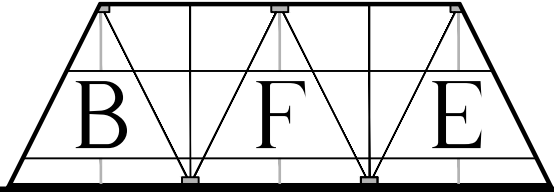
RECORD NOTES

1. EACH 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.
2. ALL IMPROVEMENTS WITHIN THE PUBLIC RIGHT-OF-WAY SHALL COMPLY WITH THE CITY OF BETHLEHEM STANDARDS AND SPECIFICATIONS AND THE APPROPRIATE PUBLIC UTILITY AUTHORITIES.
3. THE SITE WAS EVALUATED FOR WETLANDS AND WATERCOURSES AND IT WAS DETERMINED THAT WETLANDS AND WATERCOURSES DO NOT EXIST ON THE SITE.
4. THERE ARE NO FEMA DELINEATED 100-YR FLOODPLAINS OR WATERCOURSES ON OR NEAR THIS PROPERTY.
5. ALL LOTS SHALL HAVE A FIVE (5) FOOT DRAINAGE, GRADING AND UTILITY EASEMENT ALONG OUTER LOT LINES UNLESS NOTED OTHERWISE.
6. ACTUAL UTILITY CONNECTION POINTS SHALL BE VERIFIED PRIOR TO CONSTRUCTION.
7. ALL LOTS SHALL BE LAID OUT AND GRADED TO PREVENT CROSS LOT DRAINAGE AND TO PROVIDE POSITIVE DRAINAGE AWAY FROM PROPOSED BUILDING AREAS.
8. ALL CITY PERMITS MUST BE OBTAINED PRIOR TO THE START OF CONSTRUCTION.
9. RUNOFF FROM ALL ON-SITE IMPERVIOUS AREAS SHALL NOT BE DIRECTED INTO THE PUBLIC SANITARY SEWER, ACROSS THE SIDEWALK AREA WITHIN THE PUBLIC RIGHT-OF-WAY, OR ONTO ADJOINING PROPERTIES, SECTION 1753.08 B.4 OF THE CITY PROPERTY REHABILITATION & MAINTENANCE CODE.
10. ALL LATERAL SANITARY SEWER PIPING IS TO BE SCH 40 OR SDR-26 PVC PIPING UNLESS OTHERWISE NOTED..
11. WORK TO BE PERFORMED ONSITE, SHALL BE DONE IN ACCORDANCE WITH THE IBC.
12. ANY RETAINING WALL 4 FEET OR GREATER IN HEIGHT SHALL HAVE A DESIGN PREPARED, SIGNED, AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF PENNSYLVANIA AND SHALL BE SUBMITTED AT THE TIME OF BUILDING PERMIT APPLICATION TO BE REVIEWED AND APPROVED BY AN APPROVED THIRD PARTY REVIEWER. THE WALL SHALL BE DESIGNED TO BE CONTAINED COMPLETELY WITHIN THE APPLICANT'S PROPERTY OR AN EASEMENT SHALL BE ACQUIRED AND INDICATED ON THE RECORD PLAN TO ALLOW FOR THE CONSTRUCTION OF ANY PORTION OF THE WALL AND/OR WALL TIE BACKS TO BE CONSTRUCTED ON THE ADJOINING PROPERTY.
13. ALL PAVEMENT MARKINGS MUST BE THERMOPLASTIC PAVEMENT MARKINGS.
14. THE PROJECT WILL REQUIRE AN APPROVED PLANNING MODULE FOR 24-UNITS, SEE DEP CODE# (xxxxxxxxxx).
15. A TOTAL LOT (BLANKET) STORMWATER MANAGEMENT EASEMENT IS HEREBY PROVIDED ACROSS THE LOT IN ORDER FOR INSPECTION AND MAINTENANCE OF THE PROPOSED STORMWATER MANAGEMENT CONTROLS.
16. THE CITY OF BETHLEHEM FIRE DEPARTMENT SHALL APPROVE THE FINAL LOCATION OF THE PROPOSED FIRE HYDRANT. THE PROPOSED UNITS WILL BE INDIVIDUALLY SPRINKLERED AND THEREFORE A KNOX BOX, FIRE DEPARTMENT CONNECTION (FDC), AND POST INDICATING VALVE (PIV) HAVE NOT BEEN PROPOSED.
17. BY SUBMISSION OF THESE PLANS THE ENGINEER ON RECORD CERTIFIES THAT THESE PLANS ARE IN COMPLETE CONFORMANCE WITH THE CITY OF BETHLEHEM STORMWATER MANAGEMENT ORDINANCE.
18. IN ORDER TO MAINTAIN CONTINUITY BETWEEN PLAN REVISIONS, ANY CHANGES TO A PREVIOUS PLAN SUBMISSION SHALL BE FLAGGED WITH A TRIANGLE. ANY CHANGES NOT FLAGGED MAY BE CONSIDERED NOT APPROVED. FLAGGED CHANGES SHALL BE REFERENCED TO THE APPROPRIATE REVISION DATE DATE IN THE REVISION BLOCK.
19. 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 THE AS-BUILT PLANS AND SUBMITTED TO THE CITY ENGINEER'S OFFICE. ALL FINAL DRAWINGS SHALL SHOW NORTH AMERICAN DATUM (NAAD) 1983 STATE PLANE COORDINATES IN FEET (PA 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 THE FORM OF MYLAR COPY. THE ENGINEER OF RECORD SHALL CERTIFY (IE PE STAMPED AND SIGNED) THAT THE RECORD DRAWINGS COMPLY SUBSTANTIALLY WITH THE APPROVED PLAN AND THAT THEY CONFORM TO INDUSTRY STANDARDS. ALL DIGITAL FILES RESIDE ON PC COMPATIBLE CD ROM CONTAINING THE DIGITAL REPRESENTATION OF THE FINAL PLANAS 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 CAD STANDARDS AND AS DESCRIBED IN THE APPENDIX A OF THE CITY'S SUBDIVISION AND LAND DEVELOPMENT ORDINANCE.

"CALL BEFORE YOU DIG"

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

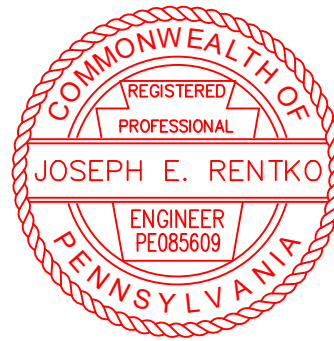
PENNSYLVANIA ONE CALL SYSTEM, INC.
1-800-242-1776
SERIAL NO.20232380206



BLACK FOREST ENGINEERING, LLC
2455 BLACK FOREST DRIVE
COPLAY, PA 18037

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SEAL:



JOSEPH E. RENTKO, P.E. #PE085609
2455 BLACK FOREST DRIVE
COPLAY, PA 18037
270-239-4499

REV: _____ DESCRIPTION: _____ BY _____ DATE _____

PROJECT TITLE:

1411 GREENVIEW DRIVE

EQUITABLE OWNER: 1015 PARTNERS LLC
555 ASHWOOD ROAD
NAZARETH, PA 18064

PROJECT LOCATION:

CITY OF BETHLEHEM
WARD 13; BLOCK 113
LEHIGH COUNTY
PENNSYLVANIA

PLAN TITLE:

RECORD

SCALE: 1"=30' DATE: 9/5/23 DRAWN: JER CHECKED: JER

PROJECT NO. 2209 DRAWING NO. 2 OF 9 REVISION: 00

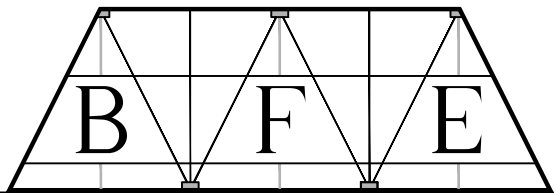
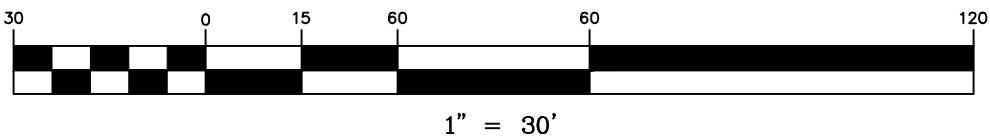
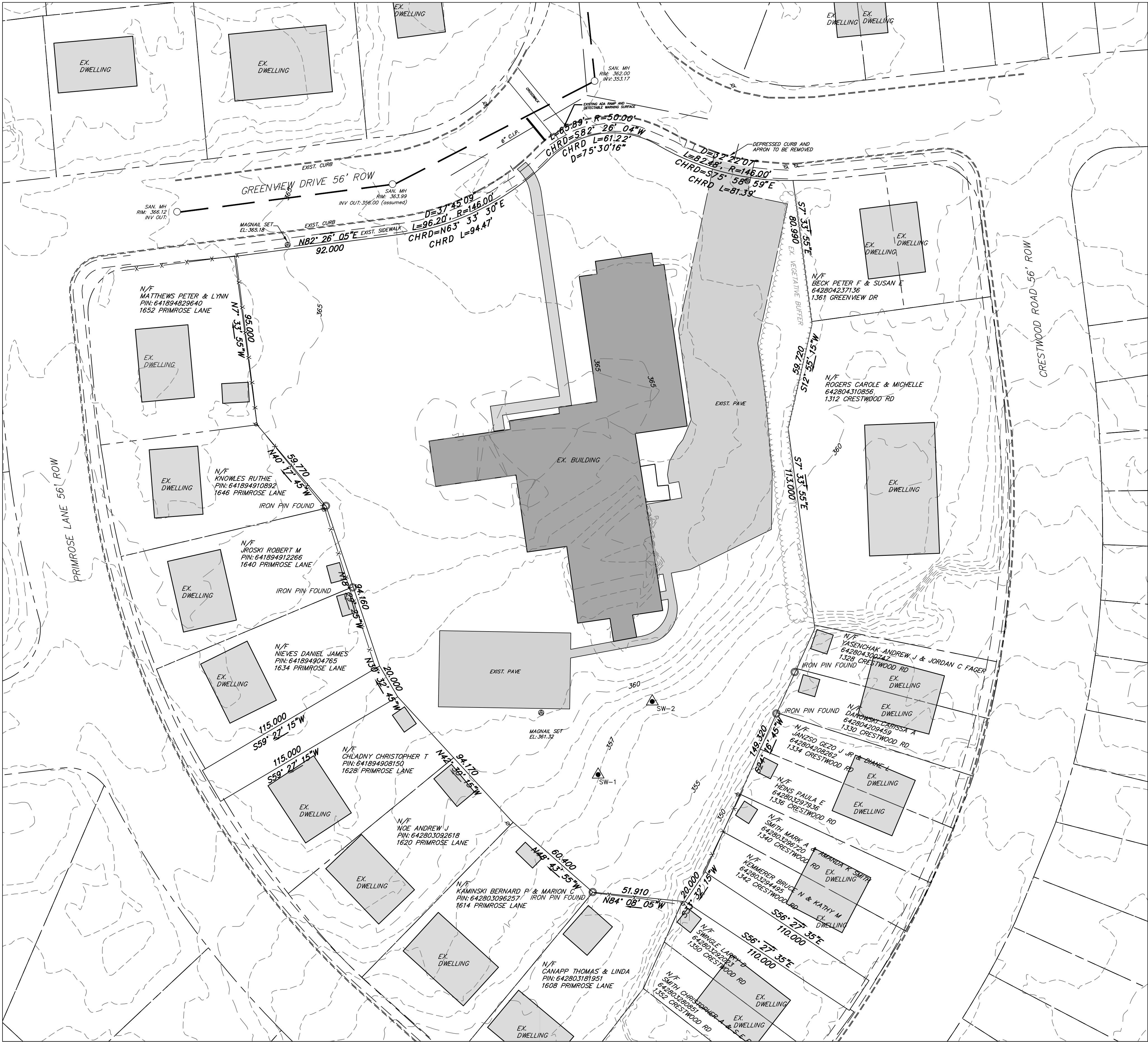
- EXISTING
Legend
- PROPERTY LINE
 - EXISTING RIGHT-OF-WAY
 - BUILDING RESTRICTION LINE
 - EXISTING EDGE OF PAVE
 - EXISTING VEGETATION
 - EXISTING CENTERLINE
 - EXISTING ROAD PAVEMENT
 - EXISTING SIDEWALK
 - EXISTING STRUCTURE
 - EXISTING ADJOINER
 - EXISTING GAS LINE
 - EXISTING SANITARY LINE
 - EXISTING STORM SEWER
 - EXISTING WATER LINE
 - EXISTING CURB
 - EXISTING FENCE
 - EXISTING MINOR CONTOUR
 - EXISTING MAJOR CONTOUR
 - EXISTING ELECTRIC POLE
 - EXISTING GAS VALVE
 - EXISTING WATER VALVE
 - EXISTING FIRE HYDRANT
 - EXISTING IRON PIN
 - EXISTING CONTROL POINT
 - EXISTING TEST PIT/PROBE
 - EXISTING INLET

SOIL TYPES

UmB Urban land-Duffield Complex, 0 to 8 percent slopes

EXISTING TREES:

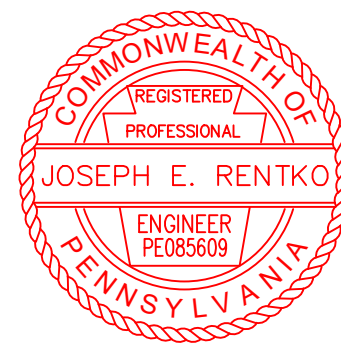
THERE ARE NO EXISTING TREES MEETING THE REQUIREMENTS OF CITY ORDINANCE 1318.28 PLANNED FOR REMOVAL. ANY SUCH EXISTING TREE MEETING THIS REQUIREMENT SHALL BE REPLACED AS REQUIRED.



BLACK FOREST ENGINEERING, LLC
2455 BLACK FOREST DRIVE
COPLAY, PA 18037

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SEAL:



JOSEPH E. RENTKO, P.E. #PED85609
2455 BLACK FOREST DRIVE
COPLAY, PA 18037
717-239-4499

REV: DESCRIPTION: BY DATE

PROJECT TITLE:
1411 GREENVIEW DRIVE

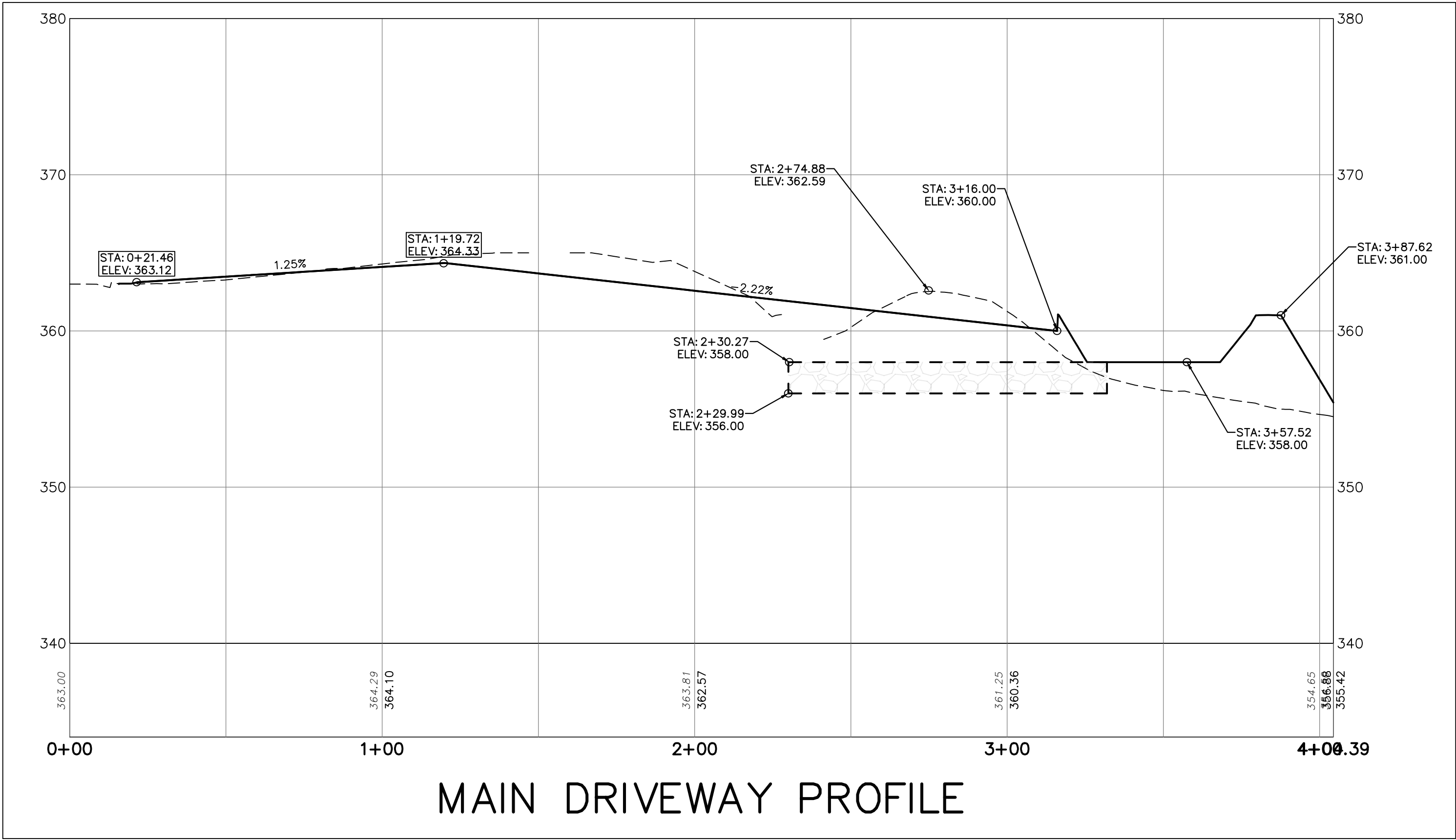
PROJECT OWNER:
1015 PARTNERS LLC
555 ASHWOOD ROAD
NAZARETH, PA 18064

PROJECT LOCATION:
**CITY OF BETHLEHEM
WARD 13; BLOCK 113
LEHIGH COUNTY
PENNSYLVANIA**

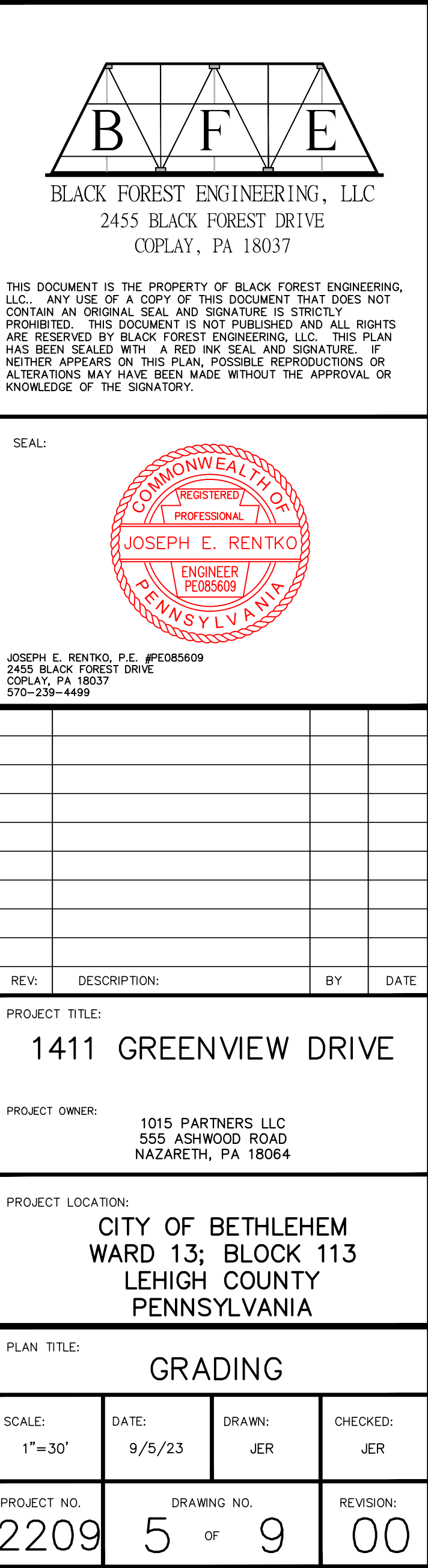
PLAN TITLE:
EXISTING SITE

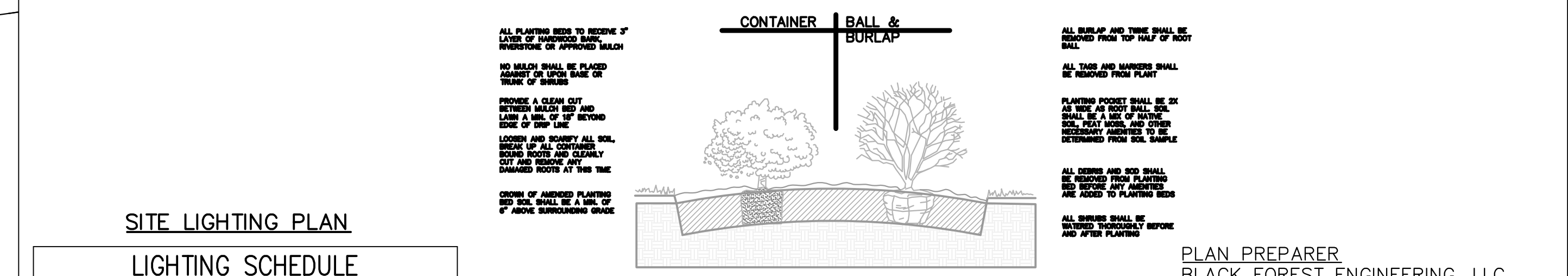
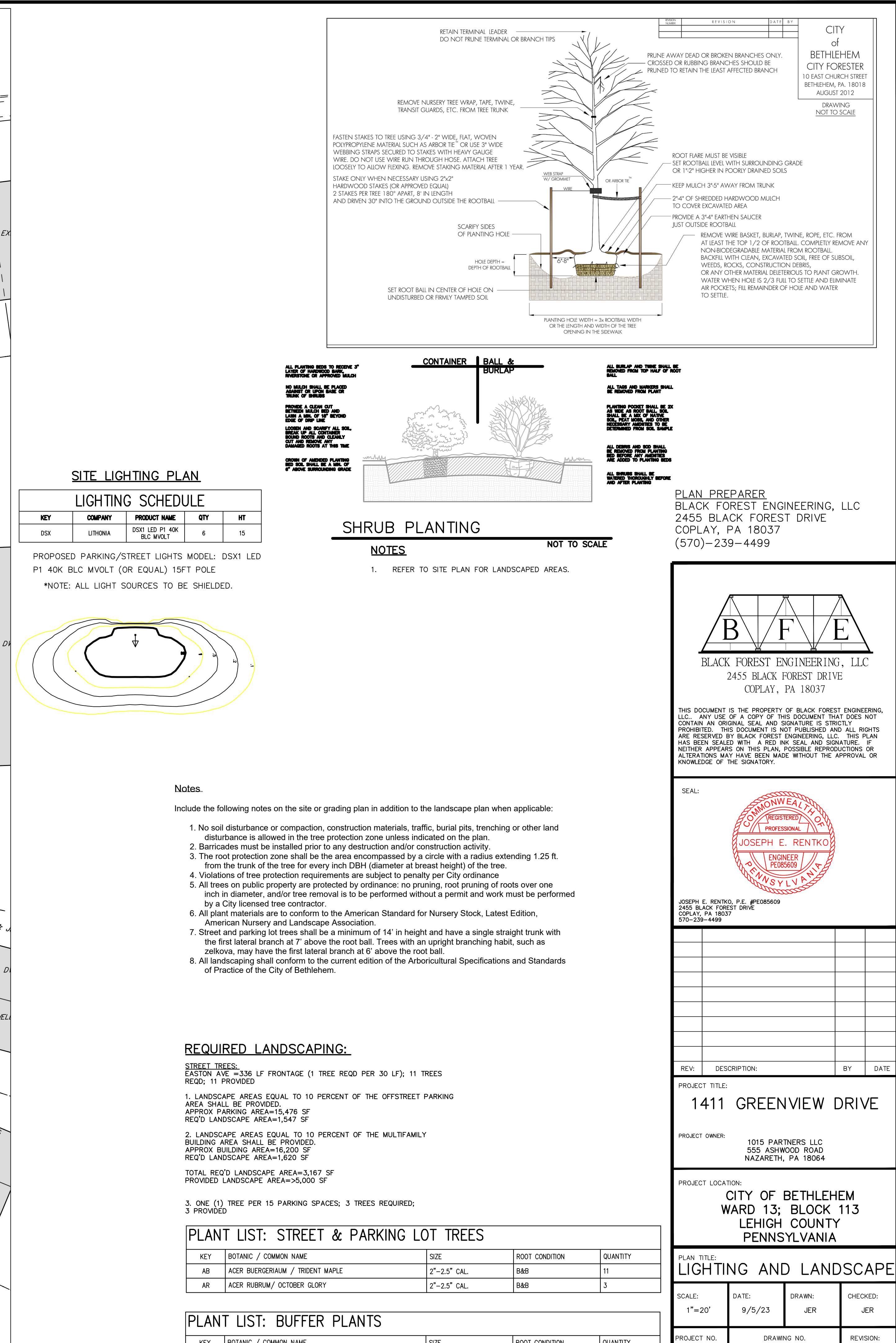
SCALE: 1"=30' DATE: 9/5/23 DRAWN: JER CHECKED: JER

PROJECT NO. 2209 DRAWING NO. 3 OF 9 REVISION: 00

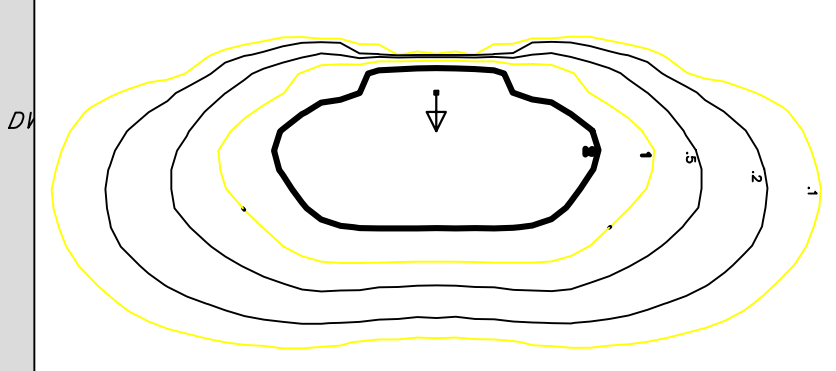


MAIN DRIVEWAY PROFILE
SCALE: 1"=6' VERT.
1"=30' HORIZ.





PROPOSED PARKING/STREET LIGHTS MODEL: DSX1 LED
P1 40K BLC MVOLT (OR EQUAL) 15FT POLE
*NOTE: ALL LIGHT SOURCES TO BE SHIELDED.



Notes.

Include the following notes on the site or grading plan in addition to the landscape plan when applicable:

1. No soil disturbance or compaction, construction materials, traffic, burial pits, trenching or other land disturbance is allowed in the tree protection zone unless indicated on the plan.
2. Barricades must be installed prior to any destruction and/or construction activity.
3. The tree protection zone shall be the area encompassed by a circle with a radius extending 1.25 ft. from the trunk of the tree for every inch DBH (diameter at breast height) of the tree.
4. Violations of tree protection requirements are subject to penalty per City ordinance.
5. All trees on public property are protected by ordinance: no pruning, root pruning of roots over one inch in diameter, and/or tree removal is to be performed without a permit and work must be performed by a City licensed tree contractor.
6. All plant materials are to conform to the American Standard for Nursery Stock, Latest Edition, American Nursery & Landscape Association.
7. Street and parking lot trees shall be minimum of 14' in height and have a single straight trunk with the first lateral branch at 7' above the root ball. Trees with an upright branching habit, such as zelkova, may have the first lateral branch at 6' above the root ball.
8. All landscaping shall conform to the current edition of the Arboricultural Specifications and Standards of Practice of the City of Bethlehem.

REQUIRED LANDSCAPING:

STREET TREES:
EASTON AVE = 336 LF FRONTAGE (1 TREE REQD PER 30 LF); 11 TREES
REQD; 11 PROVIDED

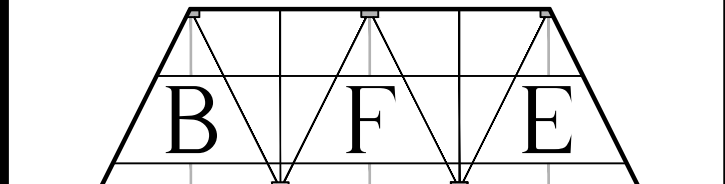
1. LANDSCAPE AREAS EQUAL TO 10 PERCENT OF THE OFFSTREET PARKING AREA SHALL BE PROVIDED.
APPROX PARKING AREA=15,476 SF
REQ'D LANDSCAPE AREA=1,547 SF
2. LANDSCAPE AREAS EQUAL TO 10 PERCENT OF THE MULTIFAMILY BUILDING AREA SHALL BE PROVIDED.
APPROX BUILDING AREA=16,200 SF
REQ'D LANDSCAPE AREA=1,620 SF
- TOTAL REQ'D LANDSCAPE AREA=3,167 SF
PROVIDED LANDSCAPE AREA=5,000 SF

3. ONE (1) TREE PER 15 PARKING SPACES; 3 TREES REQUIRED;
3 PROVIDED

PLANT LIST: STREET & PARKING LOT TREES				
KEY	BOTANIC / COMMON NAME	SIZE	ROOT CONDITION	QUANTITY
AB	ACER BUERGERIAUM / TRIDENT MAPLE	2"-2.5" CAL.	B&B	11
AR	ACER RUBRUM/ OCTOBER GLORY	2"-2.5" CAL.	B&B	3

PLANT LIST: BUFFER PLANTS				
KEY	BOTANIC / COMMON NAME	SIZE	ROOT CONDITION	QUANTITY
VP	VIBURNUM X PRAGENSE / PRAGENSE VIBURNUM	7 LB	B&B	102

PLAN PREPARER
BLACK FOREST ENGINEERING, LLC
2455 BLACK FOREST DRIVE
COPLAY, PA 18037
(570)-239-4499



BLACK FOREST ENGINEERING, LLC
2455 BLACK FOREST DRIVE
COPLAY, PA 18037

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SEAL:



JOSEPH E. RENTKO, P.E. #PE085609
2455 BLACK FOREST DRIVE
COPLAY, PA 18037
570-239-4489

[illegible]

REV:	DESCRIPTION:	BY	DATE
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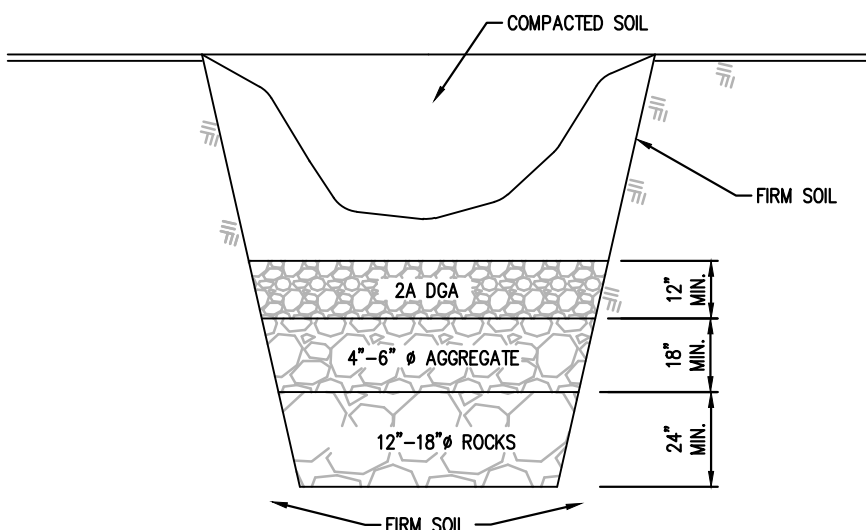
PROJECT TITLE: 1411 GREENVIEW DRIVE

PROJECT OWNER: 1015 PARTNERS LLC
555 ASHWOOD ROAD
NAZARETH, PA 18064

PROJECT LOCATION:
CITY OF BETHLEHEM
WARD 13; BLOCK 113
LEHIGH COUNTY
PENNSYLVANIA

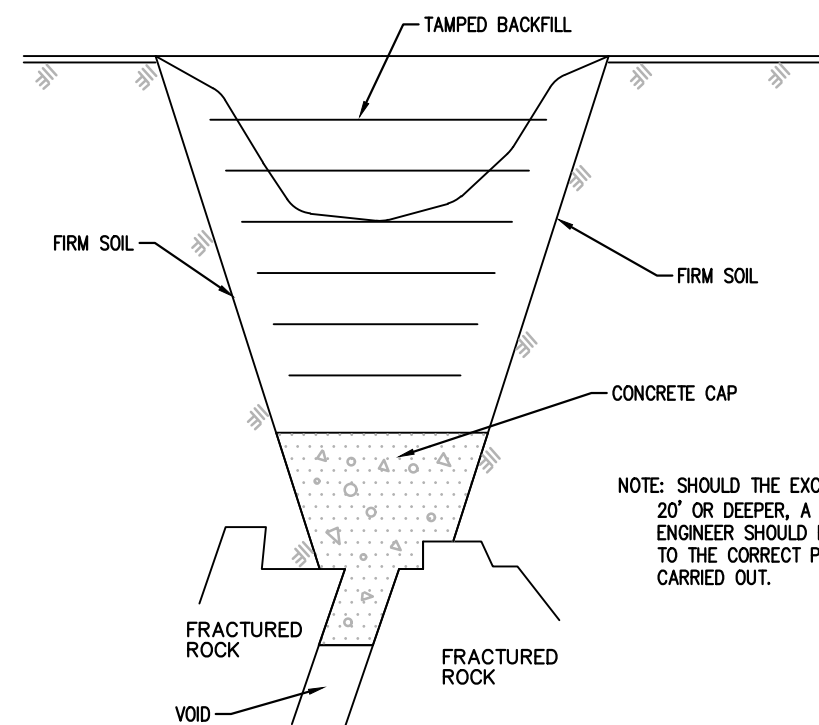
PLAN TITLE:
LIGHTING AND LANDSCAPE

SCALE: 1"=20'	DATE: 9/5/23	DRAWN: JER	CHECKED: JER
PROJECT NO. 2209	DRAWING NO. 6 OF 9		REVISION: 00



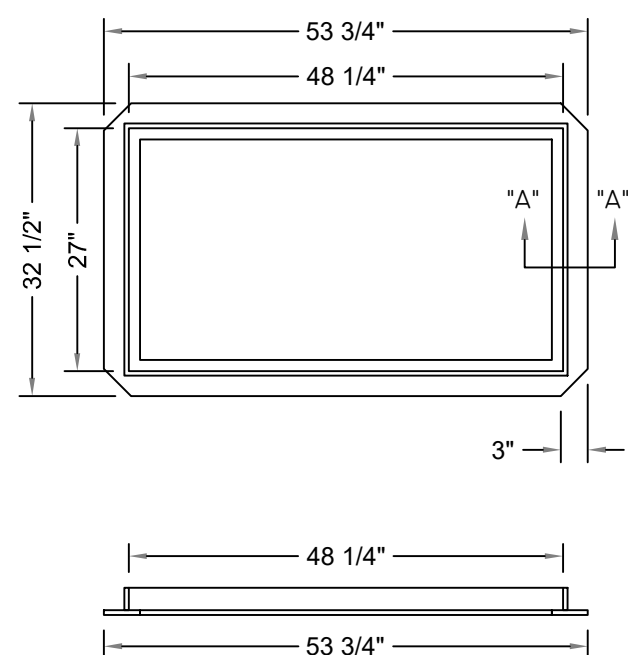
Sinkhole In Soil

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" LIFTS WITH A POWER TAMPER OR RAMMER TO AT LEAST 95% OF THE STANDARD PROCTOR.
5. BACKFILL HOLE ABOVE EXISTING GRADE TO DIVERT SURFACE WATER.



Sinkhole In Rock

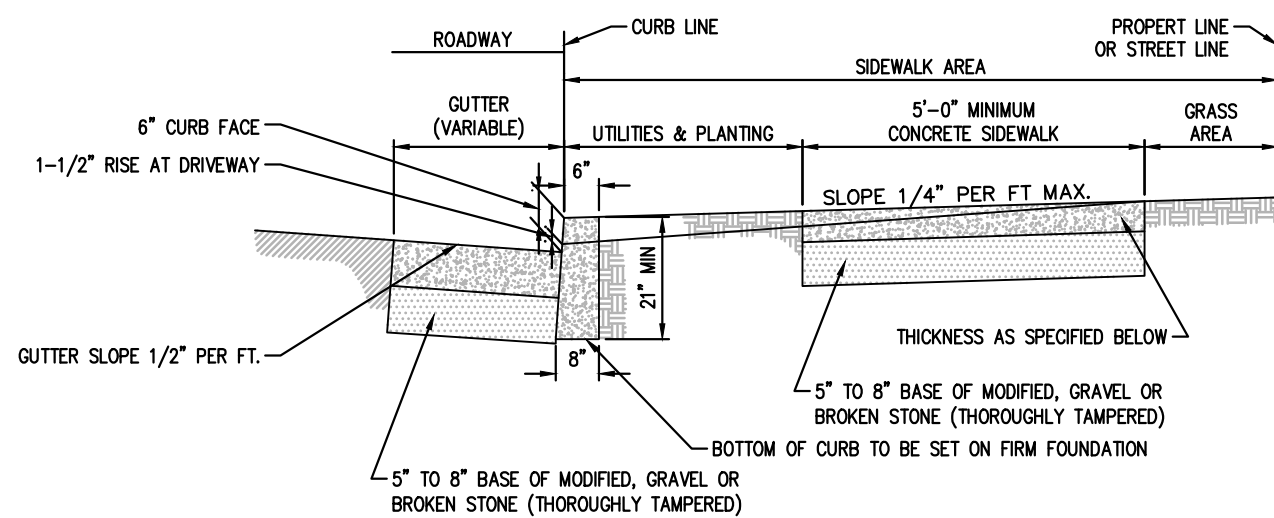
1. THE REPAIR TECHNIQUES AS DESCRIBED BELOW ARE SUITABLE ONLY IF THE SINKHOLE IS LOCATED IN AN OPEN AREA. IF THE SINKHOLE IS LOCATED UNDER OR NEAR A STRUCTURE OR A BUILDING, COMPACTION GROUTING MAY BE NECESSARY FOR REMEDIATION, AS DETERMINED BY A GEOTECHNICAL ENGINEER LICENSED IN THE COMMONWEALTH OF PENNSYLVANIA.
2. EXCAVATE DOWN TO BEDROCK OR TO THE SINKHOLE THROAT.
3. EXPOSE THE ROCK SURFACE BY WASHING THE AREA WITH A SMALL HOSE WATER SPRAY AND INSTALL HIGHSLUMP CEMENT INTO VOIDS AND CREVICES UNTIL VOIDS ARE FILLED AND A CAP COVERS THE AREA. THE LIMIT OF EXCAVATION AND CONCRETE SHALL BE DETERMINED BY THE ENGINEER.
4. AFTER CONCRETE HAS SET OVERNIGHT, BACKFILL HOLE WITH RELATIVELY IMPERMEABLE CLAY SOIL. COMPACT SOIL IN 6" LIFTS WITH A POWER TAMPER OR RAMMER TO AT LEAST 95% OF THE STANDARD PROCTOR. THE TOP THREE(3) FEET SHALL BE BACKFILLED WITH 20% 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.



- NOTES:**
- STRUCTURAL STEEL COATED WITH (1) COAT OF BITUMINOUS PAINT.
 - STRUCTURAL STEEL TO MEET OR EXCEED REQUIREMENTS OF AASHTO M270 OR ASTM-A709 GRADE 36
 - ALL WELDING IS DONE BY CERTIFIED WELDERS AS PER PENNDOT PUBL. 408, SECTION 1105.03.

MONARCH PRECAST CONCRETE CORP.
425 NORTH DAUPHIN STREET ALLENTOWN, PA. 18109 PHONE (610) 435-6746 WWW.MONARCHPRECAST.COM FAX (610) 437-7133

3" M ALTERNATE STEEL FRAME



General Requirements:

ONE COURSE (MONOLITHIC) CONSTRUCTION FOR ALL CURB, GUTTER AND SIDEWALK CONCRETE MIX: TO BE CLASS A CONCRETE 3500# 8 BAG MIX - 5.6 GAL. WATER PER BAG THROUGHOUT; USE POWER BATCH MIXER. NO SLAG.

CURB: 22" MINIMUM DEPTH WITH APPROVED FINISH ON TOP AND EXPOSE FACE.

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

SIDEWALK: THICKNESS - RESIDENTIAL AREA - 5", BUSINESS AND INDUSTRIAL AREAS - 6"

AT RESIDENTIAL DRIVEWAYS - 6", AT BUSINESS AND INDUSTRIAL DRIVEWAYS - 8"

USE WOOD FLOAT TO PRODUCE SKID RESISTANCE SURFACE.

ONRADES OF 3% OR MORE PROVIDE A ROUGHER FINISH.

SLOPE - WALK AND PARKWAY AREAS 1/4" PER FOOT (2%) TOWARD CURB.

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

HANDICAP RAMES: REQUIRED ON ALL RAMP IN ACCORDANCE WITH CURRENT ADA REQUIREMENTS.

DRIVEWAYS: SEE CITY STANDARD DRIVEWAY ENTRANCE AND APRON SKECH.

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

Ordinance Requirements:

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

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

DETAIL REQUIREMENTS: FOR FURTHER DETAILS AND OTHER REQUIREMENTS SEE THE FOLLOWING DOCUMENTS ON FILE IN THE OFFICE OF THE CITY ENGINEER:

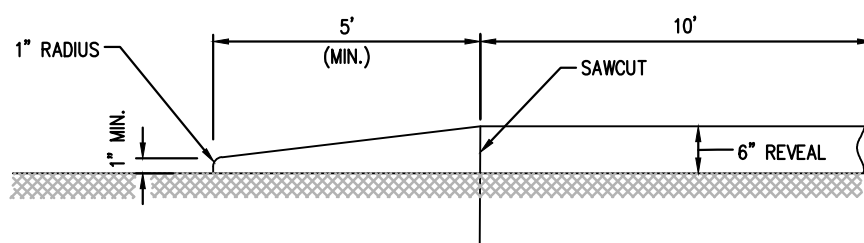
"STANDARD SPECIFICATIONS FOR THE CONSTRUCTION OF CONCRETE CURB, GUTTER AND SIDEWALK" COPIED ORDINANCES OF THE CITY OF BETHLEHEM, ARTICLES 903 AND 909.

NOTE:

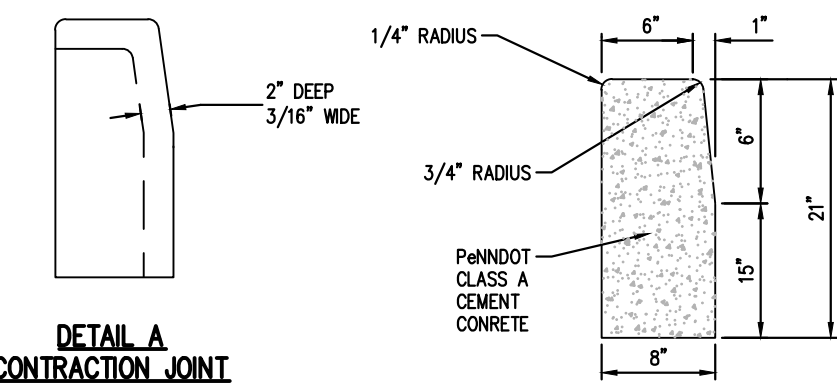
- WHENEVER A CURB, GUTTER AND/OR SIDEWALK IS LOCATED IN THE HISTORIC DISTRICT, SPECIAL REQUIREMENTS MAY APPLY.
- CHANGES TO DIMENSIONAL REQUIREMENTS MAY BE CONSIDERED IN CASES WHERE OBSTRUCTIONS OR ENCROACHMENTS EXIST. ANY EXCEPTIONS MUST BE APPROVED BY THE CITY ENGINEER. CURRENT ADA REQUIREMENTS MUST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

CITY OF BETHLEHEM, PA.
BUREAU OF ENGINEERING

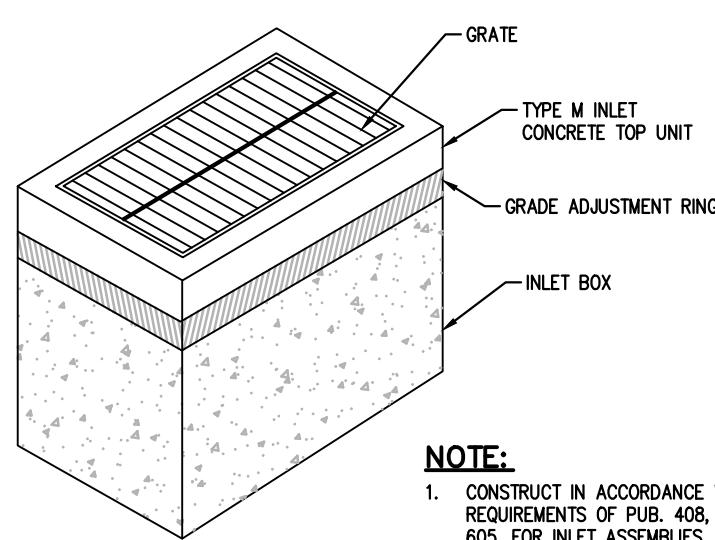
Construction Standard No. 1



Typical Curb Taper Detail



TYPICAL CROSS SECTION



NOTE:

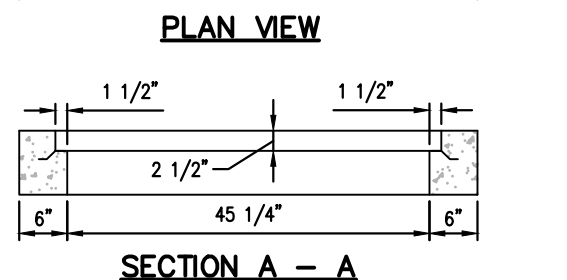
1. CONSTRUCT IN ACCORDANCE WITH REQUIREMENTS OF PUB. 408, SECTION 605, FOR INLET ASSEMBLIES.
2. GRADE ADJUSTMENT RINGS SHALL BE MASONRY OR PRECAST CONCRETE CONSTRUCTION.

TYPE M INLET

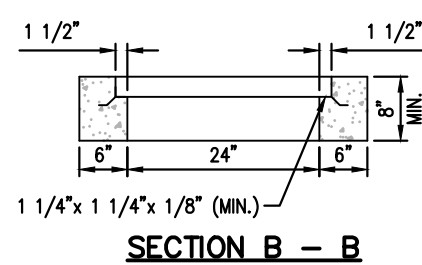
NOT TO SCALE

NOTES:

1. THESE DETAILS DEPICT THE SHAPE AND DIMENSIONS REQUIRED FOR UNIFORMITY AND COMPATIBILITY. THEY DO NOT INCLUDE DETAILS REQUIRED FOR MANUFACTURING AND HANDLING PRECAST TOP UNITS. ONLY TOP UNITS SUPPLIED BY A MANUFACTURER LISTED IN BULLETIN 15 SHALL BE PERMITTED.
2. CAST-IN-PLACE TOP UNITS MAY BE MONOLITHIC WITH THE INLET BOX.
3. PROVIDE ANGLES EMBEDDED IN THE CONCRETE AS A BEARING AREA FOR THE GRATE FOR ALL TOP UNITS WHICH SEAT THE GRATE DIRECTLY WITHIN THE UNIT.
4. PLACE A TYPE IN INLET ADJACENT TO THE BACK EDGE OF THE CURB, FLUSH WITH THE PAVEMENT SURFACE, WHEN REQUIRED WITHIN A CONCRETE MOUNTABLE CURB SECTION.

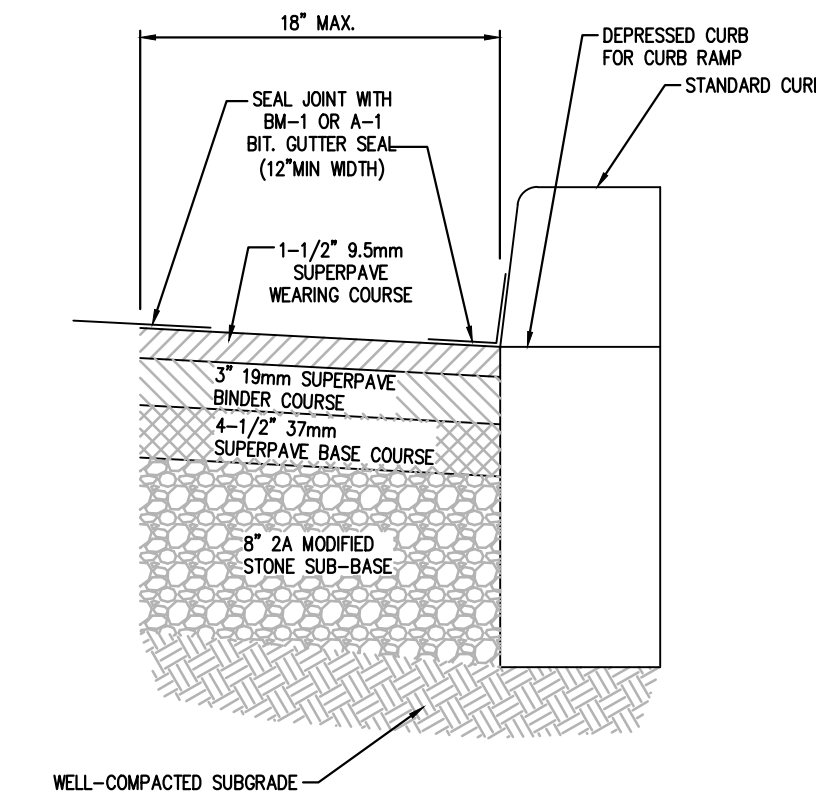


SECTION A - A



SECTION B - B

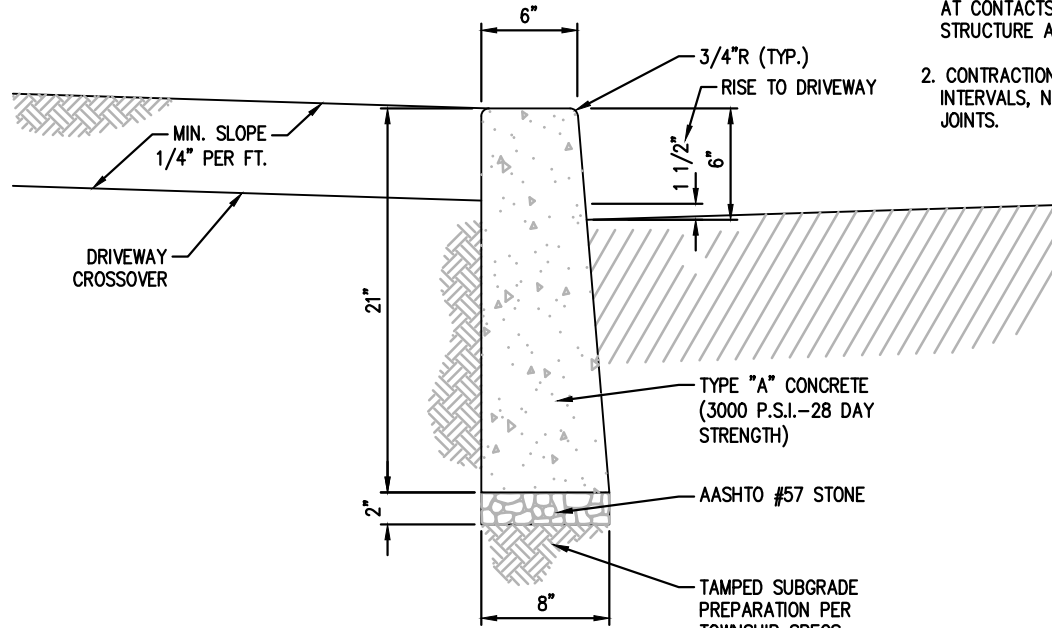
TYPE M INLET CONCRETE TOP UNITS



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

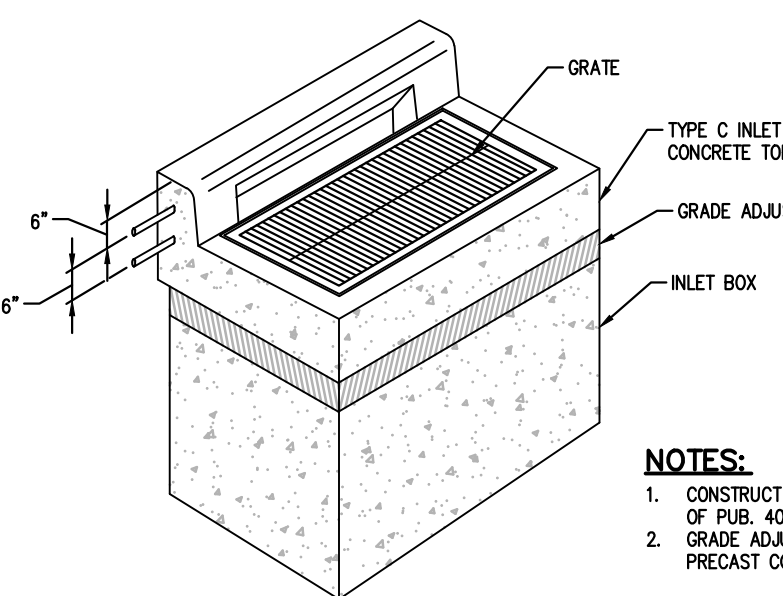
Pavement Restoration For Curb Replacement

NOT TO SCALE



Upright Curb Detail

NOT TO SCALE

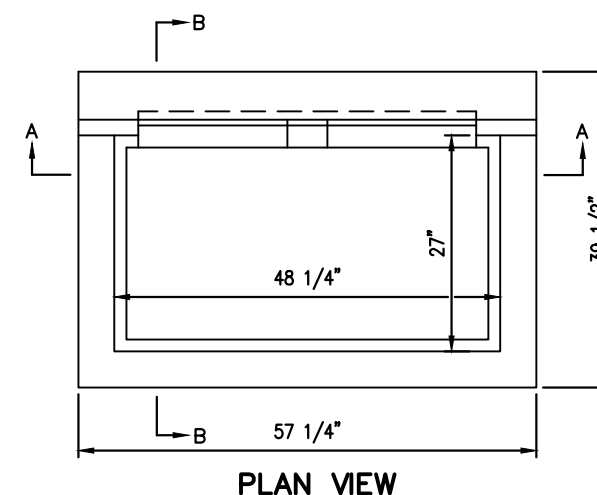


NOTES:

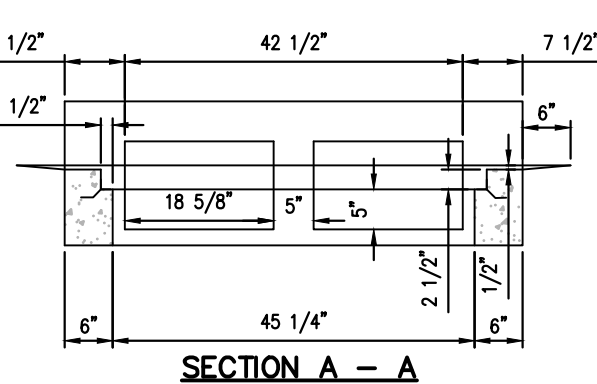
1. CONSTRUCT IN ACCORDANCE WITH REQUIREMENTS OF PUB. 408, SEC. 605 FOR INLET ASSEMBLIES.
2. GRADE ADJUSTMENT SHALL BE MASONRY OR PRECAST CONCRETE CONSTRUCTION.

TYPE C INLET

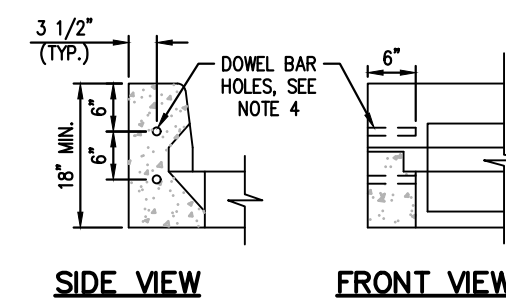
NOT TO SCALE



PLAN VIEW



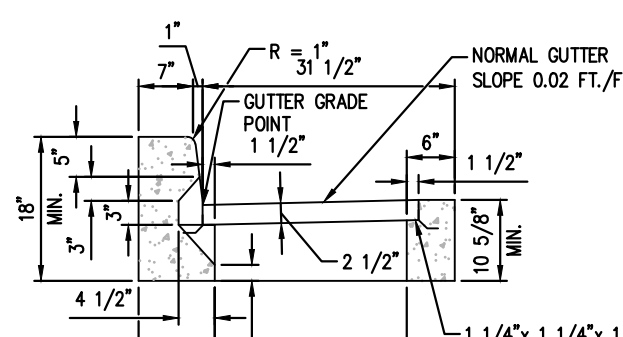
SECTION A - A



SIDE VIEW

FRONT VIEW

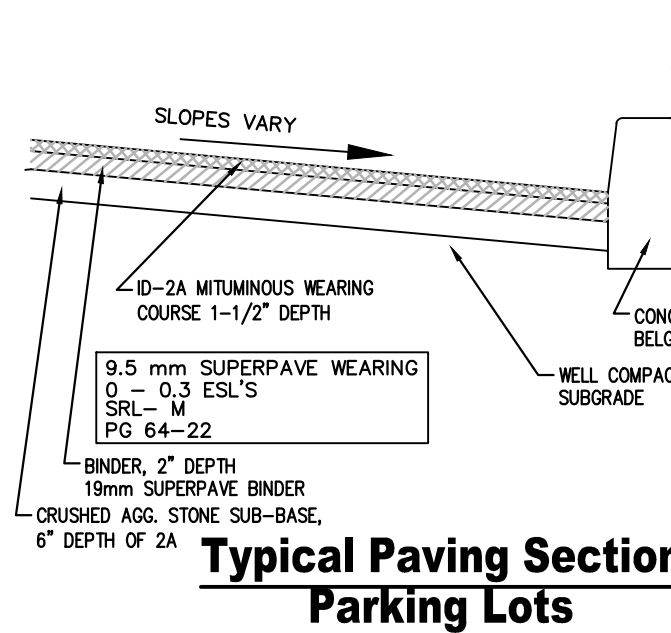
DOWEL HOLE LOCATIONS



SECTION B - B

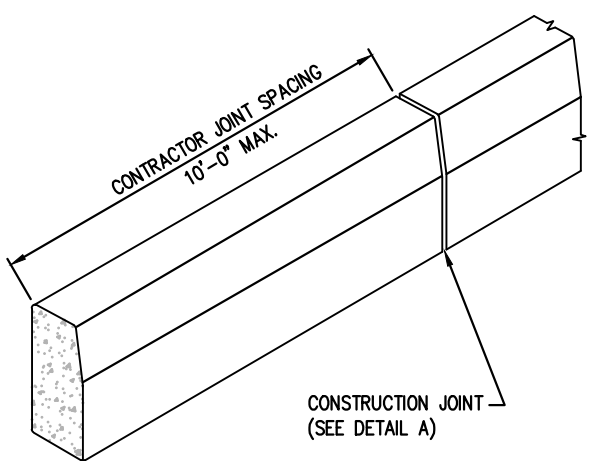
TYPE C INLET CONCRETE TOP UNITS

NOT TO SCALE



Typical Paving Section Parking Lots

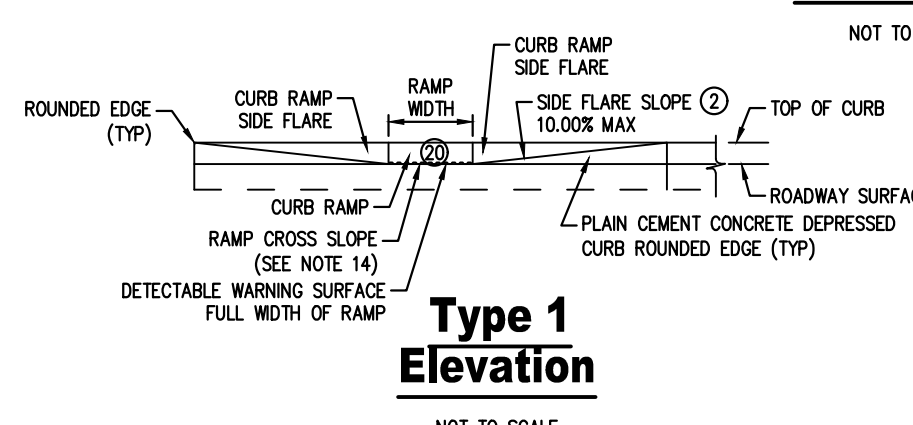
(WITH CURB)
NOT TO SCALE



Concrete Curb

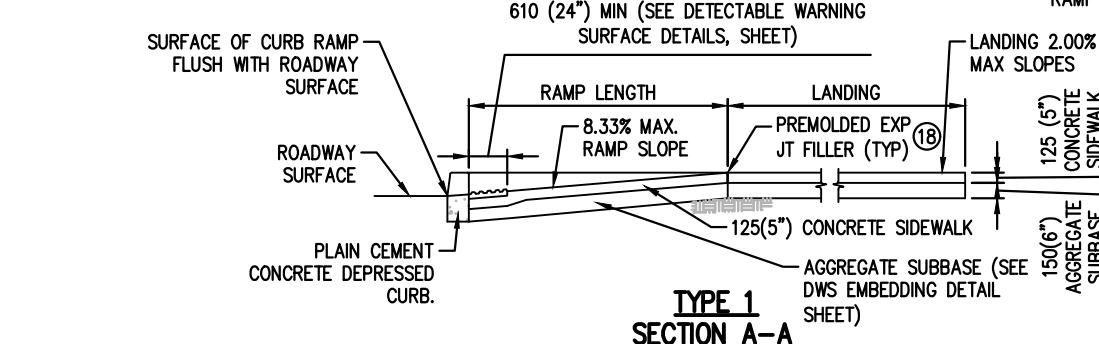
NOT TO SCALE

1. 1/2" PREMOLDED EXPANSION JOINTS SHALL BE PLACED AT CONTACTS WITH EXISTING CURB, ANY INLET STRUCTURE AND AT 30 FT. MAXIMUM INTERVALS.
2. CONTRACTION JOINTS ARE TO BE SPACED AT EQUAL INTERVALS, NOT EXCEEDING 10 FT. BETWEEN EXPANSION JOINTS.



Type 1 Elevation

NOT TO SCALE



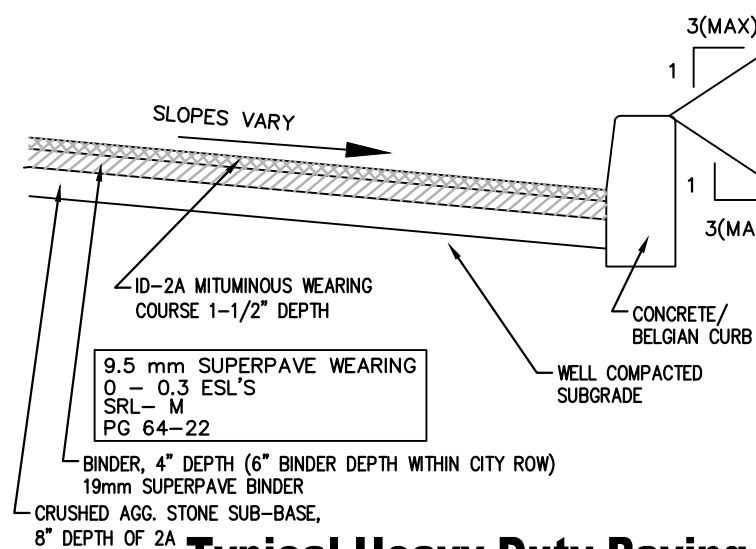
TYPE 1 SECTION A-A

Note:

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

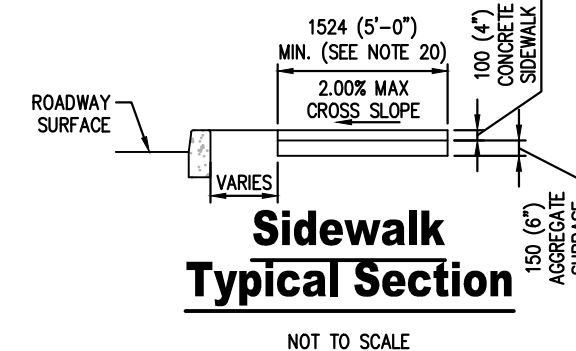
Notes:

1. PROVIDE MATERIALS AND CONSTRUCTION MEETING THE REQUIREMENTS OF PUBLICATION 408, SECTIONS 350, 409, 630, 676 AND 684.
2. PROVIDE EXPANSION JOINT MATERIAL 15 (1/2") THICK WHERE CURB RAMP ADJACENT ANY ROAD PAVEMENT, SIDEWALK OR STRUCTURE WITH THE TOP OF JOINT FILLER FLUSH WITH ADJACENT CONCRETE SURFACE.
3. CONSTRUCT CURB RAMPS WITH A MINIMUM 1220 X 1220 (4'-0" X 4'-0") CLEAR SPACE BEYOND THE CURB FACE, WITHIN THE WIDTH OF THE CROSSWALK AND WHOLLY OUTSIDE THE PARALLEL VEHICLE TRAVEL LANE. SEE SHEET 7 FOR CROSSWALK DETAILS.
4. SEAL JOINTS WITH AN APPROVED SEALING MATERIAL.
5. PROVIDE SLIP RESISTANT TEXTURE ON CURB RAMP BY COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP. EXTEND TEXTURE THE FULL WIDTH AND LENGTH OF THE CURB RAMP INCLUDING FLARED SIDE RAMPS.
6. MOODY CONSTRUCTION DETAILS TO ADAPT DIMENSIONS TO EXISTING CURB HEIGHTS WHERE THE CURB IS LESS THAN THE STANDARD 205 (8") HEIGHT.
7. CURB RAMP AND SIDE FLARE LENGTHS ARE VARIABLE AND BASED ON CURB HEIGHT AND THE SIDEWALK SLOPE.
8. TO AVOID CHASING GRADE INDEFINITELY WHEN TRAVELING THE HEIGHT OF CURB, RAMP LENGTH NOT TO EXCEED 4500 (15'-0"). ADJUST RAMP SLOPE AS NEEDED TO PROVIDE ACCESS TO THE MAXIMUM EXTENT FEASIBLE.
9. NON-WALK AREA IS AN OBSTRUCTED OR GRASS/NON-PAVED AREA ADJACENT TO THE PEDESTRIAN ACCESS ROUTE THAT IS NOT USED BY THE PEDESTRIAN FOR ACCESS.
10. THE DETAILS DEPICT PEDESTRIAN PUSHBUTTON POLES TO ILLUSTRATE THE RECOMMENDED PLACEMENT OF PEDESTRIAN PUSHBUTTONS, FOR ALTERATION PURPOSES. PROVIDE ACCESS TO EXISTING PEDESTRIAN PUSHBUTTONS TO THE MAXIMUM EXTENT FEASIBLE. INSTALL PEDESTRIAN PUSHBUTTON STUB POLES, WHERE APPLICABLE, SO AS NOT TO CREATE PEDESTRIAN OBSTRUCTIONS.
11. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. US CUSTOMARY NOTES US PARENTHETICS.
12. ALSO DETECTABLE WARNING SURFACE TRUNCATED DOMES ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF THE RAMP AND PERPENDICULAR TO CURB.
13. PROVIDE DETECTABLE WARNING SURFACES (DWS) 610 (24") MINIMUM (IN THE DIRECTION OF PEDESTRIAN TRAVEL) ACROSS FULL WIDTH OF RAMP AT THE GRADE BREAK NEAR STREET EDGE. PROVIDE DWS THAT CONTRAST VISUALLY WITH ADJACENT WALKWAY SURFACES, EITHER LIGHT-OR-DARK OR DARK-ON-LIGHT FOR THE FULL WIDTH OF RAMP.
14. FOR NEW CONSTRUCTION, DO NOT EXCEED 2.00% CROSS SLOPE ON THE CURB RAMP OR PEDESTRIAN ACCESSIBLE ROUTE.
15. FOR NEW CONSTRUCTION AND ALTERATIONS, CONSTRUCT CURB RAMP AND FLARE SLOPES WITH THE FLATTEST SLOPE POSSIBLE. THE SLOPES INDICATED IN THE DETAILS SHOW THE MAX SLOPE ALLOWABLE. SLOPES THAT EXCEED THOSE INDICATED IN THE DETAILS, OR CONTRACT DOCUMENTS AS APPLICABLE, WILL NOT BE ACCEPTED AND WILL BE DECONSTRUCTED.
16. CONSTRUCT SIDEWALKS AT A LONGITUDINAL SLOPE NOT TO EXCEED 5.00% FOR ROADWAY PROFILE SLOPES THAT EXCEED 5.00%. CONSTRUCT PARALLEL SIDEWALKS ADJACENT TO ROADWAY AT A LONGITUDINAL SLOPE NOT TO EXCEED ROADWAY PROFILE SLOPE.
17. THE CHANGE IN GRADE AT THE BOTTOM OF THE CURB RAMP AND ADJOINING ROAD SURFACE IS NOT TO EXCEED AN ALGEBRAIC DIFFERENCE OF 11.00%. THE COUNTER SLOPE OF THE GUTTER OR ROAD AT THE FOOT OF A CURB RAMP, LANDING OR BLENDED TRANSITION IS NOT TO EXCEED 5.00%. SEE SHEET 8 FOR DETAILS.
18. THE CONSTRUCTION STANDARDS DEPICTED ARE MOST APPROPRIATE FOR NEW CONSTRUCTION. ALL CONSTRUCTION MUST MEET THE STANDARDS CONTAINED HEREIN UNLESS OTHERWISE NOTED OR DIRECTED.
19. ALL SLOPES ARE MEASURED WITH RESPECT TO A LEVEL PLANE. THEREFORE, THE LENGTH OF RAMP IS NOT SOLELY DEPENDANT ON THE HEIGHT OF CURB. (FOR EXAMPLE, A 150 (6") CURB DOES NOT NECESSARILY MEAN A RAMP LENGTH OF 1850 (6'-0") FOR A 1:21 (1:12) SLOPE.
20. SIDEWALK WIDTH MAY BE REDUCED TO 1220 (4'-0"), WHEN PASSING AREAS 1525 X 1525 (5'-0" X 5'-0") ARE PROVIDED EVERY 61 METERS (200').
21. THE TRAVEL LANE IS DEFINED BY THE OUTSIDE EDGE OF THE WHITE PAVEMENT MARKING LINE. IF A WHITE PAVEMENT MARKING LINE DOES NOT EXIST, THE TRAVEL LANE IS DEFINED BY THE CONTRACT DOCUMENTS.
22. CONSTRUCT DERESSED CURB FOR CURB RAMPS FLUSH TO ADJACENT ROADWAY. GRADE EDGE OF ROAD ELEVATIONS AT THE FLOW LINE TO ENSURE POSITIVE DRAINAGE AND PREVENT POINING. FOR LEVEL LANDINGS BEHIND DERESSED CURB, ADJUST SLOPES TO PROVIDE POSITIVE DRAINAGE.
23. CHECK WALLS ARE PERMITTED WHEN ADJACENT TO NON-WALK AREAS OR ELEVATION DIFFERENCES CANNOT BE ACCOMMODATED BY FLARES OR GRADING. GRADE GRASS AREAS OR OTHER NON-WALK AREAS AT 3:1 (1:3) MAXIMUM. DO NOT INSTALL CHECK WALLS THAT INTERSECT THE PEDESTRIAN ACCESS ROUTE.
24. CONSTRUCT TOP OF PLAIN CEMENT CONCRETE DERESSED CURB TO BE FLUSH WITH ADJACENT SURFACES (RAMPS, SIDEWALKS, FLARES).
25. FOR CURB RAMPS THAT LEAD TO A SINGLE CROSSWALK, THE RAMP (EXCLUDING FLARES) TO BE FULLY INSIDE OF MARKED CROSSWALK LINES. SEE SHEET 7 FOR DETAILS.
26. A 1220 (4'-0") MAXIMUM DIGITAL DISPLAY LEVEL WILL BE USED TO VERIFY THE SLOPES OF CURB RAMPS AND SIDEWALKS.



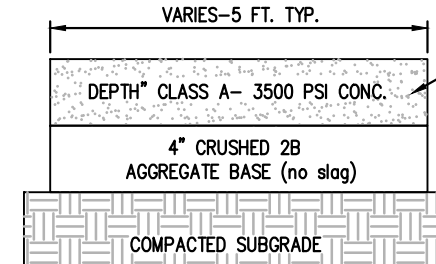
Typical Heavy Duty Paving Section Parking Lots

(WITH CURB)
NOT TO SCALE



Sidewalk Typical Section

NOT TO SCALE

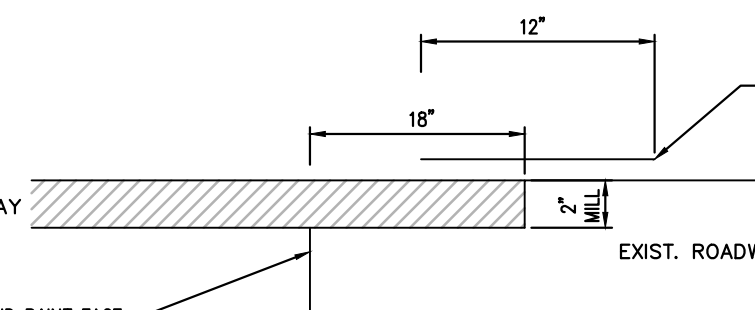


Concrete Sidewalk Detail

NOT TO SCALE

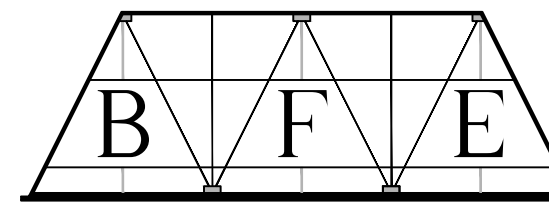
Note:

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



Paving Joint Detail

(TIE INTO EXISTING PAVEMENT)
NOT TO SCALE



BLACK FOREST ENGINEERING, LLC
2455 BLACK FOREST DRIVE
COPLAY, PA 18037

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SEAL:

Equivalent Slopes

Percent Slope	Equivalent Slope
10.00%	10:1 (1:10)
8.33%	12:1 (1:12)
7.14%	14:1 (1:14)
5.00%	20:1 (1:20)
2.00%	50:1 (1:50)
1.00%	100:1 (1:100)

JOSEPH E. RENTKO, P.E. #PE085609
2455 BLACK FOREST DRIVE
COPLAY, PA 18037
970-239-4469

REV.	DESCRIPTION:	BY	DATE

PROJECT TITLE:

1411 GREENVIEW DRIVE

PROJECT OWNER:

1015 PARTNERS LLC
555 ASHWOOD ROAD
NAZARETH, PA 18064

PROJECT LOCATION:

CITY OF BETHLEHEM
WARD 13; BLOCK 113
LEHIGH COUNTY
PENNSYLVANIA

PLAN TITLE:

CONSTRUCTION DETAILS

SCALE:	DATE:	DRAWN:	CHECKED:
AS NOTED	9/5/23	JER	JER
PROJECT NO.	DRAWING NO.	REVISION:	
2209	7 OF 9	00	

