GENERAL NOTES

REQUIREMENTS SHALL PREVAIL.

GEOTECHNICAL ENGINEER.

CONSTRUCTION.

TEMPORARY SEEDING TYPES

PREVENT EROSION AND SEDIMENTATION.

WAS TAKEN.

D. ALL DAMAGE TO ANY EXISTING UTILITY.

GRADING & EROSION CONTROL NOTES

ACCORDANCE WITH ODOT STANDARD DRAWING MT-95.61.

11. ANY FIELD TILE CUT MUST BE TIED INTO THE STORM DRAINAGE SYSTEM.

1. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FOR CONSTRUCTION ACTIVITIES IN ACCORDANCE WITH LOCAL, STATE, & FEDERAL REGULATIONS.

4. ITEM NUMBERS REFER TO THE OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS, AND ALL NEW CONSTRUCTION WORK SHALL BE DONE ACCORDING

5. PROTECTION OF EXISTING TREES AND VEGETATION: PROTECT EXISTING TREES AND OTHER VEGETATION AGAINST UNNECESSARY CUTTING, BREAKING OR SKINNING OF ROOTS, SKINNING OR BRUISING OF BARK, SMOTHERING OF TREES BY STOCKPILING CONSTRUCTION MATERIALS OR EXCAVATED MATERIALS WITHIN DRIP LINE, EXCESS FOOT OR VEHICULAR TRAFFIC, OR

6. SUBGRADE EXCAVATION AND CONSTRUCTION TO BE PER GEOTECHNICAL ENGINEER'S RECOMMENDATIONS. SUBGRADE PREPARATION SHALL BEGIN BY CLEARING & STRIPPING UNSUITABLE MATERIAL FROM SITE. THEN PLACE & COMPACT BACKFILL MATERIAL AT GEOTECHNICAL ENGINEER'S RECOMMENDATIONS. ALL BACKFILL MATERIAL MUST BE ACCEPTABLE TO THE

7. COMPACTED FILLS ARE TO BE MADE TO A MINIMUM OF THREE FEET ABOVE THE CROWN OF ANY PROPOSED SEWER PRIOR TO CUTTING OF TRENCHES FOR PLACEMENT OF SAID SEWERS. ALL FILLS SHALL BE CONTROLLED, COMPACTED, AND INSPECTED BY AN APPROVED TESTING LABORATORY OR AN INSPECTOR FROM THE APPROPRIATE GOVERNMENTAL AGENCY.

10. ALL GROUND SURFACE AREAS THAT HAVE BEEN EXPOSED OR LEFT BARE AS A RESULT OF CONSTRUCTION AND ARE TO FINAL GRADE AND ARE TO REMAIN SO, SHALL BE SEEDED AS SOON

14. FORTY-EIGHT HOURS BEFORE DIGGING IS TO COMMENCE, THE CONTRACTOR SHALL NOTIFY THE OHIO UTILITIES PROTECTION SERVICE, AND ALL OTHER AGENCIES WHICH MAY HAVE

15. EXISTING UNDERGROUND UTILITIES AND SERVICES ARE SHOWN IN THEIR APPROXIMATE LOCATIONS ACCORDING TO THE BEST INFORMATION AVAILABLE. THE LOCATIONS SHOWN ARE

1. THE NPDES PERMIT REQUIRES THAT ALL AREAS WHICH ARE AT OR NEAR FINAL GRADE, OR WHICH REMAIN DORMANT FOR MORE THAN 21 DAYS OR LONGER BE STABILIZED WITHIN 7 DAYS OF LAST ACTIVITY. VELOCITY DISSIPATION DEVICES SHOULD BE PLACED AT THE OUTFALL OF ALL DETENTION OR RETENTION STRUCTURES AND ALONG THE LENGTH OF ANY

2. THE NPDES PERMIT REQUIRES THAT SEDIMENT AND EROSION CONTROLS BE INSPECTED ONCE EVERY 7 DAYS AND WITHIN 24 HOURS OF 0.5" OR GREATER RAINFALL. A WRITTEN LOG SHOULD INDICATE THE DATE OF INSPECTION NAME OF INSPECTOR, WEATHER CONDITIONS, OBSERVATIONS, ACTIONS TAKEN TO CORRECT ANY PROBLEMS AND THE DATE ACTION

A. TALL FESCUE--SEED AT A RATE OF 50 lbs./ACRE (1 lb./100 SQ. FT.) AND MULCH WITH STRAW AT A RATE OF 2 TONS PER ACRE (90 lbs./1000 SQ. FT.). ESTABLISH BETWEEN MARCH 15 AND SEPTEMBER 30. COVER THE SEED 1/4-1/2 INCH BY RAKE OR SIMILAR TOOL. THIS IS THE MOST WIDELY USED AND BEST ADAPTED GRASS FOR STREAMBANK SEEDINGS. ITS HAS

B. REED CANARYGRASS (PHALARIS ARUNDINACAE) PLUS TALL FESCUE--SEED THE REED CANARYGRASS AT A RATE OF 15lbs./ACRE (1/3 lb./1000 SQ. FT.), PLUS 10 lbs./ACRE (1/4lb./1000

SQ. FT.) OF TALL FESCUE. MULCH WITH STRAW AT A RATE OF 2 TONS/ACRE (90 lbs./1000 SQ. FT.). THIS MIXTURE SHOULD ONLY BE SEEDED FROM MARCH 1 TO MAY 15, OR AUGUST

1 TO SEPTEMBER 30. COVER THE SEED 1/4-1/2 INCH BY RAKING OR SIMILAR TOOL. THIS MIXTURE IS ADAPTABLE TO SOILS THAT ARE VERY WET AS WELL AS WELL DRAINED SOIL CONDITIONS. REED CANARYGRASS CAN WITHSTAND EXTENDED PERIODS OF FLOODING. IT IS EXCELLENT FOR EROSION CONTROL. REED CANARYGRASS CAN ALSO BE

ESTABLISHED BY SOD STRIPS, USING RHIZIMES, OR FRESHLY CUT CULMS. THE LOCAL CONSERVATION SERVICE OFFICE CAN PROVIDE THE SPECIFIC DETAILS REQUIRED TO USE

5. FINAL SITE STABILIZATION IS CONSIDERED ACHIEVED ONCE ALL TEMPORARY EROSION AND SEDIMENT CONTROL PRACTICES ARE REMOVED AND DISPOSED OF AND ALL TRAPPED

6. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES WILL BE DISPOSED OF AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY MEASURES ARE NO

7. ALL TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL MEASURES WILL BE MAINTAINED AND REPAIRED AS NEEDED TO ASSURE CONTINUED PERFORMANCE OF THEIR

LONGER NEEDED. TRAPPED SEDIMENT AND OTHER DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES WILL BE PERMANENTLY STABILIZED TO

TO SAID SPECIFICATIONS AND IN ACCORDANCE WITH APPLICABLE STANDARDS OUTLINED IN THE "BUTLER COUNTY SUBDIVISION REGULATIONS." WHEN IN CONFLICT, THE BUTLER COUNTY

OWNERS REPRESENTATIVE WITH WRITTEN REPORTS. OWNER WILL OBTAIN PERMITS.

8. ADJUST ALL EXISTING CASTINGS AND CLEANOUTS WITHIN PROJECT AREA TO GRADE AS REQUIRED.

PARKING OF VEHICLES WITHIN DRIP LINE. PROVIDE TEMPORARY GUARDS TO PROTECT TREES AND VEGETATION TO BE LEFT STANDING.

9. CONTRACTOR SHALL IMPLEMENT ALL SOIL AND EROSION CONTROL, PRACTICES REQUIRED BY BUTLER COUNTY AND THE OHIO EPA.

13. ALL DIMENSIONS ARE TO THE OUTSIDE FACE OF BUILDING AND/OR EDGE OF PAVEMENT, UNLESS OTHERWISE NOTED.

B. SOLICITING THEIR AID IN LOCATING AND PROTECTING ANY UTILITY WHICH MAY INTERFERE WITH

C. EXCAVATING AND VERIFYING THE HORIZONTAL AND VERTICAL LOCATION OF EACH UTILITY.

UNDERGROUND UTILITIES INVOLVING THIS PROJECT AND ARE NON-MEMBERS OF THE OHIO UTILITIES PROTECTION SERVICE.

INTENDED ONLY AS A GUIDE AND CANNOT BE GUARANTEED ACCURATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR:

GOOD TOLERANCE TO WET SOILS AND FLOODING. IT IS ALSO WELL ADAPTED TO WELL DRAINED SOILS.

AS PRACTICAL IN ACCORDANCE WITH SPECIFICATIONS. IF NO SPECIFICATIONS ARE SUPPLIED USE STATE OF OHIO SPECIFICATIONS ITEM 659.

A. CONTACTING THE INDIVIDUAL UTILITY OWNERS TEN DAYS PRIOR TO CONSTRUCTION AND ADVISING THEM OF THE WORK TO TAKE PLACE.

OUTFALL CHANNEL AS NECESSARY TO PROVIDE A NON-EROSIVE FLOW VELOCITY FROM THE STRUCTURE TO THE WATER COURSE.

3. SOLID, SANITARY AND TOXIC WASTE MUST BE DISPOSED OF IN A PROPER MANNER IN ACCORDANCE WITH STATE, LOCAL AND FEDERAL REGULATIONS.

12. THE CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO THE BEGINNING OF CONSTRUCTION OR EARTH MOVING OPERATIONS.

- 3. MAINTENANCE OF TRAFFIC WHEN CONSTRUCTION ACTIVITIES ALONG ADJACENT ROADWAYS REQUIRE TEMPORARY MAINTENANCE OF TRAFFIC, TEMPORARY TRAFFIC CONTROL SHALL BE IN

- 2. THE CONTRACTOR IS TO PERFORM ALL INSPECTIONS AS REQUIRED BY THE OHIO EPA FOR THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT AND FURNISH

8. DANDY BAGS TO BE USED AT ALL STORM INLETS FOR EROSION CONTROL 9. TEMPORARILY GRADE LOW AREA TO DRAIN UNTIL FUTURE STORM IS CONSTRUCTED.

SEDIMENT HAS BEEN PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION.

UTILITY NOTES

INTENDED FUNCTION.

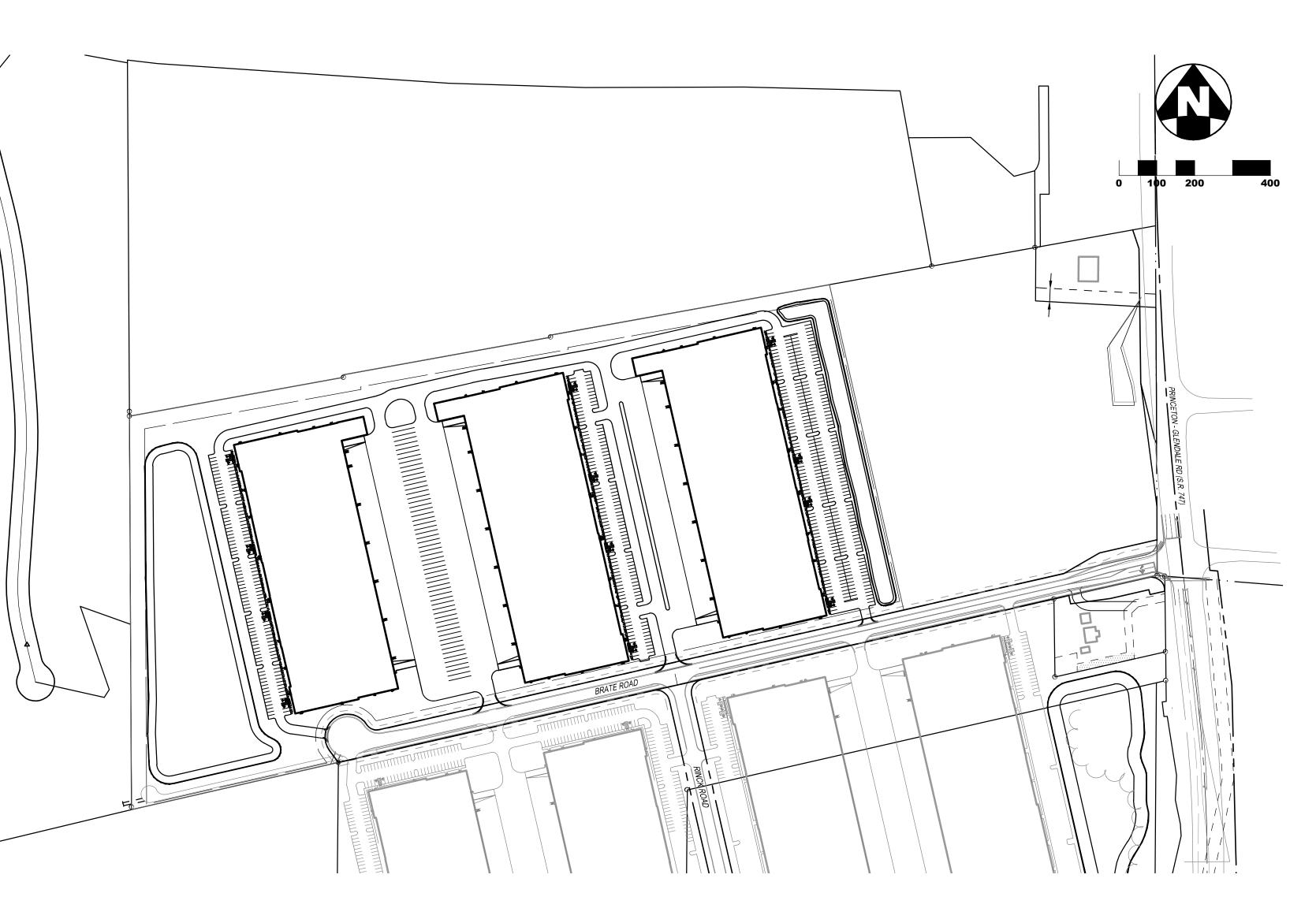
- 1. ROOF DRAINS, FOUNDATION DRAINS AND ALL OTHER CLEAR WATER CONNECTIONS TO THE SANITARY SEWER SYSTEM ARE PROHIBITED.
- 2. THE CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL UTILITIES PRIOR TO THE BEGINNING OF CONSTRUCTION OR EARTH MOVING OPERATIONS.

ONE OF THE ALTERNATIVE ESTABLISHMENT METHODS.

- 3. ALL STORM STRUCTURES ARE ODOT TYPES UNLESS OTHERWISE INDICATED.
- 4. STORM SEWER PIPE LABELED "STM" SHALL BE ONE OF THE FOLLOWING: PVC SDR-35, PVC PROFILE PIPE PER ODOT ITEM 707.33, OR HIGH DENSITY POLYETHYLENE PER ODOT ITEM
- 707.33, STORM SEWER PIPE LABELED "RCP" SHALL BE REINFORCED CONCRETE PIPE, ODOT ITEM 706.02 CLASS IV. ALL STORM IS TO BE INSTALLED PER ODOT ITEM 603, TYPE A.
- 5. STEPS SHALL BE PROVIDED IN ALL CATCH BASINS AND MANHOLES OVER 4' DEEP.
- 6. CONTRACTOR SHALL SECURE ALL PERMITS AND FURNISH ALL DRAWINGS REQUIRED FOR UTILITY TAPS PRIOR TO STARTING CONSTRUCTION. 7. PROVIDE MANUFACTURERS RECOMMENDATION COVER OVER TOP OF STORM PIPE DURING CONSTRUCTION, UNTIL PAVING OPERATIONS BEGIN.
- 8. ITEM NUMBERS REFER TO THE OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS, AND ALL NEW CONSTRUCTION WORK SHALL BE DONE ACCORDING TO SAID SPECIFICATIONS AND IN ACCORDANCE WITH APPLICABLE STANDARDS OUTLINED IN THE "BUTLER COUNTY SUBDIVISION REGULATIONS." WHEN IN CONFLICT, THE BUTLER COUNTY REQUIREMENTS SHALL PREVAIL.
- 9. SITE UTILITY CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING REQUIRED VERTICAL SEPARATION BETWEEN UTILITIES BY VARYING DEPTH OF UNDERGROUND ELECTRIC,
- TELEPHONE, WATER AND GAS. 10. PRIVATE WATERLINE FROM PUBLIC MAIN TO METER PIT TO BE CLASS 55 D.I. PIPE WITH PE WRAP. ALL OTHER PRIVATE WATERLINE (AFTER METER PIT) TO BE AS NOTED ON THE UTILITY PLAN.
- 11. WATERLINE SHALL HAVE A MINIMUM OF 4.0' OF COVER.
- 12. A MINIMUM OF 1.5' OF VERTICAL CLEARANCE SHALL BE MAINTAINED BETWEEN UTILITIES AT ALL TIMES.
- 13. STORM PIPE TO HAVE AN "N" VALUE OF 0.013 OR LESS.
- 14. FIRE HYDRANT ASSEMBLY INCLUDES FIRE HYDRANT AND 6" WATER VALVE.
- 15. PROVIDE UNDERGROUND FLUSH CERTIFICATES PER NFPA.
- 16. SANITARY SEWER SHALL BE 8" PVC-SDR 35 OR APPROVED EQUAL INSTALLED AT A MINIMUM GRADE OF 0.50% UNLESS OTHERWISE NOTED. SANITARY SEWER SHALL BE INSTALLED AT A MINIMUM DEPTH OF FOUR FEET (4') UNLESS OTHERWISE NOTED. A MINIMUM OF 18" CLEARANCE SHALL BE MAINTAINED AT ALL WATERLINE CROSSINGS. SANITARY SEWER JOINTS SHALL CONFORM TO ASTM D-321.
- 17. SANITARY LATERALS SHALL BE 8" PVC-SDR 21 OR APPROVED EQUAL INSTALLED AT A MINIMUM SLOPE OF 1/8" PER FOOT (1.04%) UNLESS OTHERWISE NOTED. A MINIMUM OF 18" CLEARANCE SHALL BE MAINTAINED AT ALL WATERLINE CROSSINGS. SANITARY SEWER JOINTS SHALL CONFORM TO ASTM D-321.

BRATE INDUSTIAL PARK **CONSTRUCTION DRAWINGS PLAN SET**

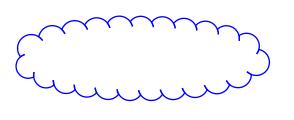
SECTION 11, TOWN 2, RANGE 2 WEST CHESTER TOWNSHIP, BUTLER COUNTY, OHIO



	Sheet Index
Sheet Number	Sheet Title
C000	COVER SHEET
C001	GENERAL DETAILS
C002	UTILITY DETAILS
C100	EXISTING AND DEMOLITION PLAN
C200	OVERALL LOCATION PLAN
C201	ENLARGED LOCATION PLAN
C202	ENLARGED LOCATION PLAN
C300	OVERALL UTILITY PLAN
C301	ENLARGED UTILITY PLAN
C302	ENLARGED UTILITY PLAN
C350	UTILITY PROFILES
C351	UTILITY PROFILES
C400	GRADING AND EROSION CONTROL PLAN
C401	ENLARGED GRANDING PLAN
C402	ENLARGED GRANDING PLAN
C410	HANDICAP RAMP GRADING DETAILS
C450	EROSION CONTROL NOTES
C451	EROSION CONTROL DETAILS
L100	LANDSCAPE PLAN
L101	LANDSCAPE PLAN ENLARGEMENT
L102	LANDSCAPE PLAN ENLARGEMENT
L103	LANDSCAPE PLAN ENLARGEMENT
L104	PLANT SCHEDULE & DETAILS
L200	IRRIGATION ZONE PLAN
L300	SPECIFICATIONS
L301	SPECIFICATIONS
L302	SPECIFICATIONS



NTS



SITE DATA:

OWNER OF RECORD: DEVELOPER: ENGINEER/SURVEYOR:

ARTHUR M. & HELEN A. BRATES, ET. AL., TRUSTEES

NORTHPOINT DEVELOPMENT COMPANY, LLC THE KLEINGERS GROUP 6219 CENTRE PARK DRIVE WEST CHESTER, OH 45069

SITE INFORMATION

BOUNDARY:	BASED ON AERIAL AND FIELD WORK BY THE KLEINGERS GROUP
TOPOGRAPHY:	BASED ON AERIAL AND FIELD WORK BY THE KLEINGERS GROUP
SITE AREA:	EXISTING GROSS AREA: 60.81 ACRES PROPOSED GROSS AREA: 45.826 ACRES
PROJECT DESCRIPTION:	DEVELOP THREE INDUSTRIAL BUILDINGS WITH PUBLIC ROAD ACCESS

PROJECT SCHEDULE: FALL 2019 - SPRING 2022

UTILITY CONTACTS:

TELECOM CINCINNATI BELL 221 E. 4TH ST., BLDG. 43 CINCINNATI, OH 45201 (513) 565-7043 CONTACT; MARK CONNER TIME WARNER CABLE 11252 CORNELL PARK DR. CINCINNATI, OH 45242 (513) 386-5483 CONTACT: JIM O'REILLY

WATER AND SEWER BUTLER COUNT WATER AND SEWER 130 HIGH STREET HAMILTON, OH 45011 (513) 887-3066 CONTACT: CONSTANCE KEPNER

GAS DUKE ENERGY 139 E. FOURTH ST. ROOM 460A CINCINNATI, OH 45202 (513) 287-1593 CONTACT: CHRIS COLYER

ELECTRIC DUKE ENERGY 139 E. FOURTH ST. ROOM 460A CINCINNATI, OH 45202 (513) 287-3852 CONTACT: CRAIG HUTCHISON

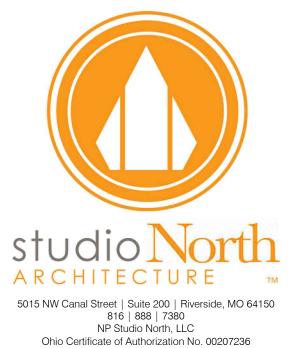
STORM BUTLER COUNTY ENGINEER'S OFFICE 1921 FAIRGROVE AVENUE (513) 785-4142 CONTACT: TERESA BARNES, PE, CPESC

TRAFFIC BUTLER COUNTY ENGINEER'S OFFICE 1921 FAIRGROVE AVENUE (513) 785-4109 CONTACT: MATT LOEFFLER, PE



UNDERGROUND UTILITIES ARE PLOTTED FROM A COMPILATION OF AVAILABLE RECORD INFORMATION AND SURFACE INDICATIONS OF UNDERGROUND STRUCTURES AND MAY NOT BE INCLUSIVE. PRECISE LOCATIONS AND THE EXISTENCE OR NON EXISTENCE OF UNDERGROUND UTILITIES CANNOT BE VERIFIED. PLEASE NOTIFY THE OHIO UTILITY PROTECTION SERVICE AT 1-800-362-2764 BEFORE ANY PERIOD OF EXCAVATION OR CONSTRUCTION ACTIVITY.











Brate Road West Chester, OH 45069

> Project No. 160651.004 Date: Revisions: No. Date Description

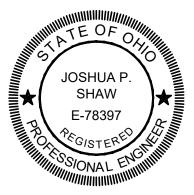
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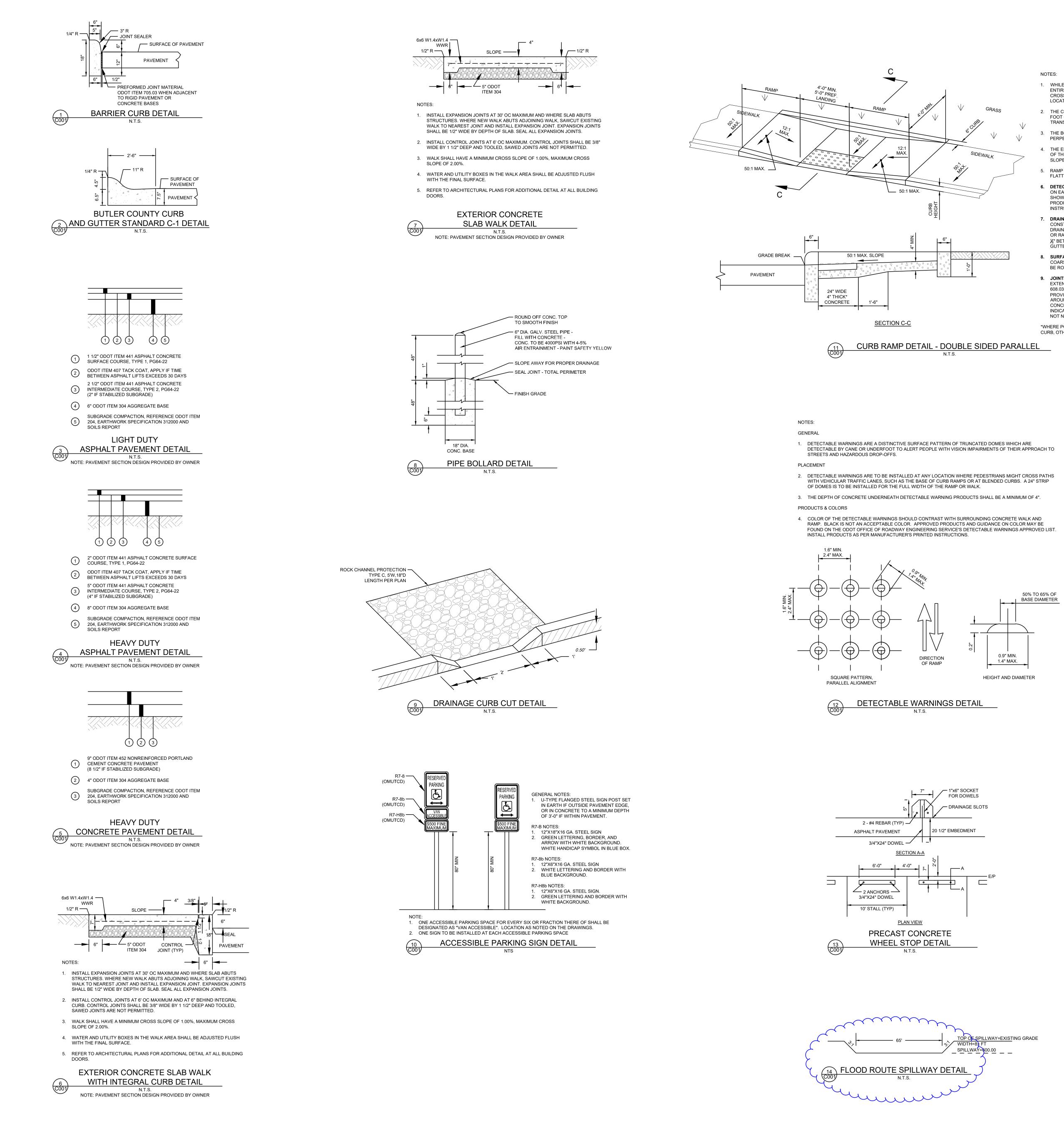
West Chester, OH 45069

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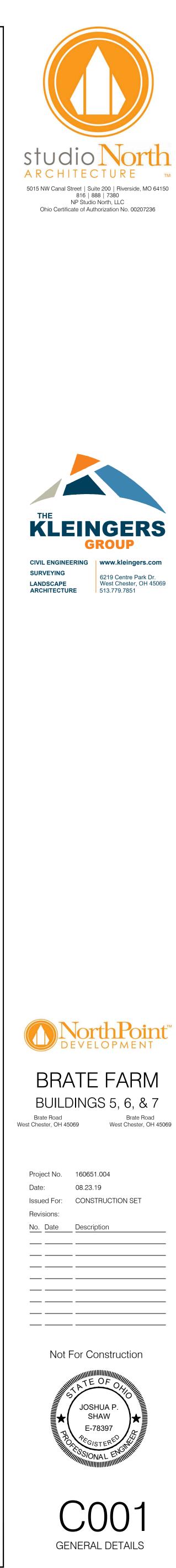


- 1. WHILE RAMPS MAY BE SKEWED TO THE CROSSWALK, THE ENTIRE LOWER LANDING AREA MUST FALL WITHIN THE CROSS WALK THAT THE RAMP SERVES AND CANNOT BE LOCATED IN THE TRAVELED LANE OF OPPOSING TRAFFIC.
- THE COUNTER SLOPE OF THE GUTTER OR STREET AT THE FOOT OF A CURB RAMP, LANDING, OR BLENDED TRANSITIONS SHALL BE 20:1 OR FLATTER. THE BOTTOM EDGE OF THE RAMP SHALL CHANGE PLANES
- PERPENDICULAR TO THE LANDING. 4. THE EDGE OF THE CURB SHALL BE FLUSH WITH THE EDGE
- OF THE ADJACENT PAVEMENT AND GUTTER AND SURFACE SLOPES THAT MEET GRADE BREAKS SHALL ALSO BE FLUSH. 5. RAMP LANDINGS SHALL BE 4' MIN. X 4' MIN. WITH A 50:1 OR
- FLATTER CROSS SLOPE AND RUNNING SLOPE. 6. DETECTABLE WARNINGS: INSTALL DETECTABLE WARNINGS ON EACH CURB RAMP WITH APPROVED MATERIALS, AS SHOWN IN SEPARATE DETAIL. INSTALL THESE PROPRIETY PRODUCTS AS PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
- 7. DRAINAGE: CONTRACTOR IS TO ENSURE THE BASE OF EACH CONSTRUCTED CURB RAMP ALLOWS FOR PROPER DRAINAGE, WITHOUT EXCEEDING ALLOWABLE CROSS SLOPE OR RAMP SLOPES. VERTICAL CHANGE IN LEVEL EXCEEDING ∕[™] BETWEEN THE 1) PAVEMENT AND GUTTER, AND 2) GUTTER AND RAMP, ARE NOT ALLOWED.
- SURFACE TEXTURE: TEXTURE CONCRETE SURFACES BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES TO BE ROUGHER THAN THE ADJACENT WALK.
- 9. JOINTS: PROVIDE EXPANSION JOINTS IN THE CURB RAMP AS EXTENSIONS OF WALK JOINTS AND CONSISTENT WITH ITEM 608.03 REQUIREMENTS FOR A NEW CONCRETE WALK. PROVIDE A 1/2" ITEM 705.03 EXPANSION JOINT FILLER AROUND THE EDGE OF RAMPS BUILT IN EXISTING CONCRETE WALKS. LINES SHOWN ON THIS DRAWING INDICATE THE RAMP EDGES AND SLOPE CHANGES, AND DO NOT NECESSARILY INDICATE JOINT LINES.

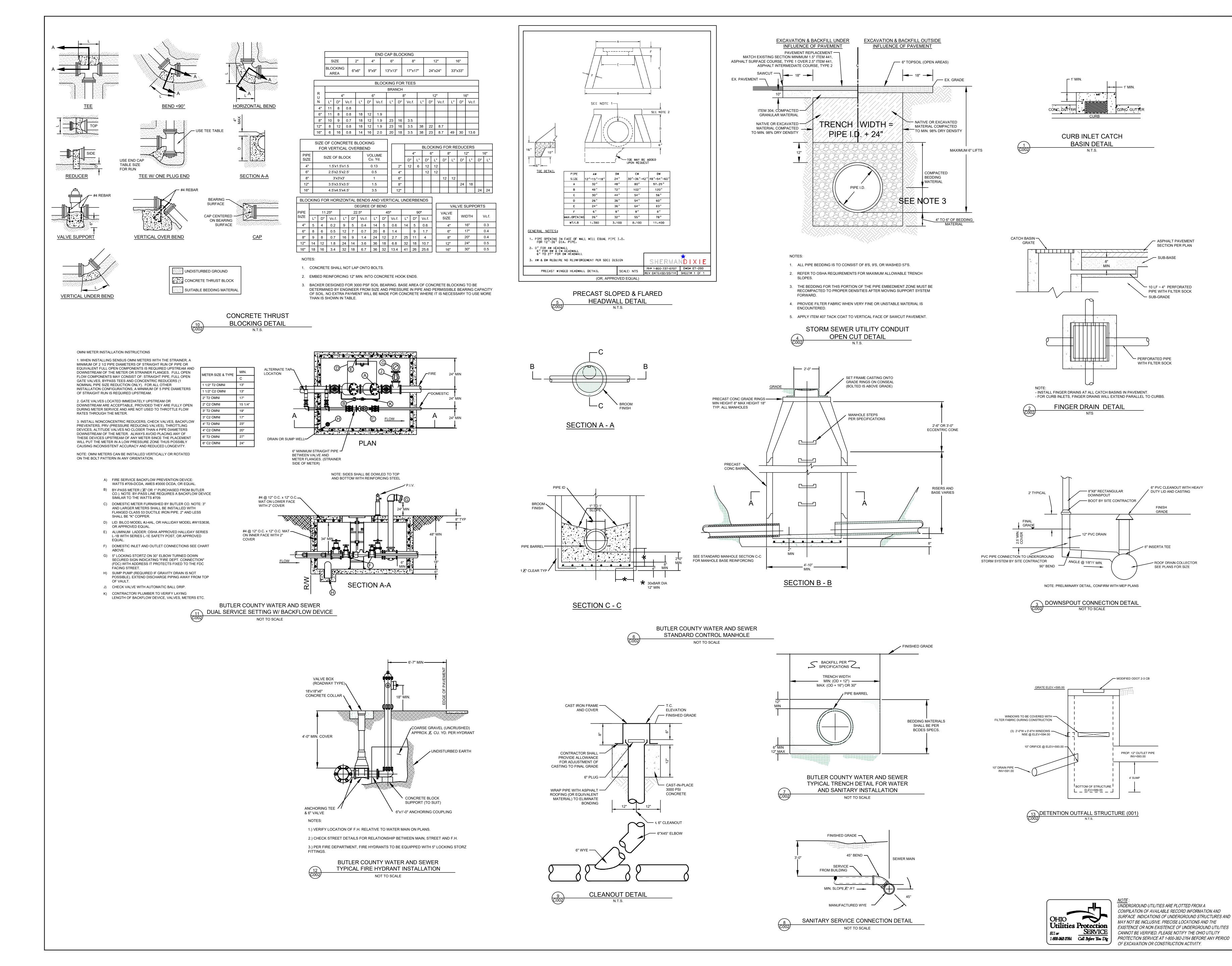
*WHERE POSSIBLE, POUR RAMP AREA INTEGRAL WITH THE CURB, OTHERWISE USE 6" THICK WALK.

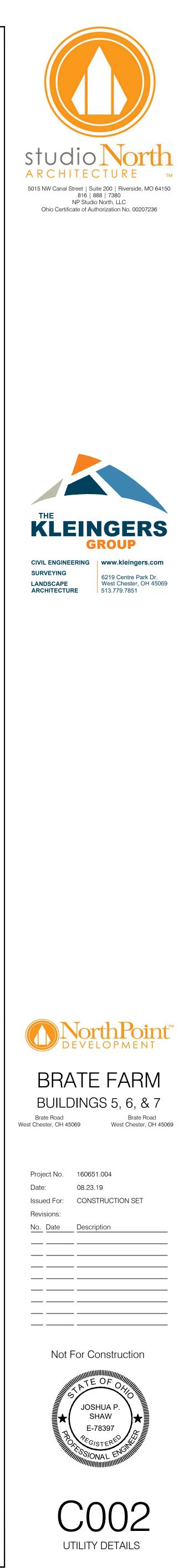


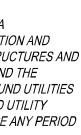
UNDERGROUND UTILITIES ARE PLOTTED FROM A COMPILATION OF AVAILABLE RECORD INFORMATION AND SURFACE INDICATIONS OF UNDERGROUND STRUCTURES AND MAY NOT BE INCLUSIVE. PRECISE LOCATIONS AND THE Utilities Protection EXISTENCE OR NON EXISTENCE OF UNDERGROUND UTILITIES CANNOT BE VERIFIED. PLEASE NOTIFY THE OHIO UTILITY 1-800-362-2764 Call Before You Dig PROTECTION SERVICE AT 1-800-362-2764 BEFORE ANY PERIOD OF EXCAVATION OR CONSTRUCTION ACTIVITY.

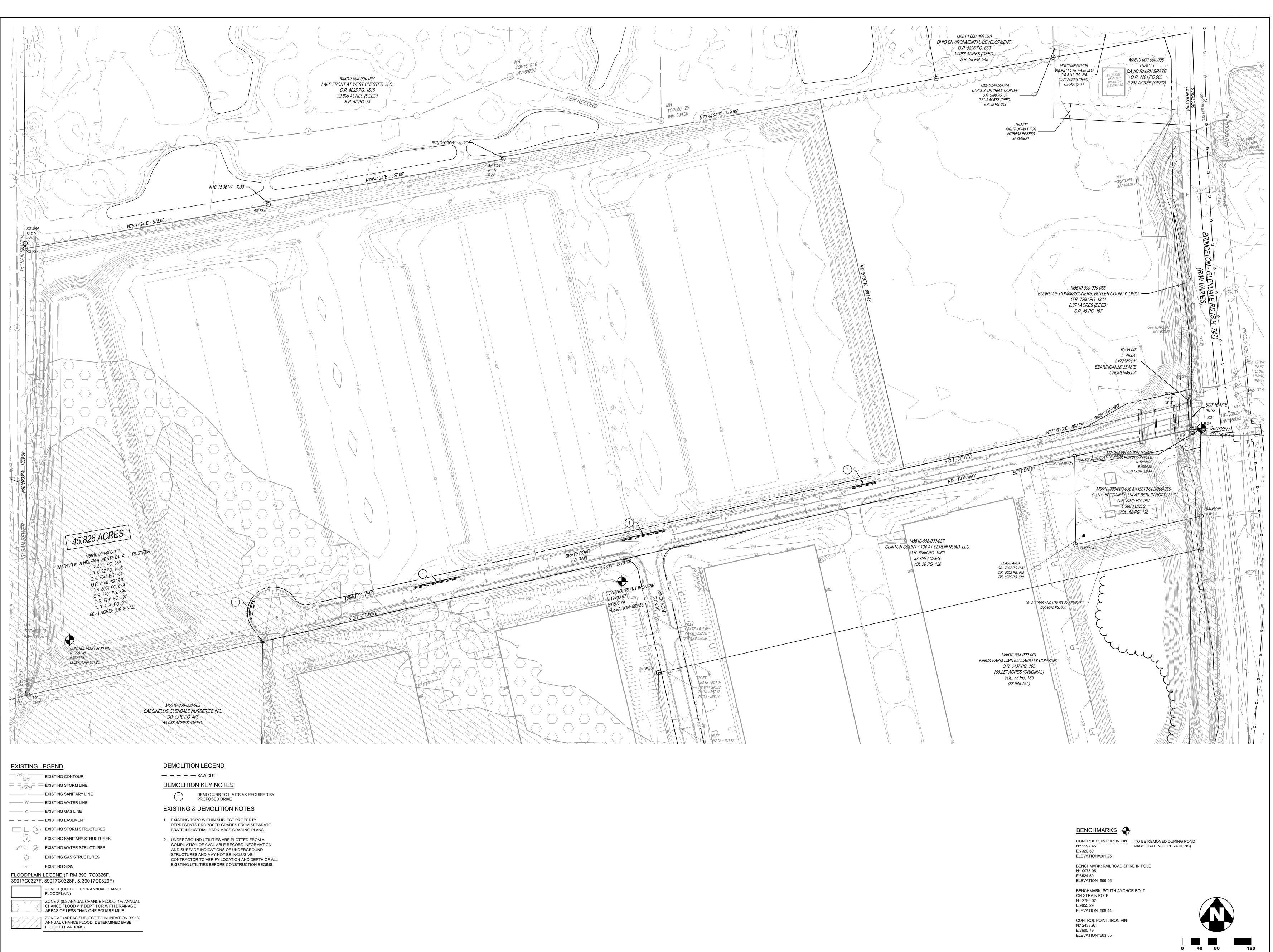














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 Individual Not be inclusive. Frequese locations and the existence of underground utilities
 SERVICE CANNOT BE VERIFIED. PLEASE NOTIFY THE OHIO UTILITY 1-800-362-2764 Call Before Yous Dig PROTECTION SERVICE AT 1-800-362-2764 BEFORE ANY PERIOD *OF EXCAVATION OR CONSTRUCTION ACTIVITY.*



5015 NW Canal Street | Suite 200 | Riverside, MO 64150 816 | 888 | 7380 NP Studio North, LLC Ohio Certificate of Authorization No. 00207236







Brate Road West Chester, OH 45069

> Project No. 160651.004 Date: Revisions: No. Date Description

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Brate Road

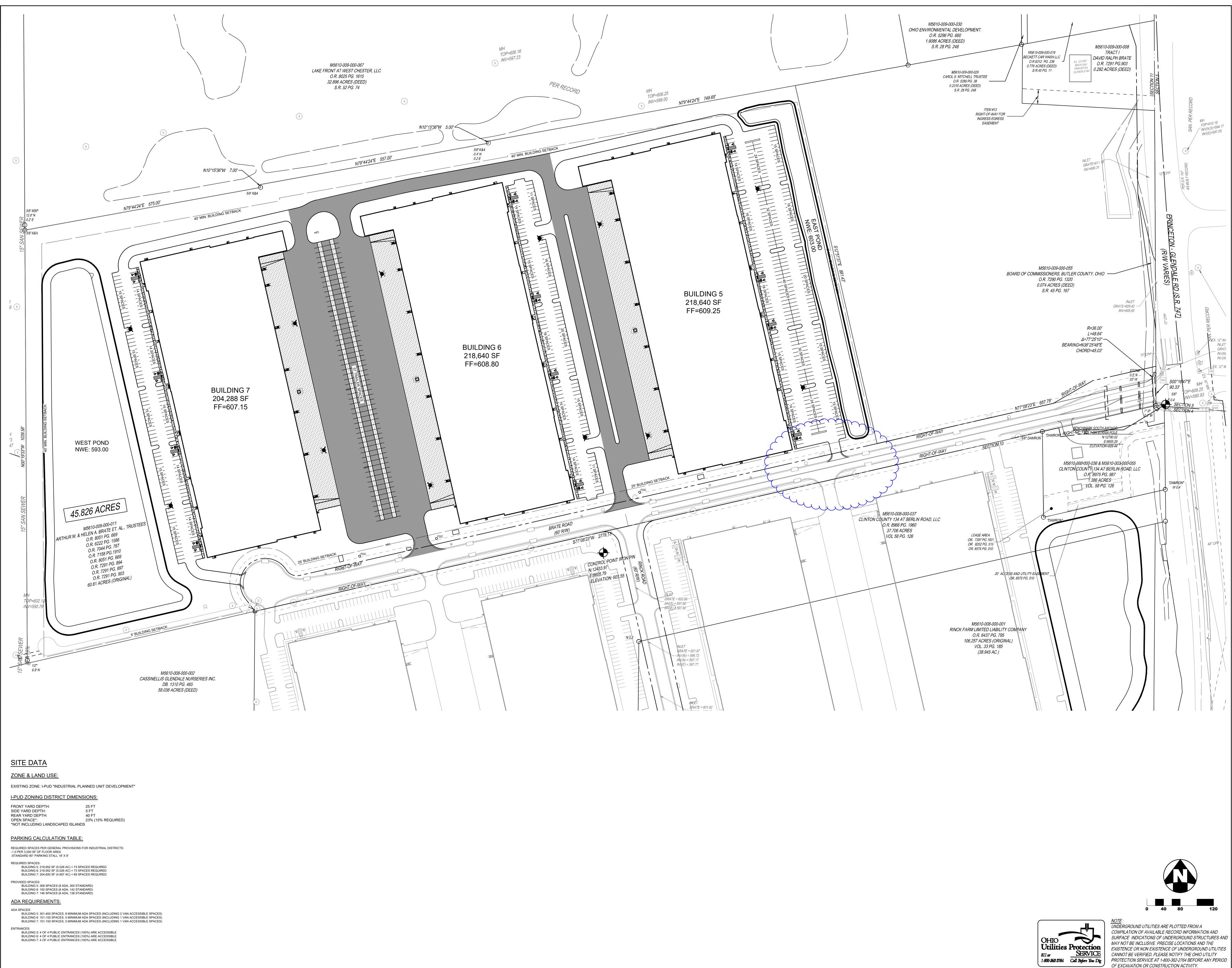
West Chester, OH 45069

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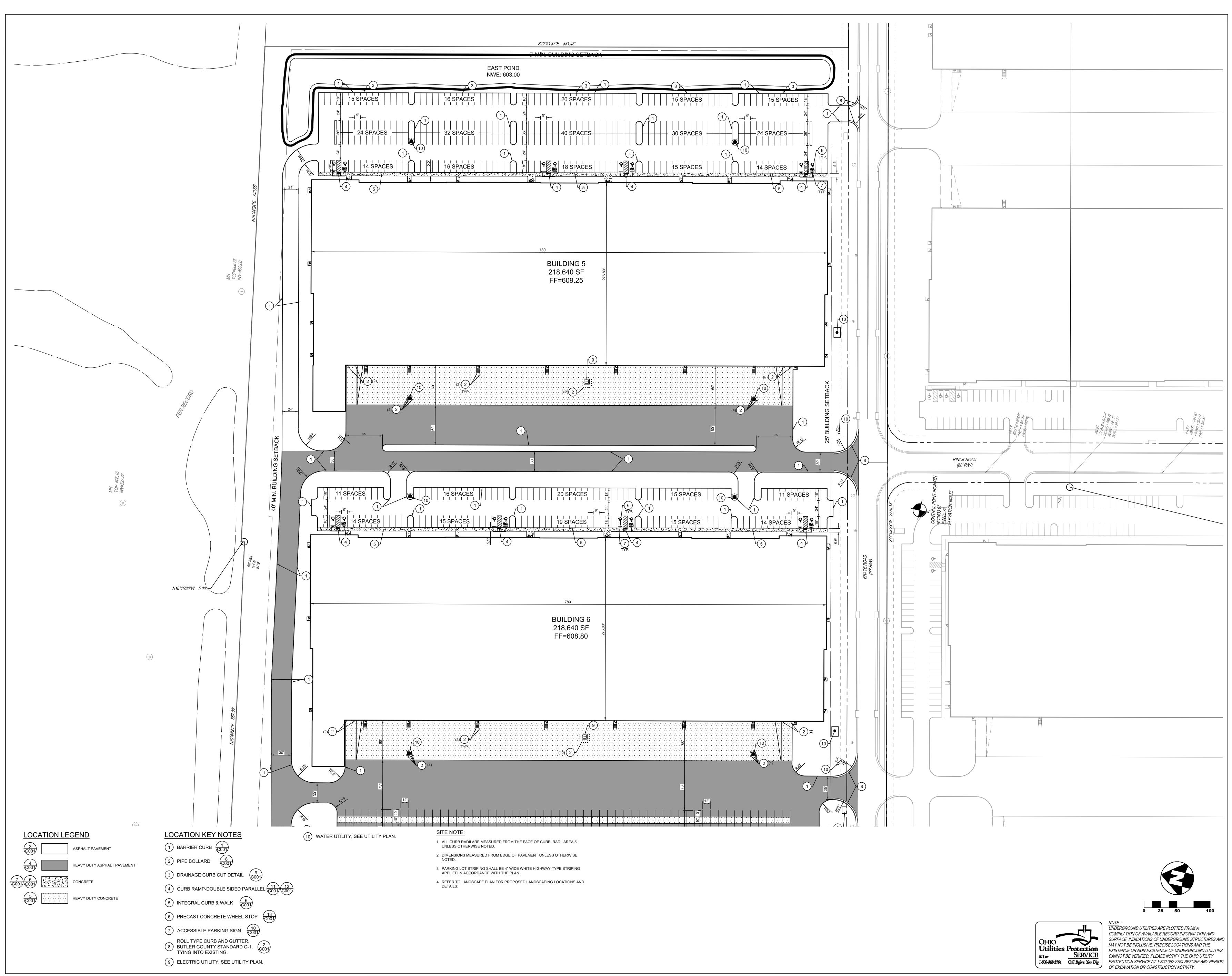
West Chester, OH 45069

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BRATE FARM BUILDINGS 5, 6, & 7

Brate Road West Chester, OH 45069 West Chester, OH 45069

Project No. 160651.004 Date: Revisions:

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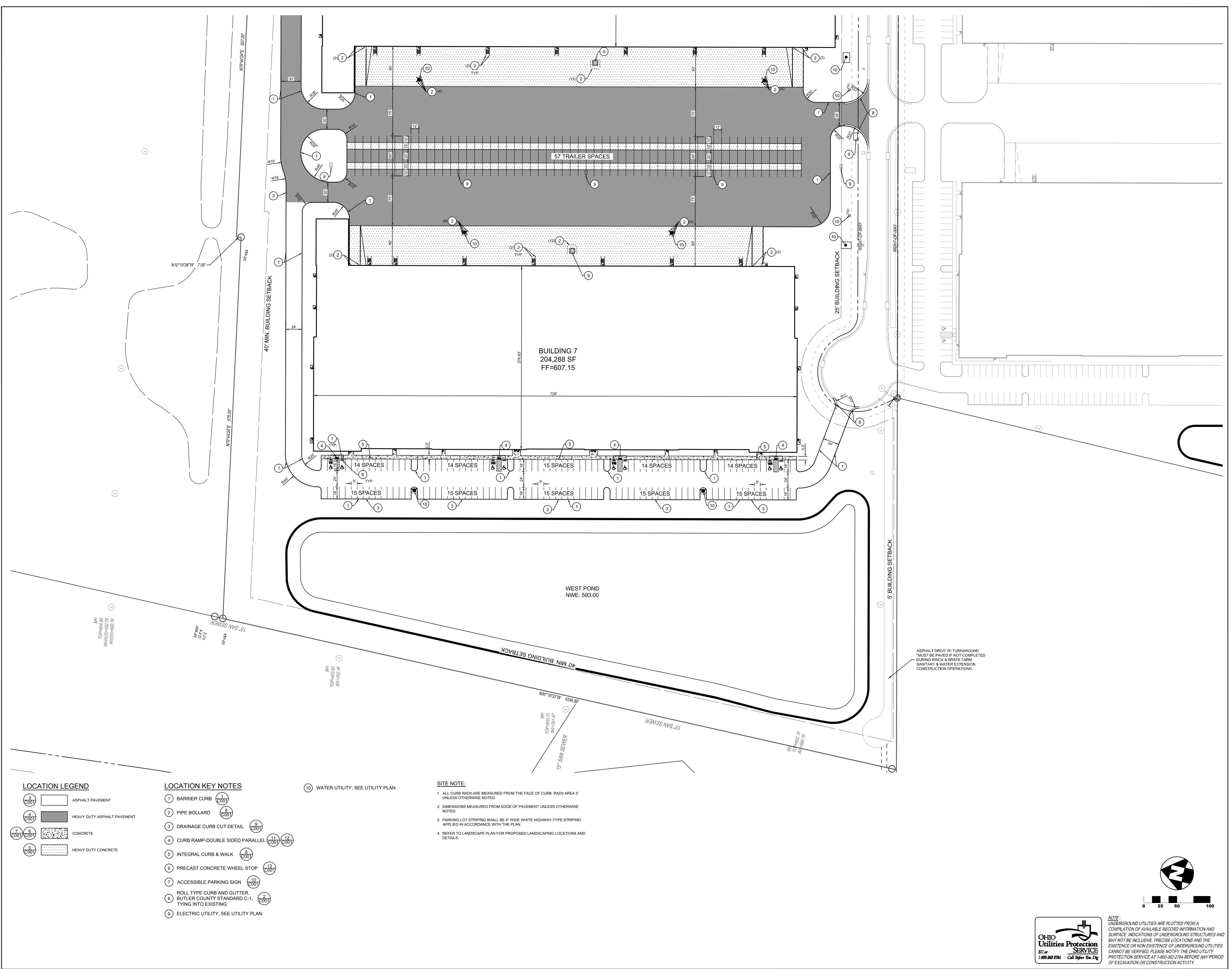
Brate Road

No. Date Description

Not For Construction



C201 ENLARGED LOCATION PLAN











Brate Road West Chester, OH 45069 West Chester, OH 45069

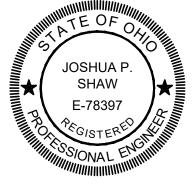
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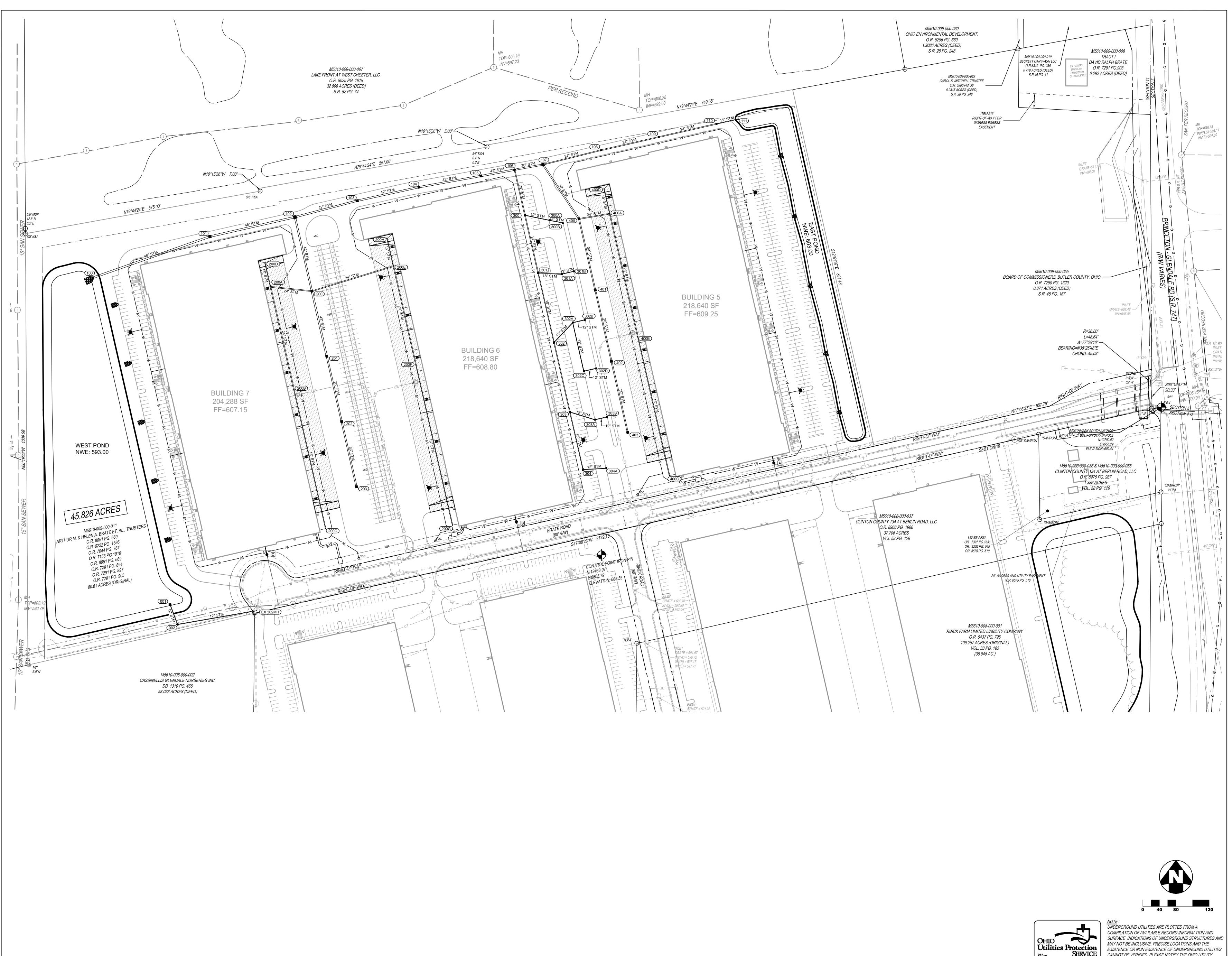
Brate Road

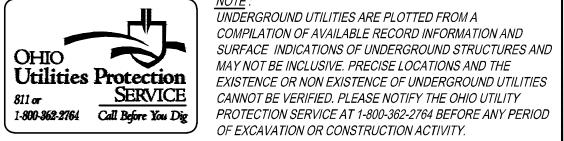
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BRATE FARM BUILDINGS 5, 6, & 7

Brate Road West Chester, OH 45069

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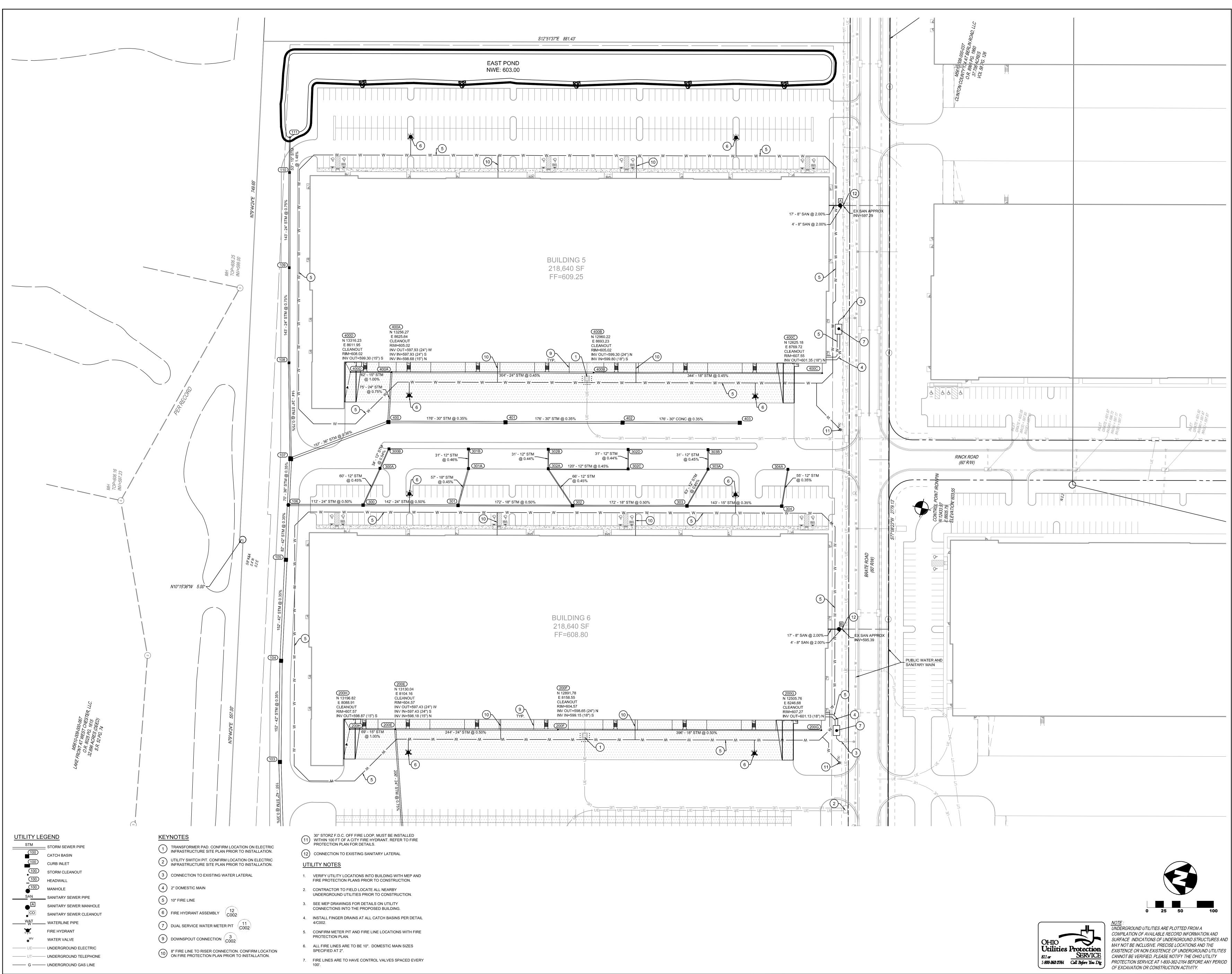
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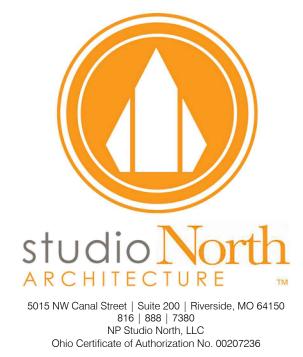
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BRATE FARM BUILDINGS 5, 6, & 7

Brate Road West Chester, OH 45069

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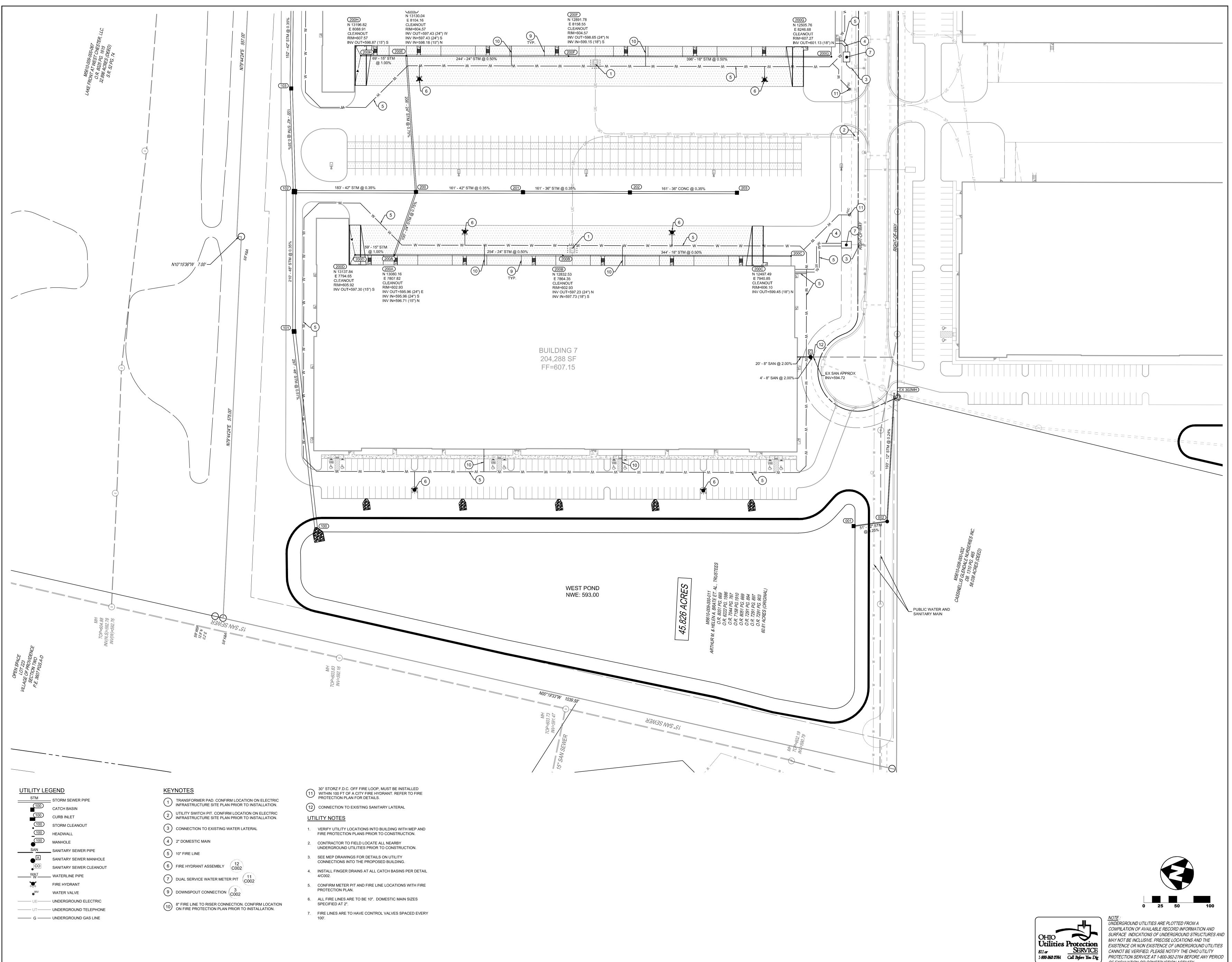
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Not For Construction



 $C30^{-1}$ ENLARGED UTILITY PLAN



OF EXCAVATION OR CONSTRUCTION ACTIVITY.



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Brate Road West Chester, OH 45069 West Chester, OH 45069

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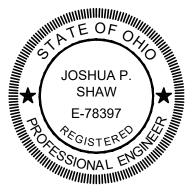
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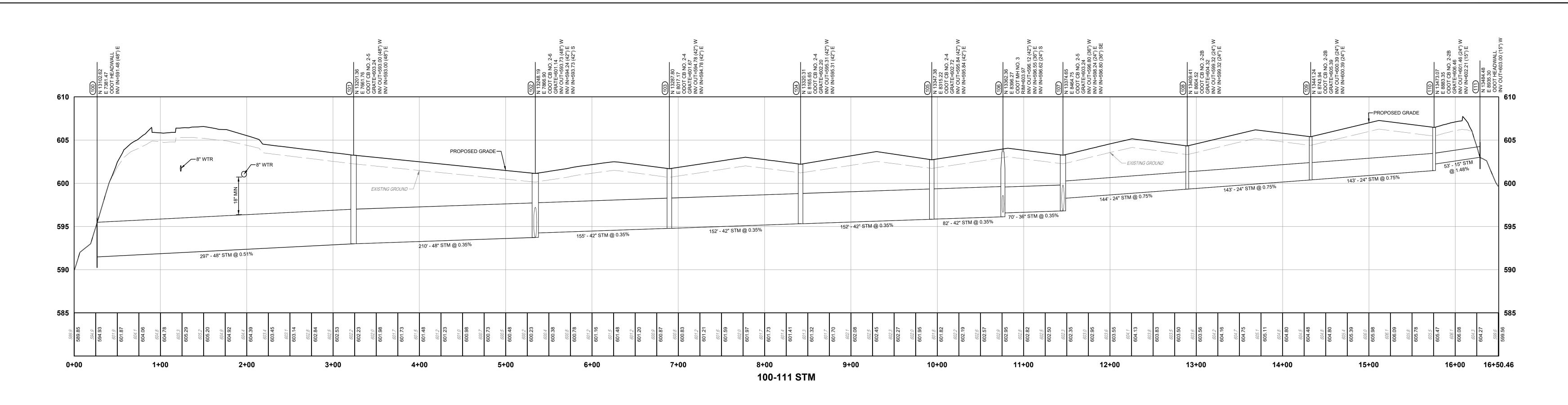
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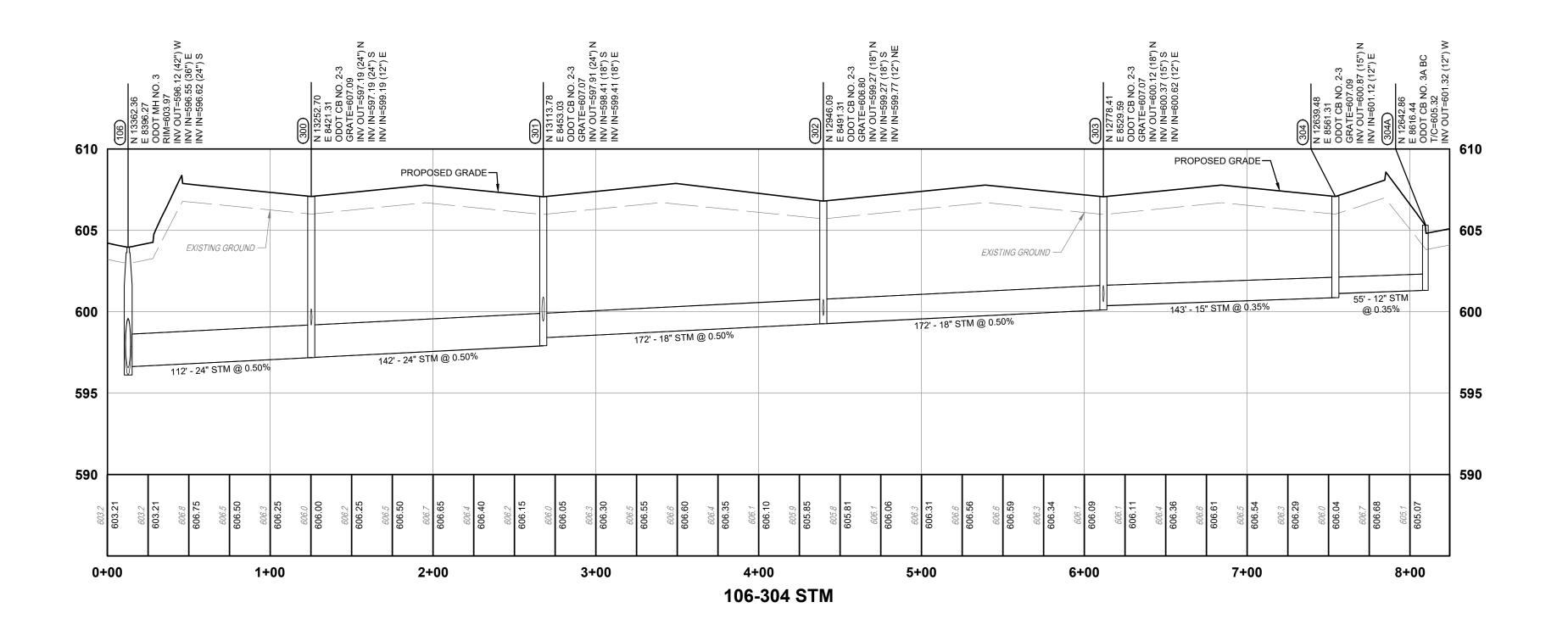
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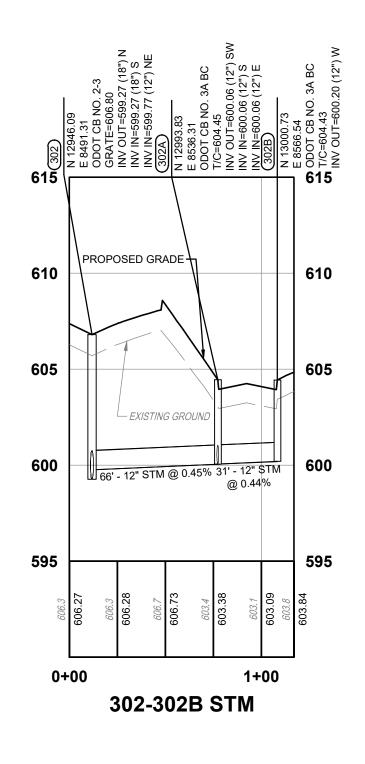


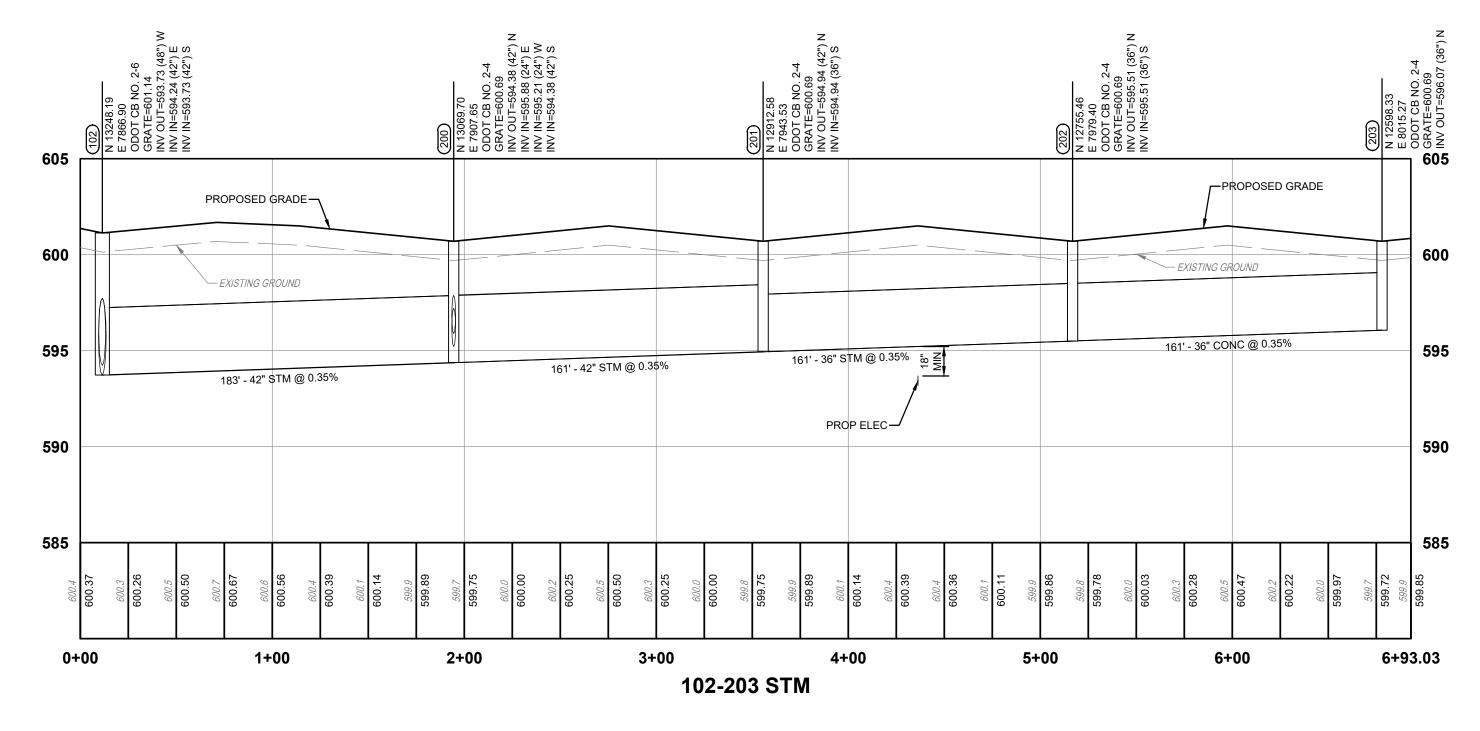


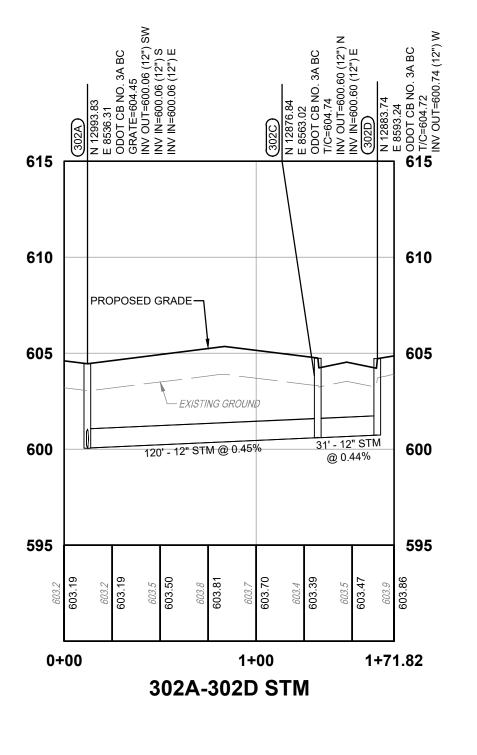
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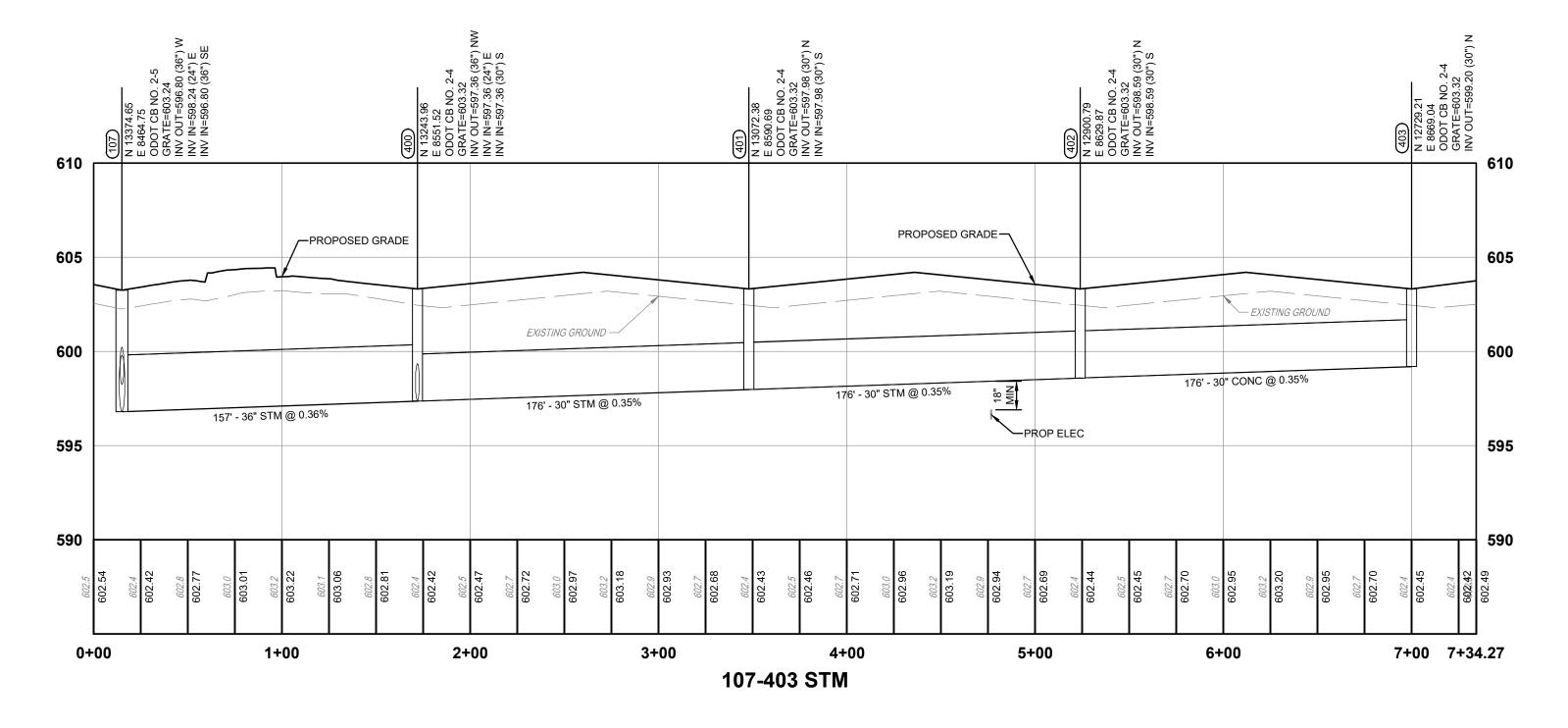












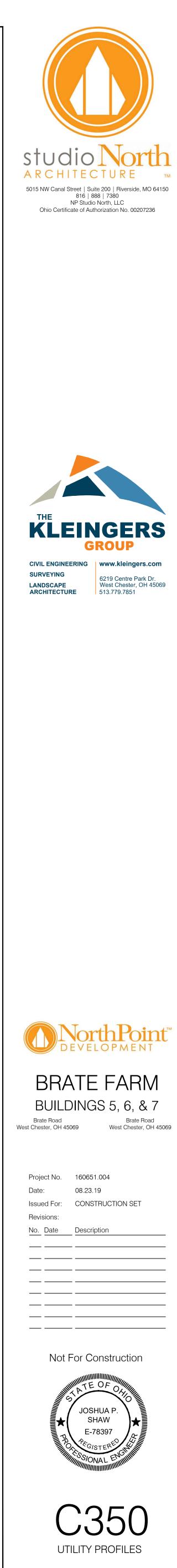
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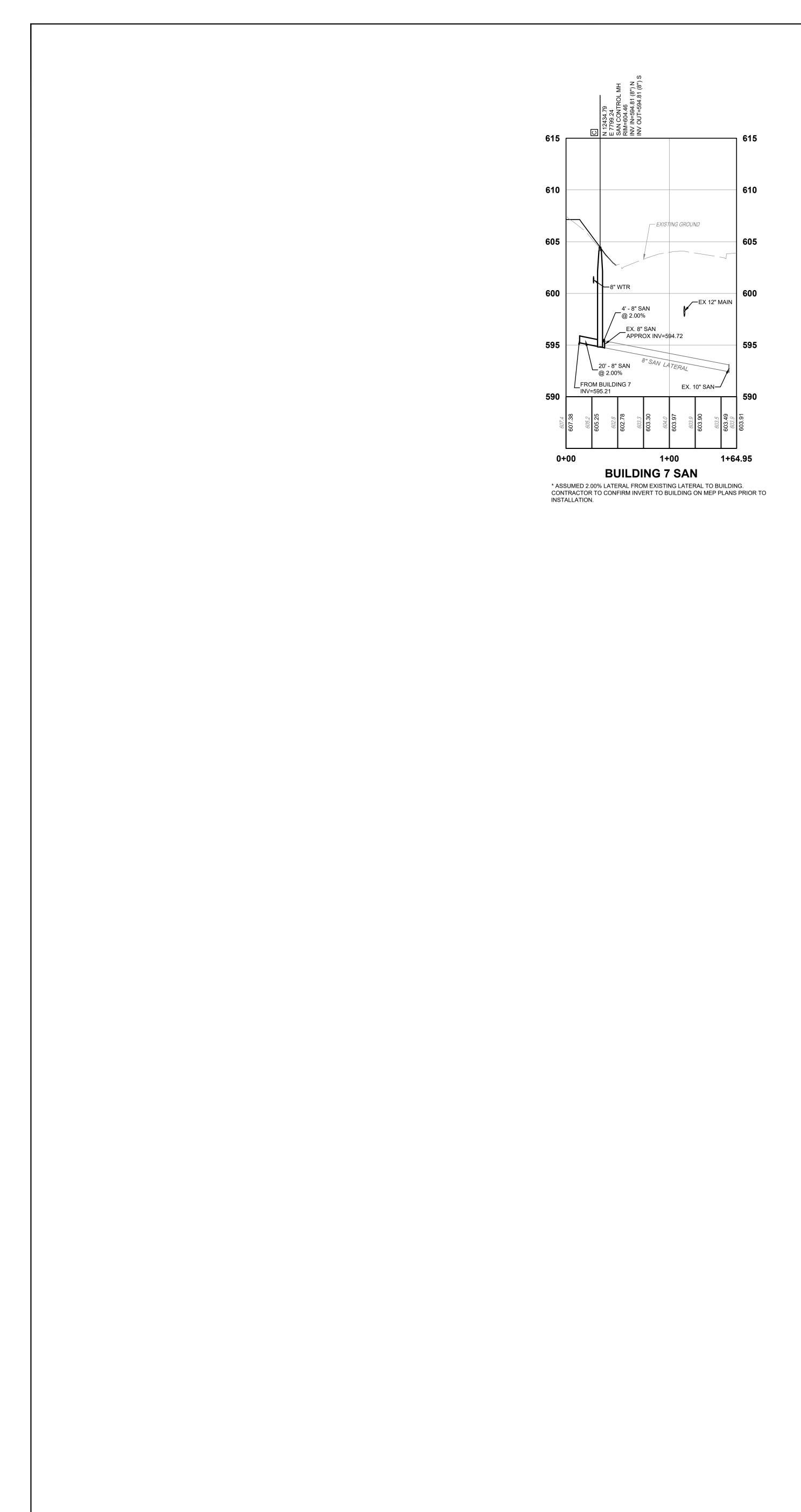
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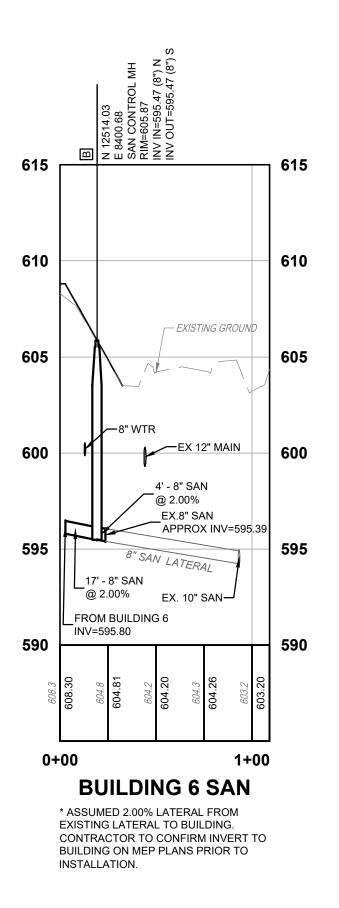
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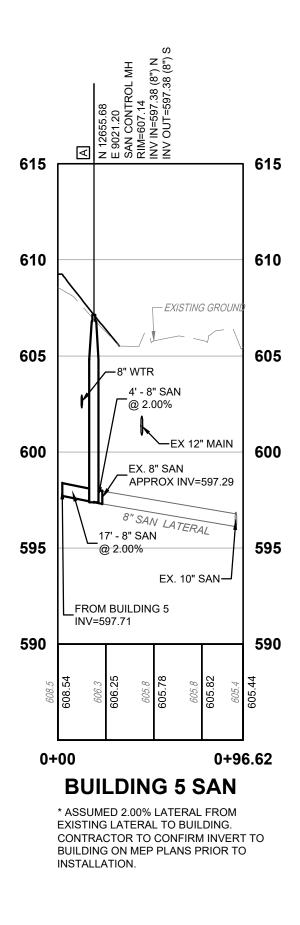


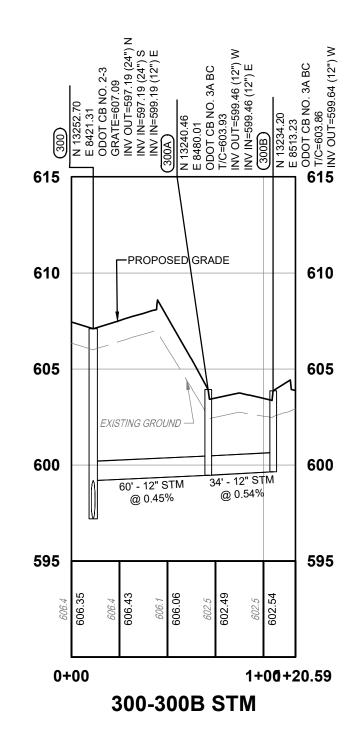
<u>NOTE</u>: UNDERGROUND UTILITIES ARE PLOTTED FROM A COMPILATION OF AVAILABLE RECORD INFORMATION AND SURFACE INDICATIONS OF UNDERGROUND STRUCTURES AND MAY NOT BE INCLUSIVE. PRECISE LOCATIONS AND THE EXISTENCE OR NON EXISTENCE OF UNDERGROUND UTILITIES CANNOT BE VERIFIED. PLEASE NOTIFY THE OHIO UTILITY PROTECTION SERVICE AT 1-800-362-2764 BEFORE ANY PERIOD PROTECTION SERVICE AT 1-800-362-2764 BEFORE ANY PERIOD OF EXCAVATION OR CONSTRUCTION ACTIVITY.

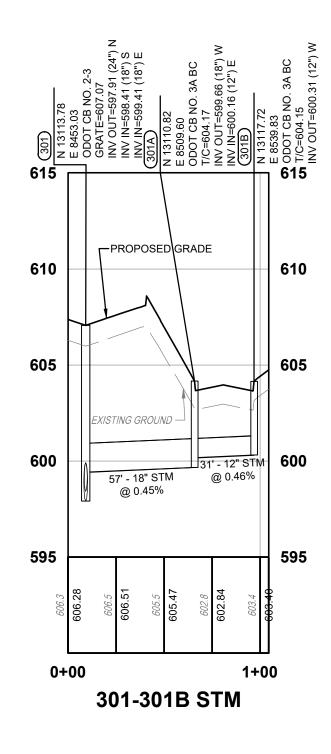


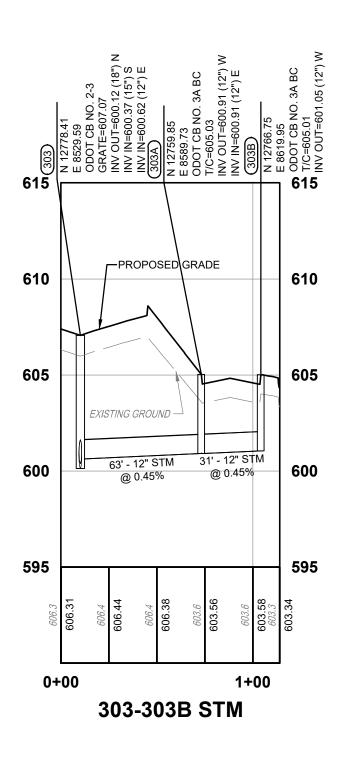


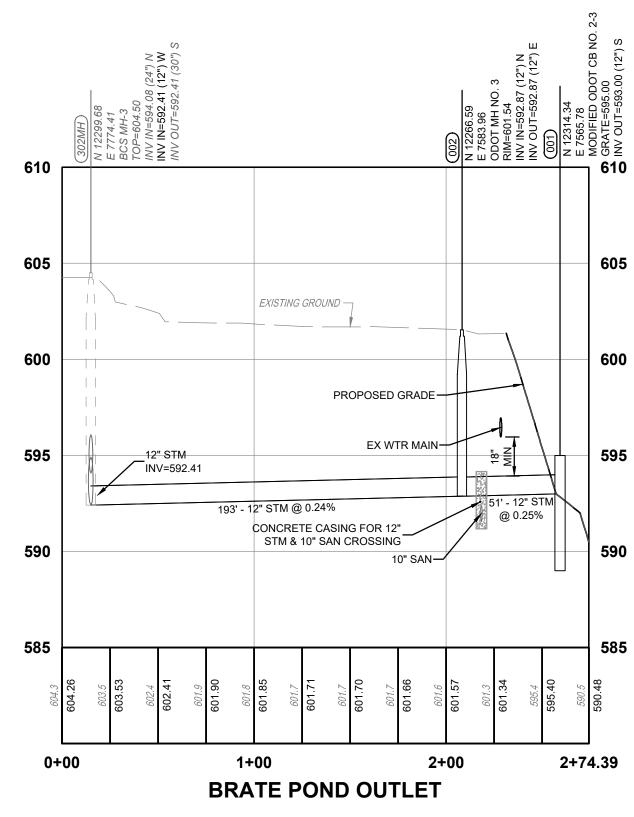












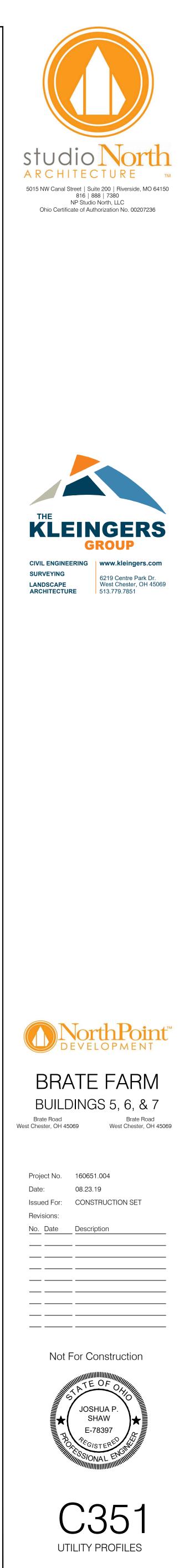


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5015 NW Canal Street | Suite 200 | Riverside, MO 64150 816 | 888 | 7380 NP Studio North, LLC Ohio Certificate of Authorization No. 00207236





BRATE FARM BUILDINGS 5, 6, & 7

Brate Road West Chester, OH 45069

> Project No. 160651.004 Date: Revisions: No. Date Description

08.23.19 Issued For: CONSTRUCTION SET

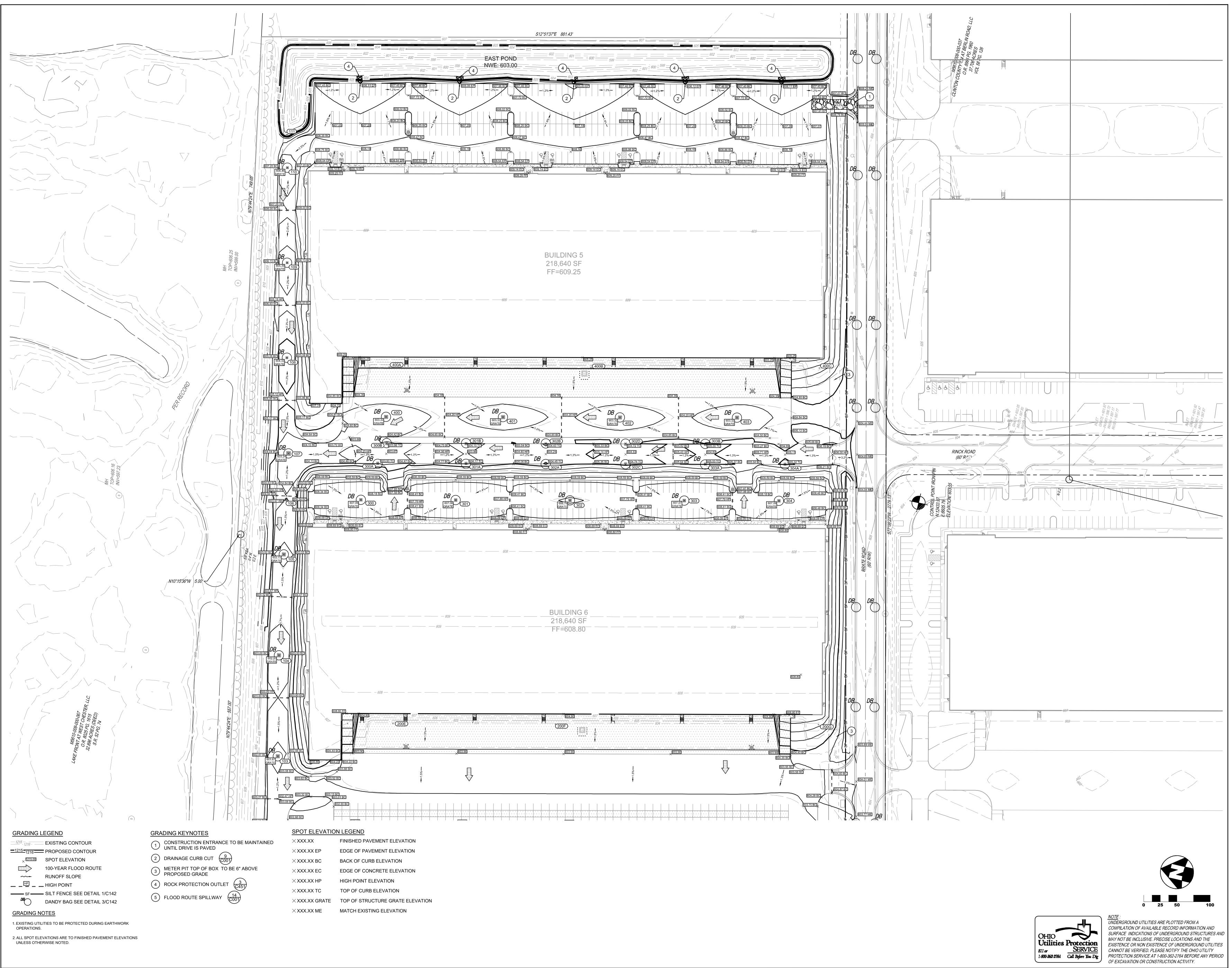
Brate Road West Chester, OH 45069

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BRATE FARM BUILDINGS 5, 6, & 7

Brate Road West Chester, OH 45069

> Project No. 160651.004 Date Revisions:

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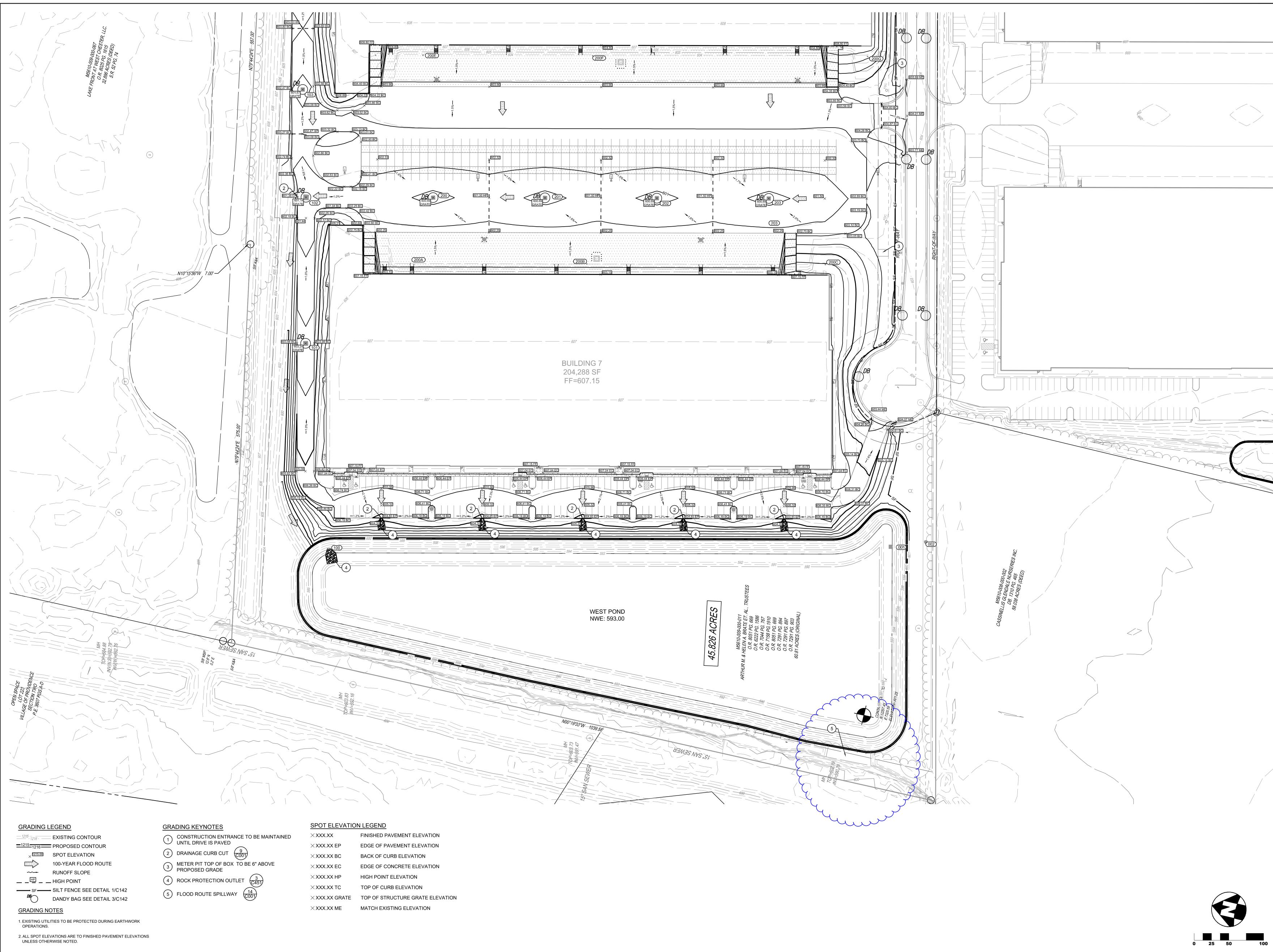
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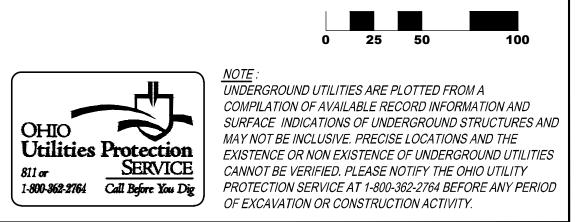
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Not For Construction



C401 ENLARGED GRANDING PLAN











BRATE FARM BUILDINGS 5, 6, & 7

Brate Road West Chester, OH 45069

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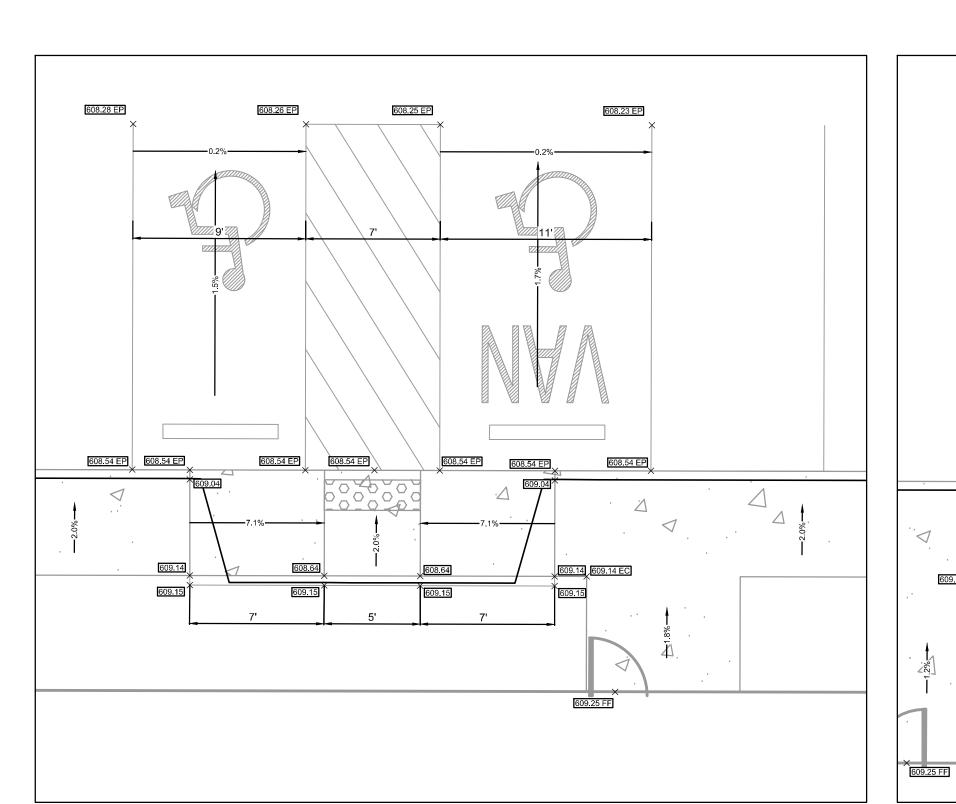
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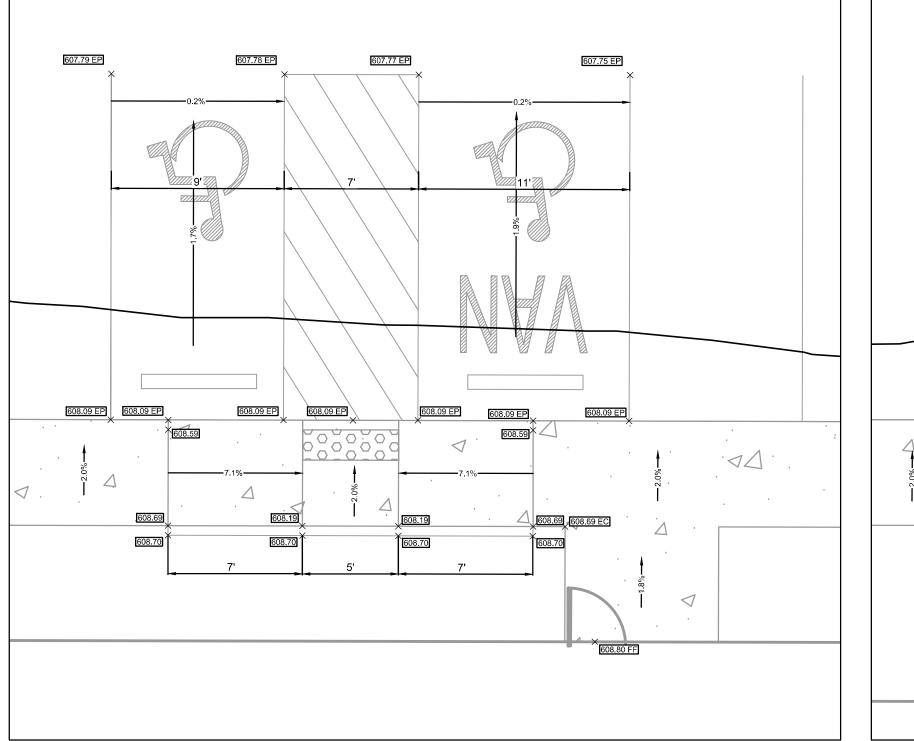
West Chester, OH 45069

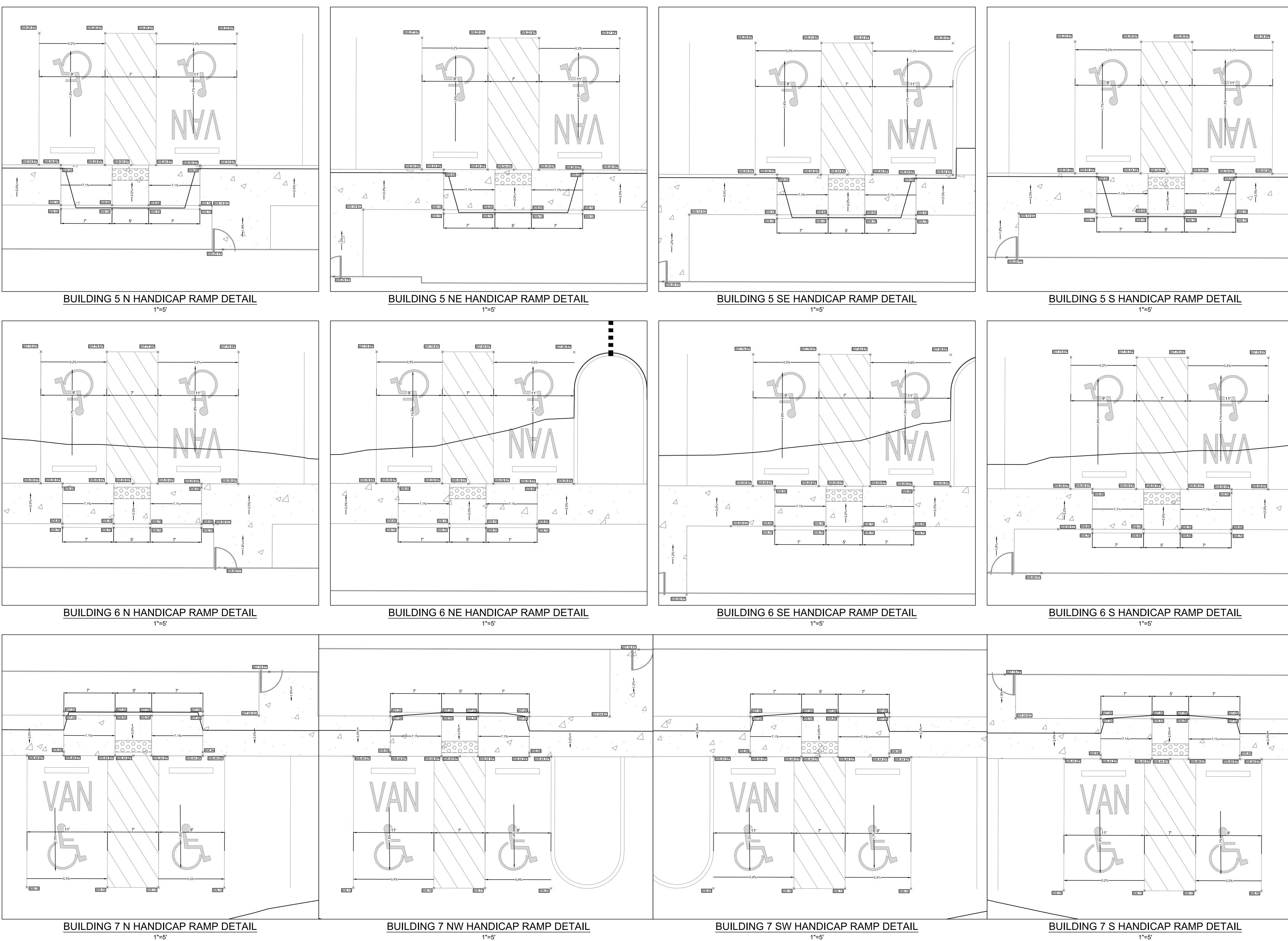
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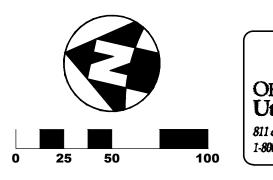








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Project No. 160651.004 Date: Revisions: No. Date Description

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SYN STA	RRA TACK OR NTHETIC BIND ATE.
S NECESSARY FOR THE PROJECT PHASE CURRENTLY UNDER APP	OD CELLULOS PLIED AT A NE (TURE SHALL (
	P PROCEDURES WILL BE IMPLEMENTED IN ACCORDANCE WITH ANY D 24 HOUR PHONE NO.: FOR AIL 614-728-3898 FOR AIL DISTUIT ARASE DAYS I FEET C DISTUIT ALL TEMPOR PRESENT IN THE AREA AND OBSERVE ALL CONSTRUCTION ALL TEMPOR DUIREMENTS AND RESPONSIBILITIES OF THE SWPPP AND MULCH AND MULCH AND GRADING IF PRUNTED IN THE LATEST EDITION OF THE OEPA "RAINWATER MULCH SHA NUD SEDIMENT CONTROL INSPECTIONS ON A WEEKLY BASIS AND MULCH SHA AT THE JOB SITE. MULCH SHA FEQUENCING THROUGHOUT ITS LIFETIME. IT IS VERY 61N YOLATIONS OF THE OEPA NPDES PERMIT TO THE ENGINEER 01N YOLATIONS OF THE OEPA NPDES PERMIT TO THE ENGINEER 01N S NECESSARY FOR THE PROJECT PHASE CURRENTLY UNDER 40 WC

TION AND DEMOLITION DEBRIS SHALL BE PROPERLY DISPOSED OF ACCORDING TO OHIO EPA REQUIREMENTS.

RACTOR WILL BE REQUIRED TO BUILD SEDIMENT BASINS OR SEDIMENT TRAPS OR USE EQUAL METHODS TO DETAIN AND TER TO ACCEPTABLE EPA STANDARDS BEFORE RELEASING THE WATER BACK INTO THE STREAM.

ALL BE NO TURBID DISCHARGES TO SURFACE WATERS, RESULTING FROM DEWATERING ACTIVITIES. SEDIMENT-LADEN JST PASS THROUGH A SETTLING POND, FILTER BAG, OR OTHER COMPARABLE PRACTICE, PRIOR TO DISCHARGE.

OR LIQUID WASTE SHALL BE DISCHARGED INTO STORM WATER RUNOFF.

ESS WASTEWATER (EQUIPMENT WASHING, LEACHATE FROM ON-SITE WASTE DISPOSAL, ETC.) SHALL BE COLLECTED AND OF AT A PUBLICLY OWNED TREATMENT WORKS.

FRUCTION ACTIVITIES MUST COMPLY WITH ALL LOCAL EROSION/SEDIMENT CONTROL, WASTE DISPOSAL, SANITARY AND EGULATIONS.

OSION CONTROL ITEMS MAY BE NECESSARY DUE TO ENVIRONMENTAL CONDITIONS. THE CONTRACTOR SHALL BE BLE FOR INSTALLATION AND IMPLEMENTATION OF ADDITIONAL EROSION CONTROL ITEMS, AT THE ENGINEER'S

ROCK, DEBRIS OR OTHER MATERIAL SHALL BE DUMPED OR PLACED IN ANY AREAS NOT ADEQUATELY PROTECTED BY CONTROL INSTALLATIONS.

RRED TO USE PERMANENT EROSION CONTROL ITEMS AS SHOWN IN THE PLANS TO CONTROL CONSTRUCTION POLLUTION SIBLE. OTHERWISE, THE TEMPORARY POLLUTION PREVENTION ITEMS ARE TO BE USED.

PORARY S&EC METHODS, INCLUDING BUT NOT LIMITED TO, SILT FENCE AND DITCH CHECKS MAY ALL HAVE TO BE LLY REMOVED AND REPLACED, OR MOVED FROM THE EXISTING ROAD DITCH OR STRIPPED AREAS AS WORK SES. ANY CHANGES SHALL BE NOTED IN THE PLAN BY RED LINE AND DATED ON A CORRECTIVE ACTION LOG.

ORARY SEDIMENT CONTROLS AND STORM WATER QUALITY METHODS WILL BE BUILT/INSTALLED AS THE PROJECT SES TO ELIMINATE UNNECESSARY DISTURBANCE AND REDUNDANCY. ALL TEMPORARY CONTROLS SHALL BE IN PLACE AND ING PROPERLY WHEN THREATENING WEATHER IS IMMINENT.

ARY STABILIZATION" MEANS THE ESTABLISHMENT OF TEMPORARY VEGETATION, MULCHING, GEOTEXTILES, SOD, TION OF EXISTING VEGETATION AND OTHER TECHNIQUES CAPABLE OF QUICKLY ESTABLISHING COVER OVER DISTURBED PROVIDE EROSION CONTROL BETWEEN CONSTRUCTION OPERATIONS.

INT STABILIZATION" MEANS THE ESTABLISHMENT OF PERMANENT VEGETATION, DECORATIVE LANDSCAPE MULCHING, SOD, RIP RAP AND LANDSCAPING TECHNIQUES TO PROVIDE PERMANENT EROSION CONTROL ON AREAS WHERE CTION OPERATIONS ARE COMPLETE OR WHERE NO FURTHER DISTURBANCE IS EXPECTED FOR AT LEAST A YEAR.

TRACKING OF SEDIMENTS SHALL BE MINIMIZED. A STABILIZED CONSTRUCTION ENTRANCE WILL BE PROVIDED TO HELP EHICLE TRACKING OF SEDIMENTS. ALL PAVED STREETS ADJACENT TO THE SITE WILL BE SWEPT DAILY TO REMOVE ANY UD, DIRT OR ROCK TRACKED FROM THE SITE. DUMP TRUCKS HAULING MATERIAL FROM THE CONSTRUCTION SITE WILL BE WITH A TARP.

IZATION PRACTICES

IT SEEDING AND MULCHING STABILIZATION SHALL BE PROVIDED PER OEPA GUIDELINES AS SET FORTH IN PART II.B OF PERMIT NO.: OHC000005. (SEE TABLE 1)

TABLE 1: PERMANE	ENT STABILIZATION
AREA REQUIRING PERMANENT STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
AREAS THAT WILL LIE DORMANT FOR ONE YEAR	WITHIN SEVEN DAYS OF THE MOST RECENT DISTURBANCE
AREAS WITHIN 50 FEET OF A SURFACE WATER OF STATE AND AT FINAL GRADE	WITHIN TWO DAYS OF REACHING FINAL GRADE
OTHER AREAS AT FINAL GRADE	WITHIN SEVEN DAYS OF REACHING FINAL GRADE WITHIN THAT AREA

ORARY SEEDING AND MULCHING STABILIZATION SHALL BE PROVIDED PER OEPA GUIDELINES AS SET TH IN PART II.B OF OHIO EPA PERMIT NO.: OHC000005. (SEE TABLE 2)

TABLE 2: TEMPORARY STABILIZATION						
AREA REQUIRING TEMPORARY STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS					
DISTURBED AREAS WITH 50 FEET OF A SURFACE FER OF THE STATE AND NOT AT FINAL GRADE	WITHIN TWO DAYS OF THE MOST RECENT DISTURBANCE IF THE AREA WILL REMAIN IDLE FOR MORE THAN 14 DAYS					
ALL CONSTRUCTION ACTIVITIES, ANY DISTURBED AS THAT WILL BE DORMANT FOR MORE THAN 14 S BUT LESS THAN ONE YEAR, AND NOT WITHIN 50 T OF A SURFACE WATER OF THE STATE	WITHIN SEVEN DAYS OF THE MOST RECENT DISTURBANCE WITHIN THE AREA FOR RESIDENTIAL SUBDIVISIONS, DISTURBED AREAS MUST BE STABILIZED AT LEAST SEVEN DAYS PRIOR TO TRANSFER OF PERMIT COVERAGE FOR THE INDIVIDUAL LOT(S).					
URBED AREAS THAT WILL BE IDLE OVER WINTER	PRIOR TO THE ONSET OF WINTER WEATHER					

DRARY EROSION AND SEDIMENT CONTROL INSTALLATIONS SHALL BE REMOVED WHEN 70% VEGETATION HAS BEEN

IG & MULCHING

D/OR OTHER APPROPRIATE VEGETATIVE PRACTICES SHALL BE APPLIED TO DISTURBED AREAS WITHIN 7 DAYS OF THE AREA IS TO REMAIN DORMANT (UNDISTURBED) FOR MORE THAN 14 DAYS OR ON AREAS AND PORTIONS OF THE SITE BE BROUGHT TO FINAL GRADE.

ALL CONSIST OF UNROTTED SMALL GRAIN STRAW APPLIED AT THE RATE OF 2 TONS/AC. OR 90 LB./1000 SQ. FT. (TWO TO LES). THE STRAW MULCH SHALL BE SPREAD UNIFORMLY BY HAND OR MECHANICALLY SO THE SOIL SURFACE IS COVERED. ORM DISTRIBUTION OF HAND-SPREAD MULCH, DIVIDE AREA INTO APPROXIMATELY 1000-SQ.-FT. SECTIONS AND PLACE TWO ES OF STRAW IN EACH SECTION.

ALL BE ANCHORED IMMEDIATELY TO MINIMIZE LOSS BY WIND OR RUNOFF. THE FOLLOWING ARE ACCEPTABLE METHODS

ECHANICAL-USE A DISK, CRIMPER, OR SIMILAR TYPE TOOL SET STRAIGHT TO PUNCH OR ANCHOR THE MULCH MATERIAL TO THE SOIL. STRAW MECHANICALLY ANCHORED SHALL NOT BE FINELY CHOPPED BUT BE LEFT GENERALLY LONGER THAN

JLCH NETTINGS-USE ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS, FOLLOWING ALL PLACEMENT AND NCHORING SUGGESTIONS. USE IN AREAS OF WATER CONCENTRATION AND STEEP SLOPES TO HOLD MULCH IN PLACE. (NTHETIC BINDERS-FOR STRAW MULCH, SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRI-TAC), DCA-70, PETROSET, ERRA TACK OR EQUAL MAY BE USED AT RATES RECOMMENDED BY THE MANUFACTURER. ALL APPLICATIONS OF (NTHETIC BINDERS MUST BE CONDUCTED IN SUCH A MANNER WHERE THERE IS NO CONTACT WITH WATERS OF THE FATE.

OOD CELLULOSE FIBER - WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. THE FIBER BINDER SHALL BE PPLIED AT A NET DRY WEIGHT OF 750 LB./ACRE. THE WOOD CELLULOSE FIBER SHALL BE MIXED WITH WATER AND THE IXTURE SHALL CONTAIN A MAXIMUM OF 50 LB./100 GAL. OF WOOD CELLULOSE FIBER.

TEMPORARY SEEDI	Ν
SEED TYPE	
PERENNIAL RYEGRASS TALL FESCUE ANNUAL RYEGRASS	
SMALL GRAIN STRAW	
FERTILIZER	
NOTE: OTHER APPROVED SPEC	:11

STOCKPILE

SILT FENCING SHALL BE INSTALLED AROUND TEMPORARY SPOIL STOCKPILES. THESE STOCKPILES SHALL BE STRAW MULCHED AND/OR TEMPORARILY SEEDED WITHIN 7 WORKING DAYS IF LEFT DORMANT FOR 14 DAYS OR LONGER.

TIMING OF CONTROLS/MEASURES AS INDICATED IN THE SEQUENCE OF MAJOR ACTIVITIES, CONSTRUCTION ENTRANCE(S) AND SILT FENCE WILL BE CONSTRUCTED PRIOR TO CLEARING OR GRADING OF ANY OTHER PORTIONS OF THE SITE. SEDIMENT CONTROL DEVICES SHALL BE IMPLEMENTED FOR ALL AREAS REMAINING DISTURBED LONGER THAN 14 DAYS AND/OR WITHIN 7 DAYS OF ANY GRUBBING ACTIVITIES. AREAS WHERE CONSTRUCTION ACTIVITY TEMPORARILY CEASES FOR MORE THAN 14 DAYS WILL BE STABILIZED WITH A TEMPORARY SEED AND MULCH WITHIN 2 DAYS OF THE LAST DISTURBANCE IF THE AREA IS WITHIN 50 FEET OF A STREAM, AND WITHIN 7 DAYS OF THE LAST DISTURBANCE IF THE AREA IS MORE THAN 50 FEET AWAY FROM A STREAM. ONCE CONSTRUCTION ACTIVITY CEASES PERMANENTLY IN AN AREA, THAT AREA WILL BE STABILIZED WITH PERMANENT SEED AND MULCH. AFTER THE ENTIRE SITE IS STABILIZED, THE ACCUMULATED SEDIMENT WILL BE REMOVED FROM THE BASIN.

STABILIZATION TYPE	J	F	М	Α	М	J	J	А	S	0	Ν	D	
PERMANENT SEEDING			•	•	•	*	*	*	•	•			* IRRIGATION NEEDED
DORMANT SEEDING	•	•	•							•	•	•	** IRRIGATION NEEDED FOR 2-3 WEEKS AFTER SOD IS
TEMPORARY SEEDING			•	•	•	*	*	*	•	•			APPLIED
SODDING			**	**	**	**	**	**	**				
MULCHING	•	•	•	•	•	•	•	٠	•	•	•	٠	

INSPECTIONS

ALL BMPS ON THIS SITE SHALL BE INSPECTED BY "QUALIFIED INSPECTION PERSONNEL" ASSIGNED BY THE CONTRACTOR OR DESIGNATED REPRESENTATIVE AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND BY THE END OF THE NEXT CALENDAR DAY, EXCLUDING WEEKENDS AND HOLIDAYS UNLESS WORK IS SCHEDULED, AFTER A RAIN EVENT OF 0.5 INCHES PER 24 HOUR PERIOD. A RECORD OF THESE INSPECTIONS SHALL BE MAINTAINED IN THE CONSTRUCTION OFFICE WITH THE SWPPP FOR PUBLIC VIEWING. ANY VIOLATIONS WILL BE REPORTED THROUGH THE PROJECT PERSONNEL. A RAIN GAUGE WILL BE LOCATED WITHIN THE PROJECT LIMITS.

FOLLOWING EACH INSPECTION, A CHECKLIST MUST BE COMPLETED AND SIGNED BY THE QUALIFIED INSPECTION PERSONNEL REPRESENTATIVE. AT A MINIMUM, THE INSPECTION REPORT SHALL INCLUDE:

- 1. THE INSPECTION DATE;
- 3 DISCHARGES OCCURRED;
- 6. LOCATION(S) OF BMPS THAT NEED TO BE MAINTAINED;

MAINTENANCE

THE CONTRACTOR SHALL MAINTAIN, REPAIR, OR REPLACE ALL EROSION CONTROL INSTALLATIONS AS NEEDED TO ENSURE THE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION. ALL REPAIRS TO BMPS SHALL BE MADE WITHIN 3 DAYS (OR SOONER IF POSSIBLE) OF NOTIFICATION OF DEFICIENCIES. IF THE CORRECTIONS ARE NOT MADE WITHIN THE 3 DAY PERIOD, LIQUIDATED DAMAGES MAY BE ASSESSED AS PER THE ODOT CMS SECTION 108.27.

ONGOING INSPECTION OF INSTALLATIONS WILL BE PERFORMED BY THE CONTRACTOR OR DESIGNATED REPRESENTATIVE.

ANY TRAPPED SEDIMENT OR DEBRIS REMOVED DURING CLEANING OF OR REMOVAL OF BMP INSTALLATIONS SHALL BE PLACED IN AREAS NOT SUBJECT TO EROSION AND PERMANENTLY STABILIZED.

DUST CONTROL

HAZARDS, TRAFFIC SAFETY PROBLEMS OR HARM ANIMAL OR PLANT LIFE.

THE FOLLOWING SPECIFICATIONS FOR DUST CONTROL SHALL BE FOLLOWED ONSITE: TREE AND NATURAL AREA PROTECTION PRACTICES. 2. MANUFACTURERS INSTRUCTIONS.

<u>ADHESIVE</u>

LATEX EMULSION RESIN IN WATER ACRYLIC EMULSION (NO TRAFFIC) ACRYLIC EMULSION (NO TRAFFIC) ACRYLIC EMULSION (TRAFFIC)

PERMITTEE

NORTHPOINT DEVELOPMENT 2060 READING RD CINCINNATI, OH 45202 PHONE: 513.382.8810 CONTACT: JEREMY MICHAEL

EMAIL: jmichael@northpointkc.com

IG & MULCHING FOR EROSION CONTROL						
<u>PER 1,000 SQ FT</u>	PER ACRE					
1 POUND 1 POUND 1 POUND	40 POUNDS 40 POUNDS 40 POUNDS					
90 POUNDS	2 TONS					
6 POUNDS OF 10-10-10 OR 12-12-12	250 POUNDS OF 10-10-10 OR 12-12-12					

IES MAY BE SUBSTITUTED

2. NAMES, TITLES, AND QUALIFICATIONS OF PERSONNEL MAKING THE INSPECTION;

WEATHER INFORMATION FOR THE PERIOD SINCE THE LAST INSPECTION (OR SINCE COMMENCEMENT OF CONSTRUCTION ACTIVITY IF THE FIRST INSPECTION) INCLUDING A BEST ESTIMATE OF THE BEGINNING OF EACH STORM EVENT, DURATION OF EACH STORM EVENT, APPROXIMATE AMOUNT OF RAINFALL FOR EACH STORM EVENT (IN INCHES), AND WHETHER ANY

4. WEATHER INFORMATION AND A DESCRIPTION OF ANY DISCHARGES OCCURRING AT THE TIME OF THE INSPECTION; 5. LOCATION(S) OF DISCHARGES OF SEDIMENT OR OTHER POLLUTANTS FROM THE SITE;

7. LOCATION(S) OF BMPS THAT FAILED TO OPERATE AS DESIGNED OR PROVED INADEQUATE FOR A PARTICULAR LOCATION; 8. LOCATION(S) WHERE ADDITIONAL BMPS ARE NEEDED THAT DID NOT EXIST AT THE TIME OF INSPECTION; AND 9. CORRECTIVE ACTION REQUIRED INCLUDING ANY CHANGES TO THE SWP3 NECESSARY AND IMPLEMENTATION DATES.

DUST CONTROL INVOLVES PREVENTING OR REDUCING DUST FROM EXPOSED SOILS OR OTHER SOURCES DURING LAND DISTURBING DEMOLITION AND CONSTRUCTION ACTIVITIES TO REDUCE THE PRESENCE OF AIRBORNE SUBSTANCES WHICH MAY PRESENT HEALTH

VEGETATIVE COVER AND/MULCH - APPLY TEMPORARY OR PERMANENT SEEDING AND MULCH TO AREAS THAT WILL REMAIN IDLE FOR OVER 14 DAYS. SAVING EXISTING TREES AND LARGE SHRUBS WILL ALSO REDUCE SOIL AND AIR MOVEMENT ACROSS DISTURBED AREAS. SEE TEMPORARY SEEDING; PERMANENT SEEDING; MULCHING PRACTICES; AND

WATERING - SPRAY SITE WITH WATER UNTIL THE SURFACE IS WET BEFORE AND DURING GRADING AND REPEAT AS NEEDED, ESPECIALLY ON HAUL ROADS AND OTHER HEAVY TRAFFIC ROUTES. WATERING SHALL BE DONE AT A RATE THAT PREVENTS DUST BUT DOES NOT CAUSE SOIL EROSION. WETTING AGENTS SHALL BE UTILIZED ACCORDING TO

SPRAY-ON ADHESIVES - APPLY ADHESIVE ACCORDING TO THE FOLLOWING TABLE OR MANUFACTURERS' INSTRUCTIONS.

<u>WATER DILUTION</u> (ADHESIVE: WATER)	<u>NOZZLE</u> <u>TYPE</u>	APPLICATION RATE (GAL/AC)
12.5:1	FINE	235
4:1	FINE	300
7:1	COARSE	450
3.5:1	COARSE	350

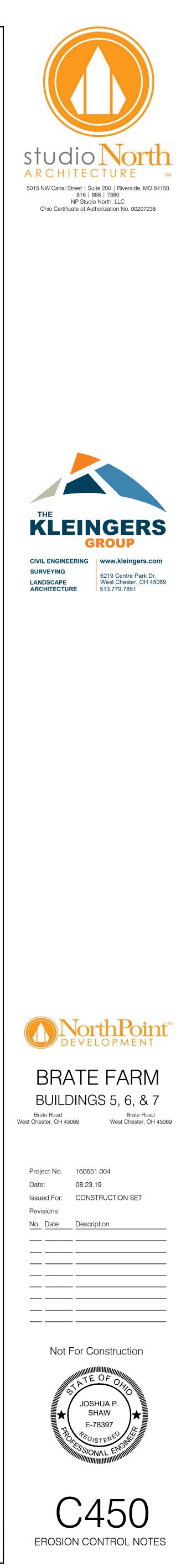
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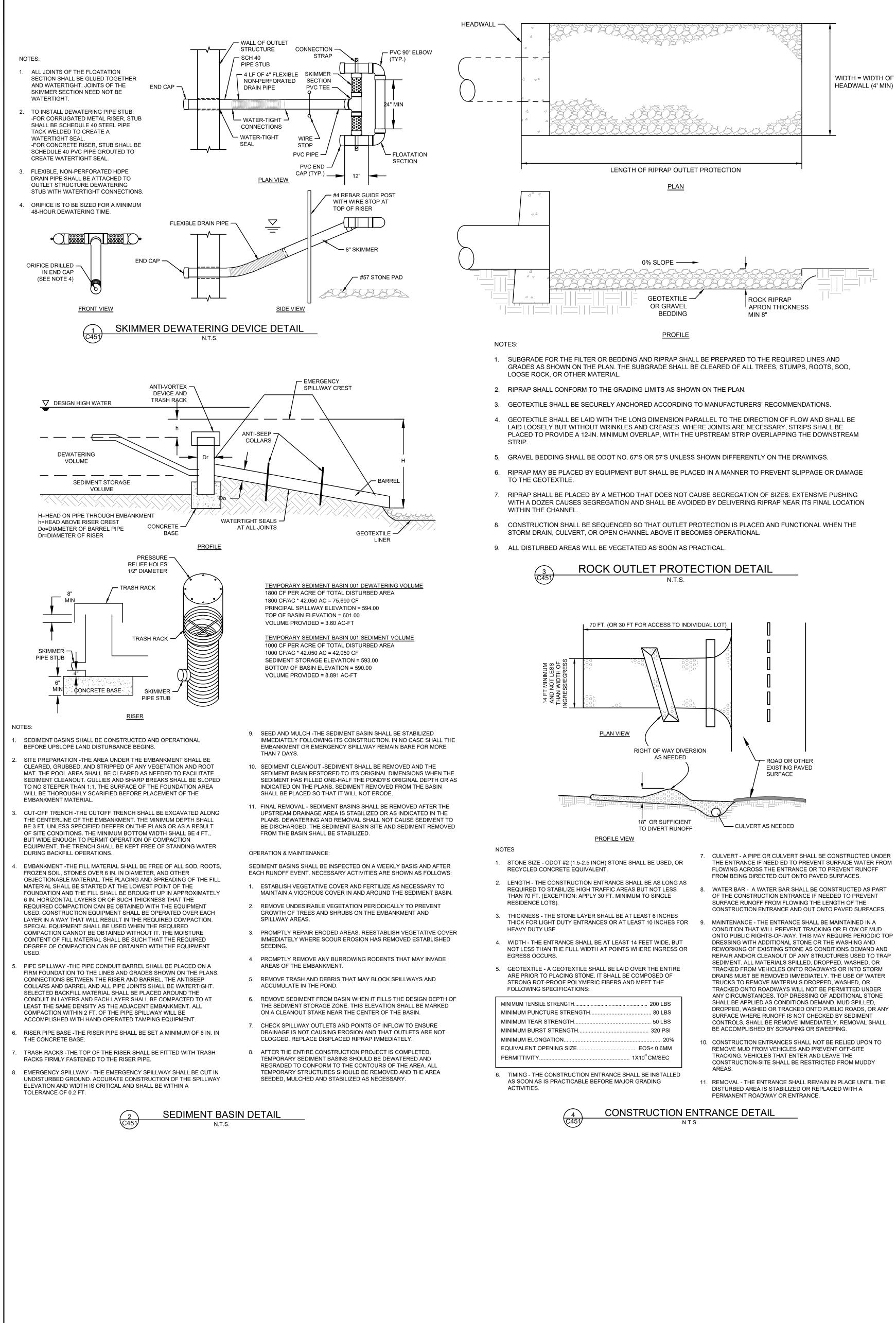
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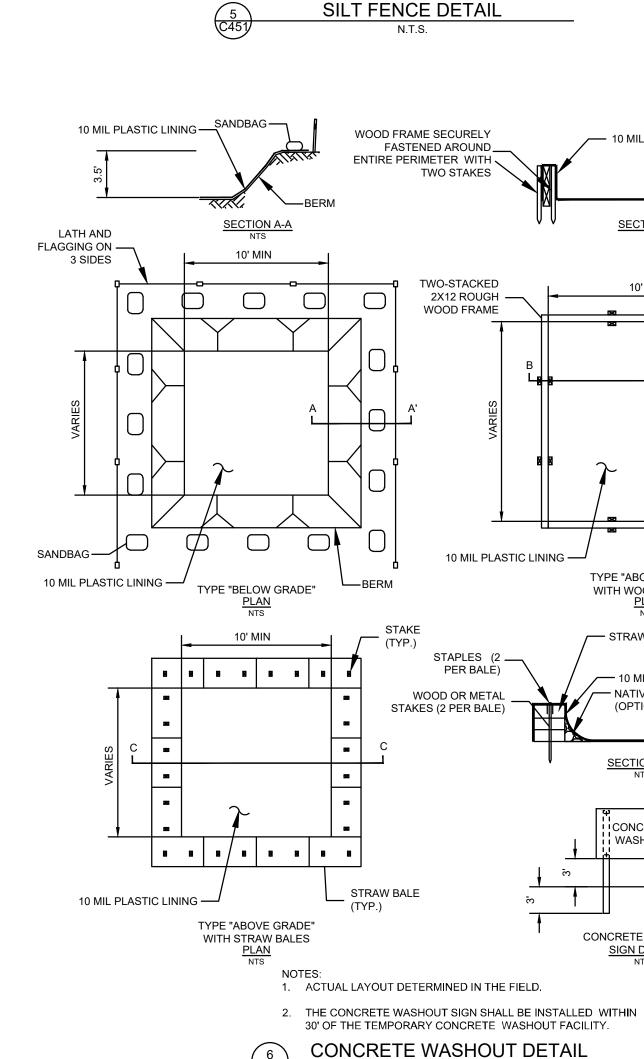
07/02/2019 DATE OF ISSUE:



UNDERGROUND UTILITIES ARE PLOTTED FROM A COMPILATION OF AVAILABLE RECORD INFORMATION AND SURFACE INDICATIONS OF UNDERGROUND STRUCTURES AND MAY NOT BE INCLUSIVE. PRECISE LOCATIONS AND THE EXISTENCE OR NON EXISTENCE OF UNDERGROUND UTILITIES CANNOT BE VERIFIED. PLEASE NOTIFY THE OHIO UTILITY PROTECTION SERVICE AT 1-800-362-2764 BEFORE ANY PERIOD OF EXCAVATION OR CONSTRUCTION ACTIVITY.







FEET (OR AS MUCH AS POSSIBLE) UPSLOPE FROM THE SILT FENCE. IF VEGETATION IS REMOVED, IT SHALL BE SILT FENCE. 6. THE HEIGHT OF THE SILT FENCE SHALL BE A MINIMUM OF 16

7. THE SILT FENCE SHALL BE PLACED IN AN EXCAVATED OR SLICED

TRENCH CUT A MINIMUM OF 6 INCHES DEEP. THE TRENCH SHALL

BE MADE WITH A TRENCHER, CABLE LAYING MACHINE, SLICING

DOWNSLOPE SIDE OF THE GEOTEXTILE. A MINIMUM OF 8 INCHES

EXCESS MATERIAL SHALL LAY ON THE BOTTOM OF THE 6-INCH

MACHINE, OR OTHER SUITABLE DEVICE THAT WILL ENSURE AN

8. THE SILT FENCE SHALL BE PLACED WITH THE STAKES ON THE

OF GEOTEXTILE MUST BE BELOW THE GROUND SURFACE.

DEEP TRENCH. THE TRENCH SHALL BE BACKFILLED AND

9. SEAMS BETWEEN SECTIONS OF SILT FENCE SHALL BE SPLICED

TOGETHER ONLY AT A SUPPORT POST WITH A MINIMUM 6-IN.

ADEQUATELY UNIFORM TRENCH DEPTH.

COMPACTED ON BOTH SIDES OF THE FABRIC.

OVERLAP PRIOR TO DRIVING INTO THE GROUND.

- INCHES ABOVE THE ORIGINAL GROUND SURFACE.
- REESTABLISHED WITHIN 7 DAYS FROM THE INSTALLATION OF THE CRITERIA FOR SILT FENCE MATERIALS

- AVAILABLE.
- SLIGHTLY SO THAT WATER PONDED BY THE SILT FENCE WILL BE PREVENTED FROM FLOWING AROUND THE ENDS. 4. SILT FENCE SHALL BE PLACED ON THE FLATTEST AREA
- POINTS IN THE FENCE AND SO THAT SMALL SWALES OR DEPRESSIONS THAT MAY CARRY SMALL CONCENTRATED FLOWS TO THE SILT FENCE ARE DISSIPATED ALONG ITS LENGTH.

1. SILT FENCE SHALL BE CONSTRUCTED BEFORE UPSLOPE LAND

2. ALL SILT FENCE SHALL BE PLACED AS CLOSE TO THE CONTOUR

AS POSSIBLE SO THAT WATER WILL NOT CONCENTRATE AT LOW

16" MINIMUM

6" MINIMUM

6" MIN.

SECTION

WRAP GEOTEXTILE

AROUND STAKES

BEFORE DRIVING

JOINING SECTIONS

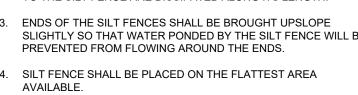
OF SILT FENCE

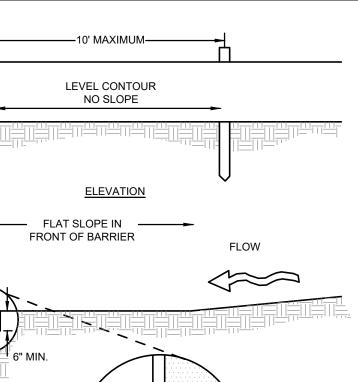
DISTURBANCE BEGINS.

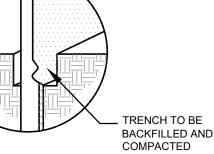
NOTES:

- 3. ENDS OF THE SILT FENCES SHALL BE BROUGHT UPSLOPE

- 5. WHERE POSSIBLE, VEGETATION SHALL BE PRESERVED FOR 5







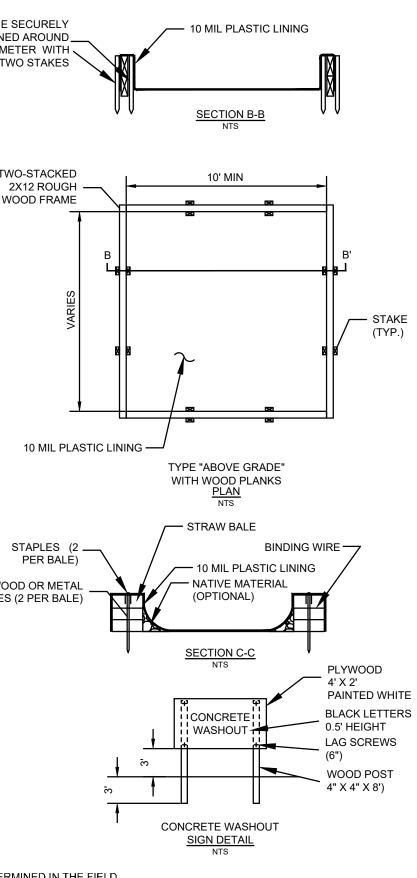
10. MAINTENANCE-SILT FENCE SHALL ALLOW RUNOFF TO PASS ONLY AS DIFFUSE FLOW THROUGH THE GEOTEXTILE. IF RUNOFF OVERTOPS THE SILT FENCE, FLOWS UNDER THE FABRIC OR AROUND THE FENCE ENDS. OR IN ANY OTHER WAY ALLOWS A CONCENTRATED FLOW DISCHARGE, ONE OF THE FOLLOWING SHALL BE PERFORMED, AS APPROPRIATE: 1) THE LAYOUT OF THE SILT FENCE SHALL BE CHANGED, 2) ACCUMULATED SEDIMENT SHALL BE REMOVED, OR 3) OTHER PRACTICES SHALL BE INSTALLED.

SEDIMENT DEPOSITS SHALL BE ROUTINELY REMOVED WHEN THE DEPOSIT REACHES APPROXIMATELY ONE-HALF OF THE HEIGHT OF THE SILT FENCE. SILT FENCES SHALL BE INSPECTED AFTER EACH RAINFALL AND AT LEAST DAILY DURING A PROLONGED RAINFALL. THE LOCATION

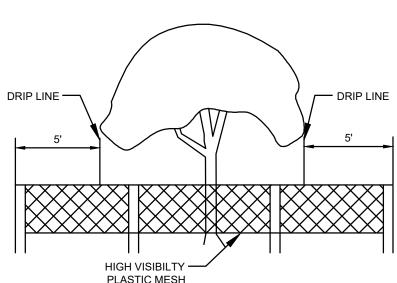
OF EXISTING SILT FENCE SHALL BE REVIEWED DAILY TO ENSURE ITS PROPER LOCATION AND EFFECTIVENESS. IF DAMAGED, THE SILT FENCE SHALL BE REPAIRED IMMEDIATELY.

FENCE POST – THE LENGTH SHALL BE A MINIMUM OF 32 INCHES. WOOD POSTS WILL BE 2-BY-2-IN. NOMINAL DIMENSIONED HARDWOOD OF SOUND QUALITY. THEY SHALL BE FREE OF KNOTS. SPLITS AND OTHER VISIBLE IMPERFECTIONS THAT WILL WEAKEN THE POSTS. THE MAXIMUM SPACING BETWEEN POSTS SHALL BE 10 FT. POSTS SHALL BE DRIVEN A MINIMUM 16 INCHES INTO THE GROUND, WHERE POSSIBLE. IF NOT POSSIBLE. THE POSTS SHALL BE ADEQUATELY SECURED TO PREVENT OVERTURNING OF THE FENCE DUE TO SEDIMENT/WATER LOADING.

ELOW.	
VALUES	TEST METHOD
120 LBS. (535 N)	ASTM D 4632
50%	ASTM D 4632
50 LBS. (220 N)	ASTM D 4833
40 LBS. (180 N)	ASTM D 4533
<0.84 MM	ASTM D 4751
1X10-2 SEC-1	ASTM D 4491
70%	ASTM G 4355
	120 LBS. (535 N) 50% 50 LBS. (220 N) 40 LBS. (180 N) <0.84 MM 1X10-2 SEC-1



N.T.S.



1. PROTECT EXISTING TREES AND OTHER VEGETATION INDICATED TO REMAIN IN PLACE AGAINST UNNECESSARY CUTTING, BREAKING OR SKINNING OF ROOTS, SKINNING OR BRUISING OF BARK, SMOTHERING OF TREES BY STOCKPILING CONSTRUCTION MATERIALS OR EXCAVATED MATERIALS WITHIN DRIP LINE, EXCESS FOOT OR VEHICULAR TRAFFIC, OR PARKING OF VEHICLES WITHIN DRIP LINE. PROVIDE TEMPORARY GUARDS TO PROTECT TREES AND AND VEGETATION TO BE LEFT STANDING.

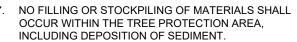
FENCING

2. SIGNAGE SHALL CLEARLY IDENTIFY THE TREE AND NATURAL PRESERVATION AREA AND STATE THAT NO CLEARING OR EQUIPMENT IS ALLOWED WITHIN

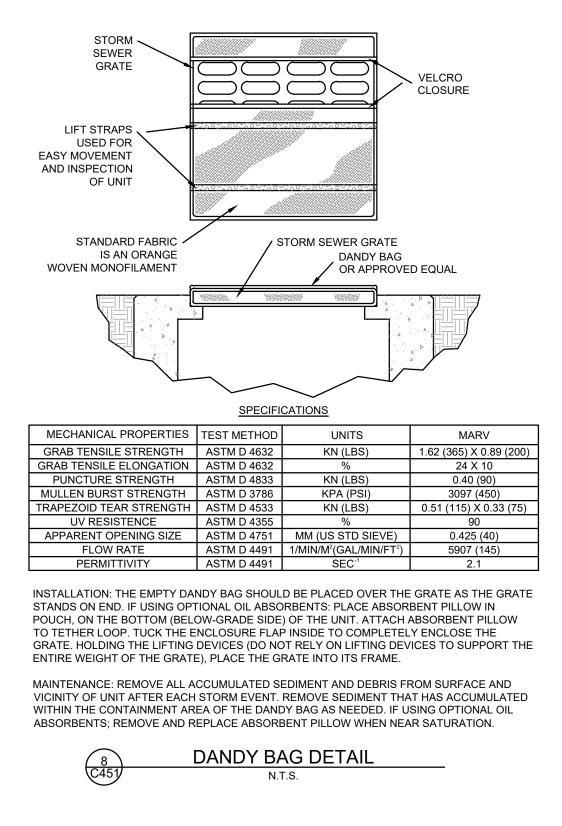
NOTES

- 3. TREE AND NATURAL PRESERVATION AREA SHALL BE FENCED PRIOR TO BEGINNING CLEARING OPERATIONS.
- 4. FENCE MATERIALS SHALL BE METAL FENCE POSTS WITH SNOW FENCE.
- 5. FENCE SHALL BE PLACED AS SHOWN ON PLANS AND BEYOND THE DRIP LINE OR CANOPY OF TREES TO BE PROTECTED.
- 6. IF ANY CLEARING IS DONE AROUND SPECIMEN TREES IT SHALL BE DONE BY CUTTING AT GROUND LEVEL WITH HAND HELD TOOLS AND SHALL NOT BE GRUBBED OR PULLED OUT. NO CLEARING SHALL BE DONE IN BUFFER STRIPS OR OTHER PRESERVED FORESTED AREAS.

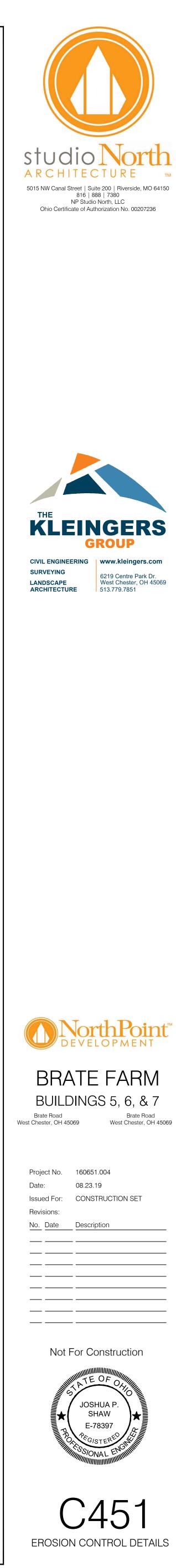
TREE PROTECTION DETAIL

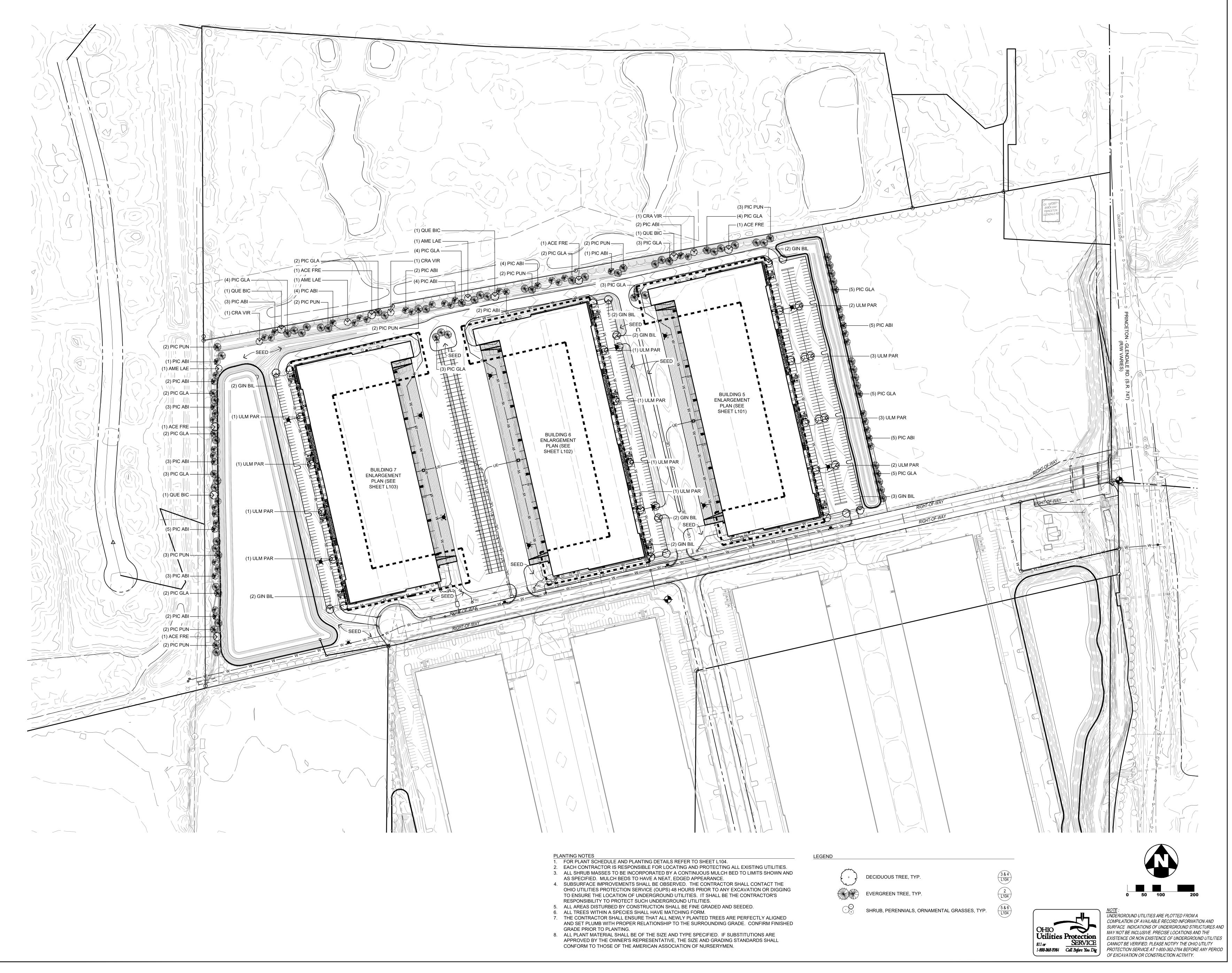


- 8. WHERE UTILITIES MUST RUN THROUGH A TREE'S DRIP LINE, TUNNELING SHOULD BE USED TO MINIMIZE ROOT DAMAGE. TUNNELING SHOULD BE AT A MINIMUM DEPTH OF 24 INCHES FOR TREES LESS THAN 12 INCHES IN DIAMETER OR AT A MINIMUM DEPTH OF 36 INCHES FOR LARGER DIAMETER TREES.
- WHERE TUNNELING WILL BE PERFORMED WITHIN THE DRIP LINE OF A TREE, THE TUNNEL SHOULD BE PLACED A MINIMUM OF 2 FEET AWAY FROM THE TREE TRUNK TO AVOID TAPROOTS.
- 10. MINIMIZE EXCAVATION OR TRENCHING WITHIN THE DRIP LINE OF THE TREE. ROUTE TRENCHES AROUND THE DRIP LINE OF TREES.
- 11. ROOTS 2 INCHES OR LARGER THAT ARE SEVERED BY TRENCHING SHOULD BE SAWN OFF NEATLY IN ORDER TO ENCOURAGE NEW GROWTH AND DISCOURAGE DECAY.
- 12. SOIL EXCAVATED DURING TRENCHING SHALL BE PILED ON THE SIDE AWAY FROM THE TREE. 13. ROOTS SHALL BE KEPT MOIST WHILE TRENCHES ARE OPEN AND REFILLED IMMEDIATELY AFTER UTILITIES ARE INSTALLED OR REPAIRED.

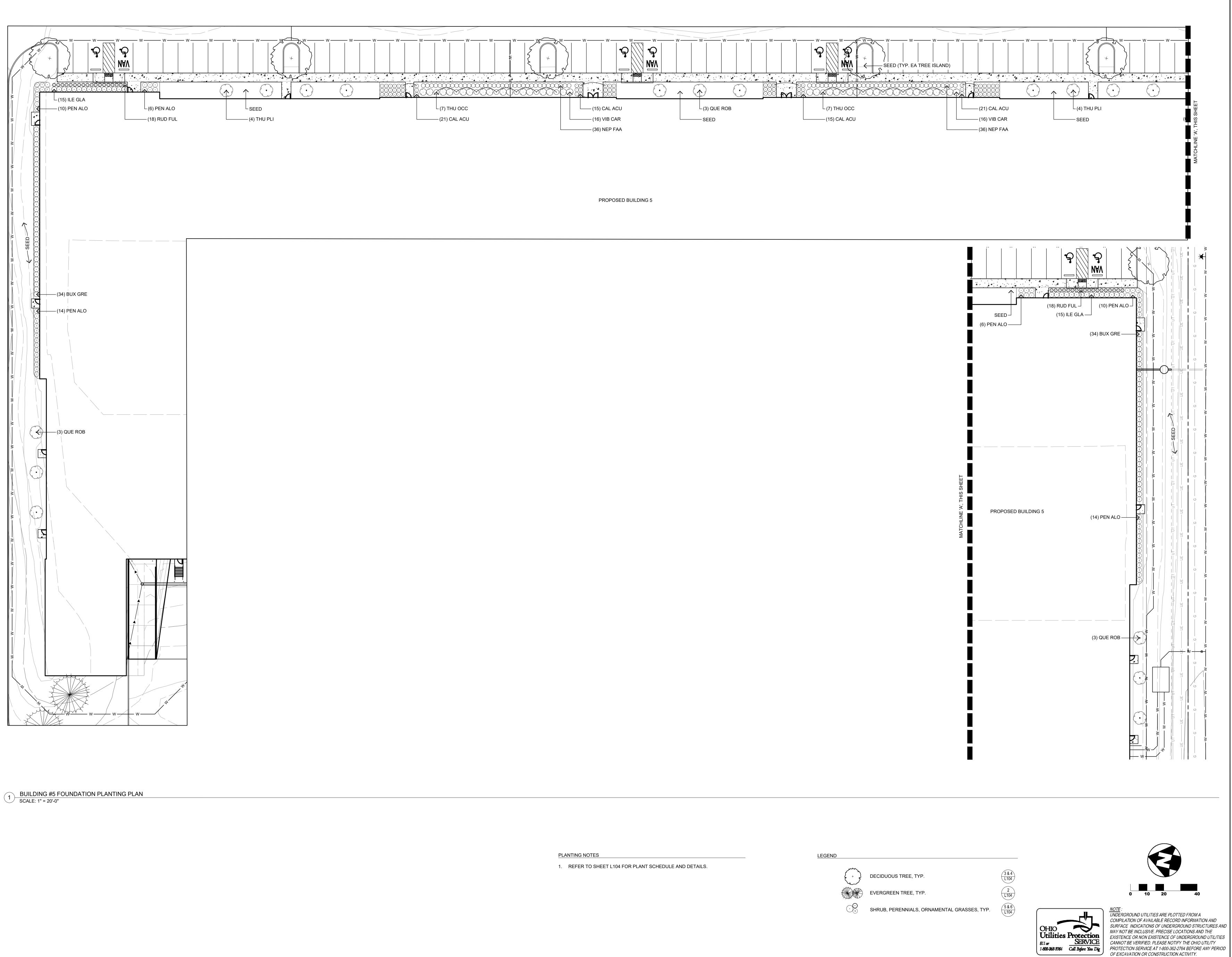


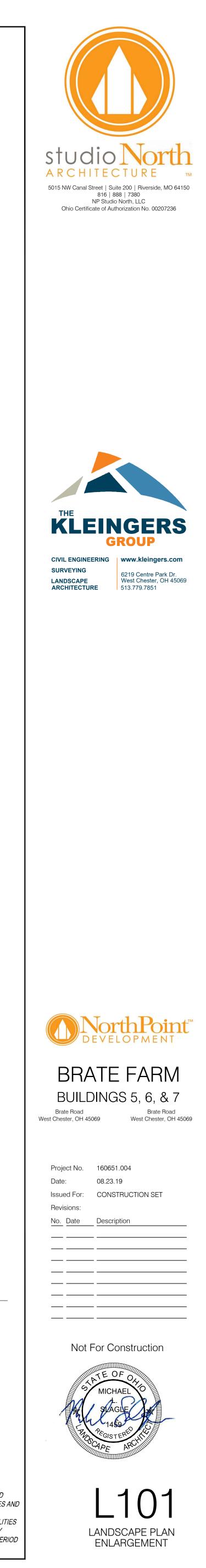


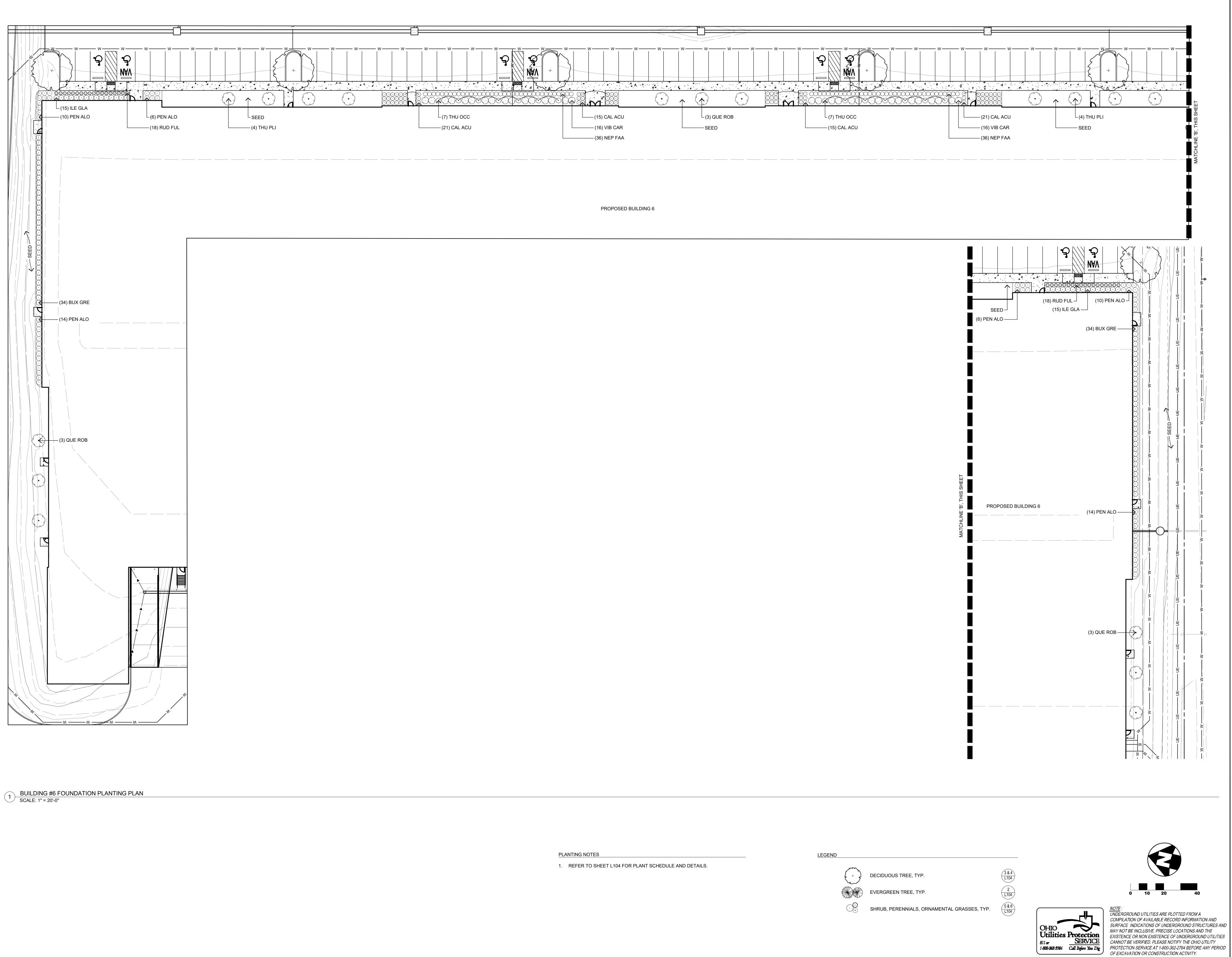


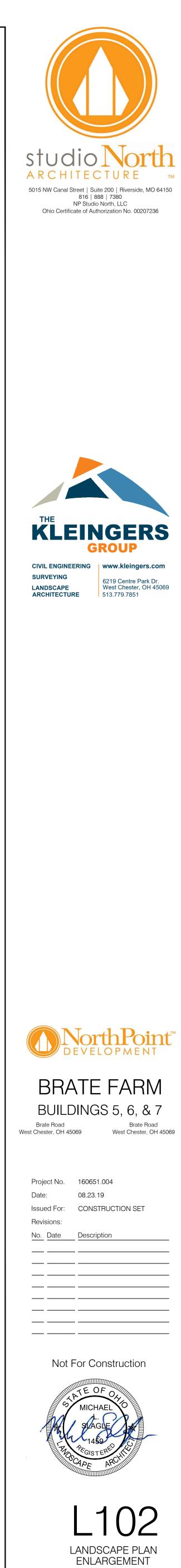


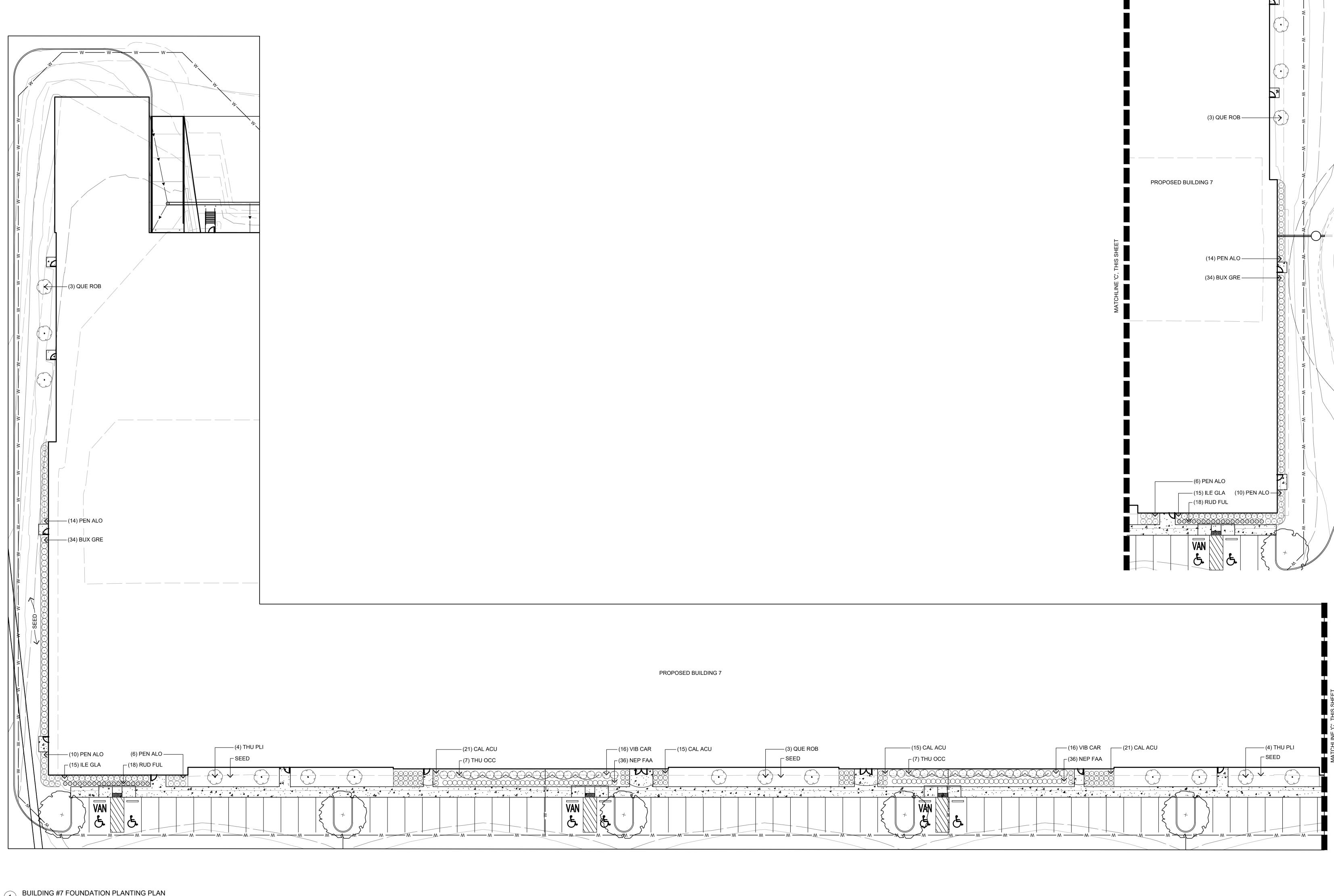






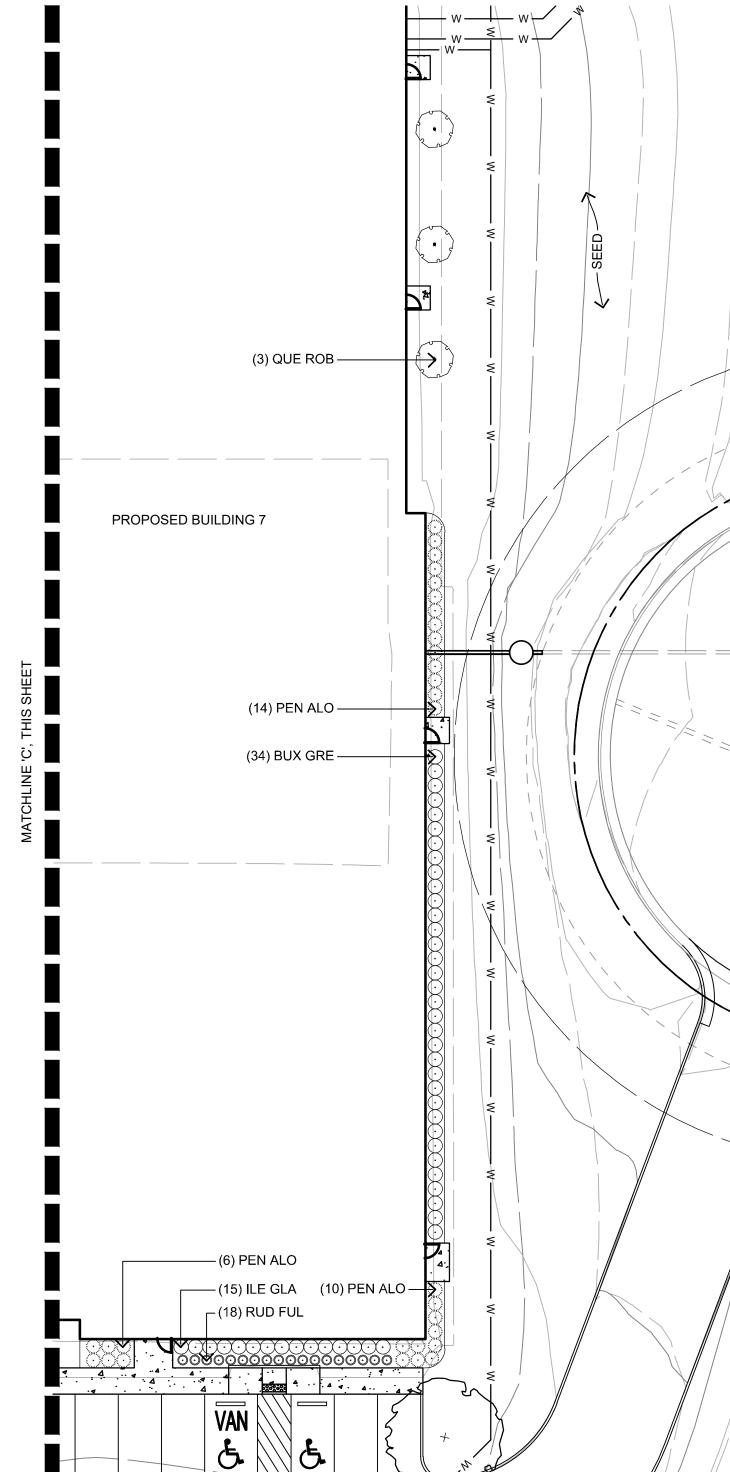


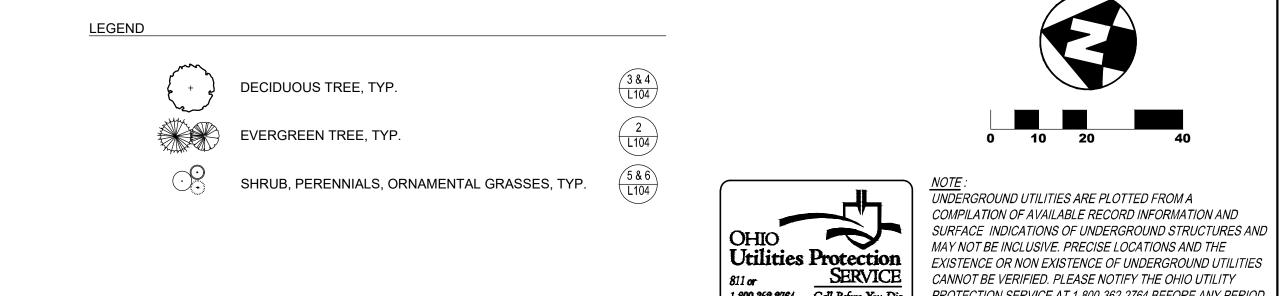




BUILDING #7 FOUNDATION PLANTING PLAN 1 SCALE: 1" = 20'-0"

> PLANTING NOTES 1. REFER TO SHEET L104 FOR PLANT SCHEDULE AND DETAILS.

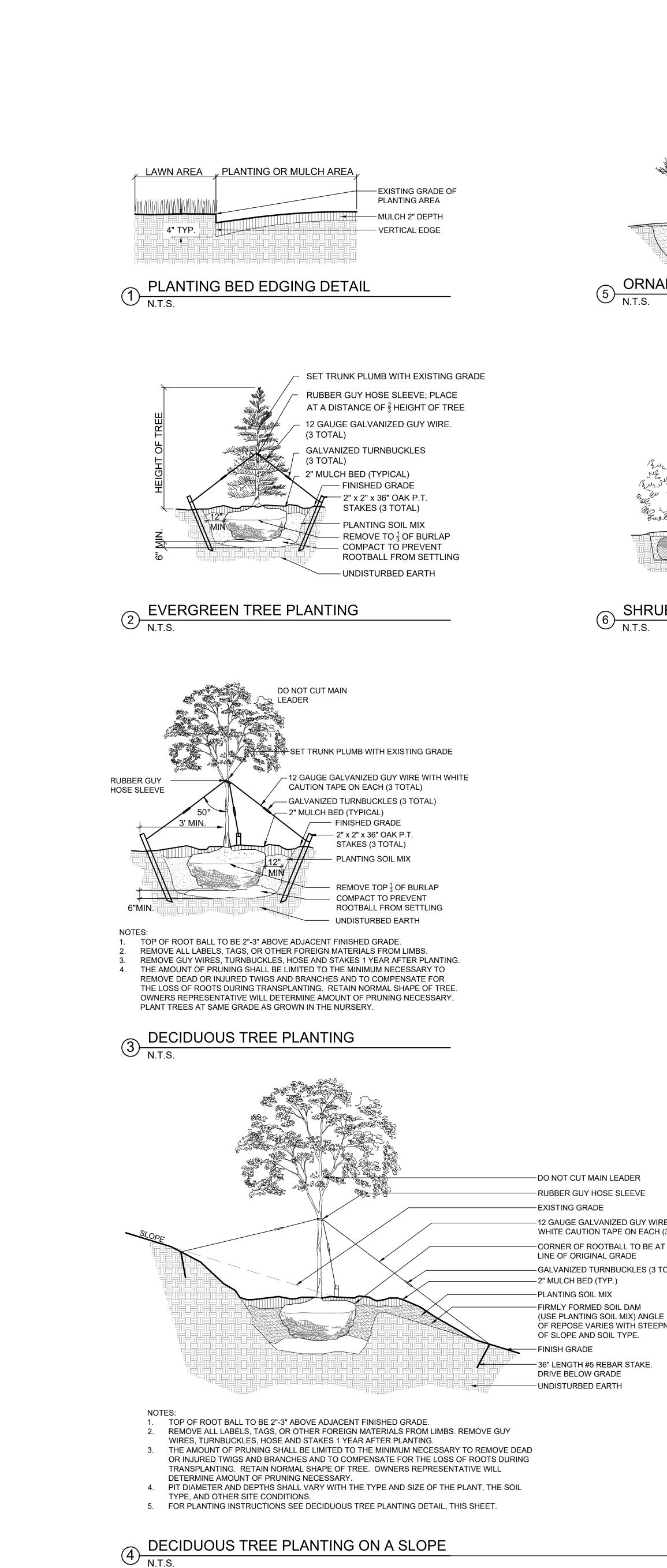


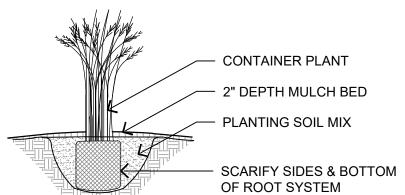




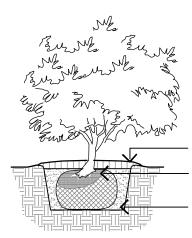
1-800-362-2764 Call Before You Dig PROTECTION SERVICE AT 1-800-362-2764 BEFORE ANY PERIOD OF EXCAVATION OR CONSTRUCTION ACTIVITY.

LANDSCAPE PLAN ENLARGEMENT





5 ORNAMENTAL GRASS / PERENNIAL PLANTING



— 2" DEPTH MULCH BED - REMOVE BURLAP FROM UPPER 1/2 OF ROOTBALL — PLANTING SOIL MIX

TURFGRASS SEED: SEE SPECIFICATIONS

PLANT SCHEDULE

SHRUB PLANTING

(6) N.T.S.

—12 GAUGE GALVANIZED GUY WIRE WITH WHITE CAUTION TAPE ON EACH (3 TOTAL) -CORNER OF ROOTBALL TO BE AT — GALVANIZED TURNBUCKLES (3 TOTAL)

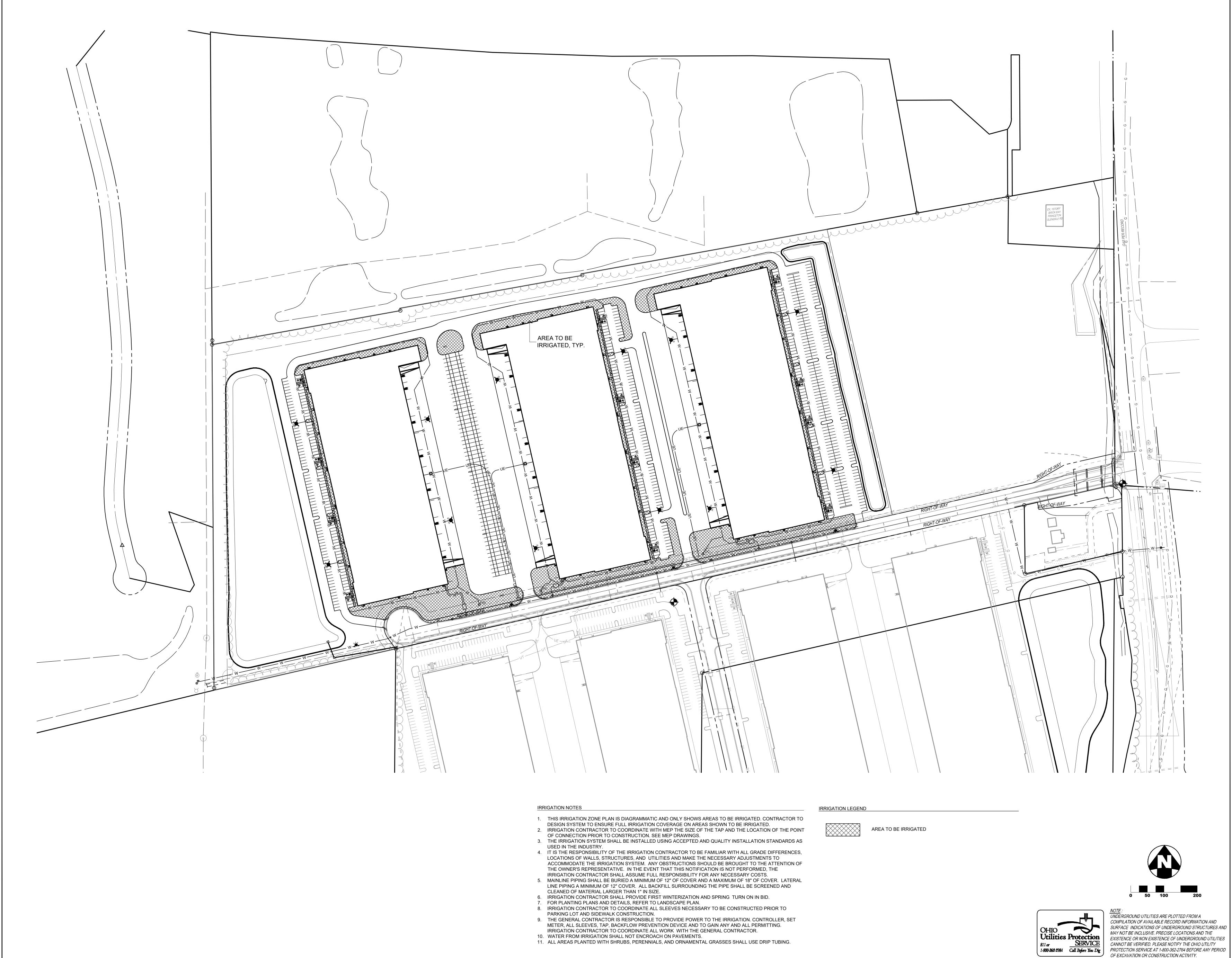
OF REPOSE VARIES WITH STEEPNESS

KEY	COMMON NAME	BOTANICAL NAME	SIZE	ROOT	REMARKS
DECIDUOUS	TREES:		1	1	1
ACE FRE	AUTUMN BLAZE RED MAPLE	ACER X FREEMANII 'JEFFERSRED'	2 CAL. MIN.	B&B	
CRA VIR	WINTER KING HAWTHORN	CRATAEGUS VIRIDIS 'WINTER KING'	2 CAL. MIN.	B&B	10' HT. MIN TREE FORM
AME LAE	CUMULUS SERVICEBERRY	AMELANCHIER LAEVIS 'CUMULUS"	2 CAL. MIN.	B&B	10' HT. MIN MULTI. STEMMED
GIN BIL	AUTUMN GOLD GINKGO	GINKGO BILOBA 'AUTUMN GOLD'	2 CAL. MIN.	B&B	MALE SPECIMENS ONLY
QUE BIC	SWAMP WHITE OAK	QUERCUS BICOLOR	2 CAL. MIN.	B&B	
ULM PAR	LACEBARK ELM	ULMUS PARVIFOLIA	2 CAL. MIN.	B&B	
EVERGREEN	N TREES:				
PIC ABI	NORWAY SPRUCE	PICEA ABIES	7'-8' HT.	B&B	
PIC GLA	BLACK HILLS SPRUCE	PICEA GLAUCA 'DENSATA'	7-8' HT.	B&B	
PIC PUN	COLORADO BLUE SPRUCE	PICEA PUNGENS 'GLAUCA'	7-8' HT.	B&B	
SHRUBS, PE	RENNIALS, & ORNAMENTAL GRASSES:				
BUX GRE	GREEN VELVET BOXWOOD	BUXUS X 'GREEN VELVET'	24" HT. MIN.	B&B	SPACE PER PLAN
CAL ACU	KARL FOERSTER FEATHER REED GRASS	CALAMAGROSTIS ACUTIFLORA 'KARL FOERSTER'	#2	CONT.	SPACE 30" O.C.
LE GLA	SHAMROCK HOLLY	ILEX GLABRA 'SHAMROCK'	24" HT.	CONT.	SPACE 3' O.C.
NEP FAA	WALKER'S LOW CATMINT	NEPETA FAASSENII 'WALKER'S LOW'	#2	CONT.	SPACE 30" O.C.
RUD FUL	LITTLE SUZY BLACK-EYED SUSAN	RUDBECKIA FULGIDA VAR SPECIOSA 'VIETTE'S LITTLE SUZY'	#1	CONT.	SPACE 24" O.C.
THU PLI	VIRESCENS WESTERN ARBORVITAE	THUJA PLICATA 'VIRESCENS'	8' HT. MIN.	B&B	SPACE PER PLAN
THU OCC	DEGROOT'S SPIRE ARBORVITAE	THUJA OCCIDENTALIS 'DEGROOT'S SPIRE	5' HT. MIN.	B&B	SPACE PER PLAN
/IB CAR	KOREAN SPICE VIBURNUM	VIBURNUM CARLESII	24" HT.	CONT.	SPACE 4' O.C.



NOTE . UNDERGROUND UTILITIES ARE PLOTTED FROM A COMPILATION OF AVAILABLE RECORD INFORMATION AND SURFACE INDICATIONS OF UNDERGROUND STRUCTURES AND MAY NOT BE INCLUSIVE. PRECISE LOCATIONS AND THE EXISTENCE OR NON EXISTENCE OF UNDERGROUND UTILITIES CANNOT BE VERIFIED. PLEASE NOTIFY THE OHIO UTILITY 1-800-362-2764 Call Before You Dig PROTECTION SERVICE AT 1-800-362-2764 BEFORE ANY PERIOD OF EXCAVATION OR CONSTRUCTION ACTIVITY.







PLANTING SOIL SPECIFICATION

THE ENGINEER SHALL BE NOTIFIED PRIOR TO BEGINNING PLANTING OPERATIONS.

REFER TO THE OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS (CURRENT EDITION) AND ALL CONSTRUCTION WORK SHALL BE DONE ACCORDING TO SAID SPECIFICATIONS AND IN ACCORDANCE WITH APPLICABLE STANDARDS OF THE GOVERNING AGENCIES. WHEN IN CONFLICT, THE MORE STRINGENT REQUIREMENTS SHALL GOVERN.

SOIL-TESTING LABORATORY QUALIFICATIONS: AN INDEPENDENT LABORATORY OR UNIVERSITY LABORATORY, RECOGNIZED BY THE STATE DEPARTMENT OF AGRICULTURE. WITH THE EXPERIENCE AND CAPABILITY TO CONDUCT THE TESTING INDICATED AND THAT SPECIALIZES IN TYPES OF TESTS TO BE PERFORMED.

SOIL ANALYSIS:

FOR EACH UNAMENDED SOIL TYPE, FURNISH SOIL ANALYSIS AND A WRITTEN REPORT BY A QUALIFIED SOIL-TESTING LABORATORY STATING PERCENTAGES OF ORGANIC MATTER: GRADATION OF SAND, SILT, AND CLAY CONTENT; CATION EXCHANGE CAPACITY; DELETERIOUS MATERIAL: PH: AND MINERAL AND PLANT-NUTRIENT CONTENT OF THE SOIL. TESTING METHODS AND WRITTEN RECOMMENDATIONS SHALL COMPLY WITH USDA'S HANDBOOK NO. 60. THE SOIL-TESTING LABORATORY SHALL OVERSEE SOIL SAMPLING, WITH DEPTH, LOCATION, AND NUMBER OF SAMPLES TO BE TAKEN PER INSTRUCTIONS FROM ARCHITECT. A MINIMUM OF THREE REPRESENTATIVE SAMPLES SHALL BE TAKEN FROM VARIED LOCATIONS FOR EACH SOIL TO BE USED OR AMENDED FOR PLANTING PURPOSES. REPORT SUITABILITY OF TESTED SOIL FOR PLANT AND TURF GROWTH SPECIFIC TO THIS PROJECT. BASED ON THE TEST RESULTS, STATE RECOMMENDATIONS FOR SOIL TREATMENTS AND SOIL AMENDMENTS TO BE INCORPORATED. STATE RECOMMENDATIONS IN WEIGHT PER 1000 SQ. FT. OR VOLUME PER CU. YD. FOR NITROGEN, PHOSPHORUS. AND POTASH NUTRIENTS AND SOIL AMENDMENTS TO BE ADDED TO PRODUCE SATISFACTORY PLANTING SOIL SUITABLE FOR HEALTHY, VIABLE PLANTS. REPORT PRESENCE OF PROBLEM SALTS, MINERALS, OR HEAVY METALS, INCLUDING ALUMINUM, ARSENIC, BARIUM, CADMIUM, CHROMIUM, COBALT, LEAD, LITHIUM, AND VANADIUM. IF SUCH PROBLEM MATERIALS ARE PRESENT, PROVIDE ADDITIONAL RECOMMENDATIONS FOR CORRECTIVE ACTION

PLANTING SOIL:

TOPSOIL STOCKPILED FROM ON-SITE STRIPPING SHALL BE UTILIZED FOR REUSE. AMEND ALL TOPSOIL ON-SITE BY MIXING WITH SAND AND COMPOST TO MANUFACTURE SPECIFIED SOIL MIX. IN THE EVENT THAT THERE IS AN INSUFFICIENT AMOUNT OF ON-SITE TOPSOIL TO COMPLETE THE PROJECT, ADDITIONAL TOPSOIL FROM OFF-SITE SOURCES SHALL BE PROVIDED FOR MIXING WITH SAND AND COMPOST TO MANUFACTURE THE SPECIFIED SOIL MIX. ANY AMENDMENTS USED TO MANUFACTURE A SOIL TO BE IMPORTED SHALL MEET THE SPECIFICATIONS DEFINED BELOW.

AMENDED TOPSOIL:

SAND:

THE ON-SITE SOIL OR ANY IMPORTED TOPSOIL SHALL BE AMENDED WITH THE SPECIFIED SAND OR COMPOST TO PRODUCE A SOIL MEETING THE FOLLOWING CRITERION, AS DETERMINED BY ASTM F1632 OR

1. SAND: (0.05 TO 2.0 MM) 65% - 75% WITH AT LEAST 50% OF THE TOTAL SAND FALLING INTO THE MEDIUM AND COARSE SAND FRACTIONS AND NO MORE THAN 25% OF THE TOTAL SAND IN THE FIN AND VERY FINE SAND FRACTIONS. 2. SILT: (0.002 TO 0.05 MM) 15% - 25%

3. CLAY: (<0.002 MM) 5% - 15% 4. GRAVEL: (>2.0 MM) <15% MAXIMUM SIZE SHALL BE THREE EIGHTS (3/8") INCHES LARGEST DIAMETER

THE AMENDED SOIL SHALL HAVE AN ORGANIC MATTER CONTENT OF 5 TO 6% (BY WEIGHT) AS DETERMINED BY ASTM F1647. FOR BIDDING PURPOSES, THE AMOUNT OF COMPOST REQUIRED TO INCREASE THE ORGANIC MATTER CONTENT TO MEET THE SPECIFICATIONS CAN RANGE FROM 30 TO 50% BY VOLUME, DEPENDING ON THE QUALITY OF THE COMPOST.

RATIO OF THE PARTICLE SIZE FOR 80% PASSING (D80) TO THE PARTICLE SIZE FOR 30% PASSING (D30) SHALL BE 5.5 OR LESS (D80/D30 <8).

THE AMENDED SOIL SHALL HAVE A MINIMUM PERCOLATION RATE OF 0.50-INCH PER HOUR WITH THE SOIL COMPACTED TO 88% OF MAXIMUM STANDARD PROCTOR DENSITY (ASTM D698).

THE PLANTING SOIL MEETING THIS SPECIFICATION SHALL SERVE AS THE BASELINE FOR SUBSEQUENT QUALITY CONTROL TESTING. SAMPLES SHALL BE TAKEN EVERY 1000 YARDS FOR CONFORMITY TO THE SPECIFICATIONS. QUALITY CONTROL TESTING SHALL INCLUDE ORGANIC MATTER CONTENT AND PARTICLE SIZE ANALYSIS.

THE FINAL SOIL MIX SHALL BE SUBMITTED TO TESTING AGENCY TO DETERMINE THE FERTILITY STATUS OF THE SOIL

SAND SHALL BE BLENDED INTO THE TOPSOIL IN THE PROPER AMOUNT TO ACHIEVE THE PARTICLE SIZE DISTRIBUTION DESCRIBED IN THESE SPECIFICATIONS. SAND FOR USE AS A SOIL AMENDMENT SHALL BE WASHED NATURAL OR CLASSIFIED SAND MEETING THE FOLLOWING PARTICLE SIZE DISTRIBUTION AS DETERMINED BY ASTM C-136 OR F1632. IN ADDITION, THE SAND SHALL HAVE A COEFFICIENT OF UNIFORMITY (D60/D10) OF LESS THAN 4.0.

	SIEVE	SIEVE SIZE	% PASSIN
NO.	4	4.75 MM	100%
NO.	8	2.38 MM	90 - 100%
NO.	16	1.19 MM	80 - 100%
NO.	30	0.60 MM	25 - 60%
NO.	50	0.30 MM	0 - 25%
NO.	100	0.15 MM	0 - 5%
NO.	270	0.075 MM	0 - 3%

PLANTING SOIL MAY BE ALTERED, UPON APPROVAL OF THE ENGINEER, BY ADDING APPROVED CONDITIONERS. CONDITIONERS SHALL CONFORM TO ODOT ITEM 653 AS DETERMINED BY THE ENGINEER.

MIXING PLANTING SOIL: SOIL ADDITIVES SHALL BE THOROUGHLY INCORPORATED INTO PLANTING SOIL BY HARROWING OR OTHER METHODS STANDARD TO THE INDUSTRY. CORRECT DEFICIENCIES IN SOIL AS DIRECTED BY HORTICULTURAL SOIL TEST RESULTS. THOROUGHLY INCORPORATE AMENDMENTS INTO PLANTING MIXTURE TO ENSURE EVEN DISTRIBUTION.

PREPARATION OF THE SUBGRADE IN LANDSCAPE AREAS:

PRIOR TO THE PLACEMENT OF PLANTING SOIL AND THE ESTABLISHMENT OF THE FINISHED GRADE, THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER TO INSPECT THE SUBGRADE FOR SUITABILITY FOR PLANTING. IF SUBSURFACE BEDROCK, SHALE, OR OTHER OBSTRUCTIONS ARE ENCOUNTERED IN THE SUBGRADE, THE ENGINEER MAY SELECT ALTERNATE LOCATIONS FOR PLANT PLACEMENTS. WHERE LOCATIONS CANNOT BE CHANGED, THE UNSUITABLE MATERIAL OR OBSTRUCTION SHALL BE REMOVED TO A DEPTH, NO LESS, THAN 6" BELOW BOTTOM OF THE ROOT BALL WHEN THE PLANT IS PROPERLY SET AT THE REQUIRED GRADE. THE ADDITIONAL EXCAVATION SHALL BE FILLED WITH A SUITABLE CLEAN SOIL MATERIAL FREE OF ROCK AND CONSTRUCTION DEBRIS AND SUITABLE FOR THE PLANTING SUBGRADE AS DETERMINED BY THE ENGINEER.

PLANTING SOIL PLACEMENT: PLACE PLANTING SOIL IN TWO LIFTS. PLACE THE FIRST LIFT TO A DEPTH OF 2 INCHES AND HARROW OR TILL THE LOAM INTO THE UNDERLYING SUBSOIL TO A DEPTH OF 2 INCHES, CREATING A BLENDED INTERFACE OF LOAM AND SUBSOIL APPROXIMATELY 4 INCHES DEEP. THE CONTRACTOR SHALL INSTALL PLANTING SOIL IN SUCCESSIVE HORIZONTAL LIFTS NO THICKER THAN 6 INCHES IN TURF AREAS AND 12 INCHES IN PLANT BED AREAS TO THE DESIRE COMPACTION AS DESCRIBED HEREIN. THE CONTRACTOR SHALL INSTALL THE SOIL AT A HIGHER LEVEL TO ANTICIPATE ANY REDUCTION OF PLANTING SOIL VOLUME DUE TO COMPACTION, SETTLING, EROSION, DECOMPOSITION, AND OTHER SIMILAR PROCESSES DURING THE WARRANTY PERIOD.

PLANTING SOIL DEPTHS:

LARGE CANOPY TREES AND EVERGREENS: SINGLE TREES: TREES IN GROUPS OF 2 OR MORE:

500 CUBIC FEET PER TREE 350 CUBIC FEET PER TREE

FLOWERING AND ORNAMENTAL TRESS: SINGLE TREES: TREES IN GROUPS OF 2 OR MORE:

300 CUBIC FEET PER TREE 200 CUBIC FEET PER TREE

PLANTING SOIL SHALL BE PLACED TO A DEPTH OF 12 INCHES IN ALL PLANTING BEDS CONTAINING SHRUBS, PERENNIALS, ORNAMENTAL GRASSES AND GROUNDCOVER. PLANTING SOIL SHALL BE A MINIMUM OF 6 INCHES IN DEPTH IN ALL TURF GRASS AREAS.

PREPARATION OF FINISHED GRADE:

THE PREPARATION OF PLANTING AREAS MAY BEGIN PRIOR TO THE SPECIFIED PLANTING SEASON PROVIDED THE FINISHED GRADE HAS BEEN ESTABLISHED AND APPROVED BY THE ENGINEER, AND PROVIDED THAT IN THE JUDGEMENT OF THE ENGINEER. THE GENERAL CONSTRUCTION WORK IS SUFFICIENTLY ADVANCED.

TURF AND GRASSES SPECIFICATION

DEFINITIONS

- VIRUSES.
- OR THE TOP SURFACE OF A FILL OR BACKFILL BEFORE PLANTING SOIL IS PLACED.

SUBMITTALS

- 1. QUALIFICATION DATA: FOR LANDSCAPE INSTALLER.
- PRODUCTION AND DATE OF PACKAGING.
- AND NAME AND TELEPHONE NUMBER OF SUPPLIER.
- SPECIFIC TO PROJECT. OF TURF DURING A CALENDAR YEAR. SUBMIT BEFORE EXPIRATION OF REQUIRED MAINTENANCE

PERIODS.

QUALITY ASSURANCE SUCCESSFUL TURF ESTABLISHMENT.

- b. LANDSCAPE INDUSTRY CERTIFIED LAWNCARE MANAGER.

DELIVERY, STORAGE, AND HANDLING SEED AND OTHER PACKAGED MATERIALS: DELIVER PACKAGED MATERIALS IN ORIGINAL, UNOPENED CONTAINERS SHOWING WEIGHT, CERTIFIED ANALYSIS, NAME AND ADDRESS OF MANUFACTURER, AND INDICATION OF COMPLIANCE WITH STATE AND FEDERAL LAWS, AS APPLICABLE.

BULK MATERIALS:

- OR ON EXISTING TURF AREAS OR PLANTS.
- FIELD CONDITIONS

SUBSTANTIAL COMPLETION. 1. SPRING PLANTING: MARCH 15 TO JUNE 1. 2. FALL PLANTING: AUGUST 15 TO OCTOBER 15.

WEATHER LIMITATIONS: PROCEED WITH PLANTING ONLY WHEN EXISTING AND FORECASTED WEATHER CONDITIONS PERMIT PLANTING TO BE PERFORMED WHEN BENEFICIAL AND OPTIMUM RESULTS MAY BE OBTAINED. APPLY PRODUCTS DURING FAVORABLE WEATHER CONDITIONS ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.

TURFGRASS SPECIES: SEED OF GRASS SPECIES AS FOLLOWS, WITH NOT LESS THAN 95 PERCENT GERMINATION, NOT LESS THAN 100 PERCENT PURE SEED, AND COMPLETELY FREE OF NOXIOUS WEEDS AND GRASSES. THE MIXTURE SHALL BE AS FOLLOWS OR AN APPROVED EQUAL: (MIXTURE SHALL RATE IN NTEP'S TOP TEN. CONTRACTOR TO PROVIDE INFORMATION ON GRASS SEED STATING IT MEETS NTEP'S TOP TEN LIST)

1. 80-90 PERCENT TURF-TYPE TALL FESCUE, MINIMUM 3 VARIETIES (15 PERCENT MINIMUM FOR ANY VARIETY). 2. 10-20 PERCENT KENTUCKY BLUEGRASS.

FERTILIZERS

- 1. COMMERCIAL FERTILIZER: COMMERCIAL-GRADE COMPLETE FERTILIZER OF NEUTRAL CHARACTER, CONSISTING OF QUICK RELEASE NITROGEN SOURCE, PHOSPHATE, AND POTASH. APPLY NITROGEN, PHOSPHATE AND POTASH IN THE AMOUNTS RECOMMENDED IN THE SOIL REPORTS FROM A QUALIFIED
- TESTING AGENCY. 2. SLOW-RELEASE FERTILIZER: GRANULAR FERTILIZER CONSISTING OF A MINIMUM OF 50 PERCENT WATER-INSOLUBLE NITROGEN OR COATED NITROGEN SOURCE, PHOSPHATE, AND POTASH. APPLY NITROGEN, PHOSPHATE AND POTASH IN THE AMOUNTS RECOMMENDED IN THE SOIL REPORTS FROM A QUALIFIED TESTING AGENCY.

MULCHES

- 1. FIBER MULCH: BIODEGRADABLE, DYED-WOOD, CELLULOSE-FIBER MULCH: NONTOXIC AND FREE OF PLANT-GROWTH OR GERMINATION INHIBITORS; WITH A MAXIMUM MOISTURE CONTENT OF 15 PERCENT AND A PH RANGE OF 4.5 TO 6.5.
- 2. NONASPHALTIC TACKIFIER: COLLOIDAL TACKIFIER RECOMMENDED BY FIBER-MULCH MANUFACTURER FOR SLURRY APPLICATION; NONTOXIC AND FREE OF PLANT-GROWTH OR GERMINATION INHIBITORS.
- 3. STRAW MULCH: PROVIDE AIR-DRY, CLEAN, MILDEW AND SEED-FREE, SALT HAY OR THRESHED STRAW OF WHEAT, RYE, OATS, OR BARLEY.

PESTICIDES 1. GENERAL: PESTICIDE, REGISTERED AND APPROVED BY THE EPA, ACCEPTABLE TO AUTHORITIES HAVING

- JURISDICTION, AND OF TYPE RECOMMENDED BY MANUFACTURER FOR EACH SPECIFIC PROBLEM AND AS REQUIRED FOR PROJECT CONDITIONS AND APPLICATION. DO NOT USE RESTRICTED PESTICIDES
- UNLESS AUTHORIZED IN WRITING BY AUTHORITIES HAVING JURISDICTION. 2. PRE-EMERGENT HERBICIDE (SELECTIVE AND NONSELECTIVE); EFFECTIVE FOR CONTROLLING THE GERMINATION OR GROWTH OF WEEDS WITHIN PLANTED AREAS AT THE SOIL LEVEL DIRECTLY BELOW
- THE MULCH LAYER. 3. POST-EMERGENT HERBICIDE (SELECTIVE AND NONSELECTIVE): EFFECTIVE FOR CONTROLLING WEED GROWTH THAT HAS ALREADY GERMINATED.
- EROSION-CONTROL MATERIALS
- 1. EROSION-CONTROL BLANKETS: BIODEGRADABLE WOOD EXCELSIOR, STRAW, OR COCONUT-FIBER MAT ENCLOSED IN A PHOTODEGRADABLE PLASTIC MESH. INCLUDE MANUFACTURER'S RECOMMENDED STEEL WIRE STAPLES, 6 INCHES LONG. 2. EROSION-CONTROL FIBER MESH: BIODEGRADABLE BURLAP OR SPUN-COIR MESH, A MINIMUM OF 0.92
- LB/SQ. YD., WITH 50 TO 65 PERCENT OPEN AREA. INCLUDE MANUFACTURER'S RECOMMENDED STEEL WIRE STAPLES, 6 INCHES LONG. SEEDING

1. SOW SEED WITH SPREADER OR SEEDING MACHINE. DO NOT BROADCAST OR DROP SEED WHEN WIND VELOCITY EXCEEDS 5 MPH. a. EVENLY DISTRIBUTE SEED BY SOWING EQUAL QUANTITIES IN TWO DIRECTIONS AT RIGHT ANGLES TO

- EACH OTHER. b. DO NOT USE WET SEED OR SEED THAT IS MOLDY OR OTHERWISE DAMAGED. c. DO NOT SEED AGAINST EXISTING TREES, LIMIT EXTENT OF SEED TO OUTSIDE EDGE OF PLANTING
- SAUCER. 2. SOW SEED AT A TOTAL RATE OF 6 TO 8 LB/1000 SQ, FT.
- 3. RAKE SEED LIGHTLY INTO TOP 1/8 INCH OF SOIL, ROLL LIGHTLY, AND WATER WITH FINE SPRAY 4. PROTECT SEEDED AREAS WITH SLOPES EXCEEDING 1:4 WITH EROSION-CONTROL BLANKETS AND 1:6 WITH EROSION-CONTROL FIBER MESH INSTALLED AND STAPLED ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.
- 5. PROTECT SEEDED AREAS WITH SLOPES NOT EXCEEDING 1:6 BY SPREADING STRAW MULCH. SPREAD UNIFORMLY AT A MINIMUM RATE OF 2 TONS/ACRE TO FORM A CONTINUOUS BLANKET 1-1/2 INCHES IN LOOSE THICKNESS OVER SEEDED AREAS. SPREAD BY HAND, BLOWER, OR OTHER SUITABLE EQUIPMENT. a. ANCHOR STRAW MULCH BY CRIMPING INTO SOIL WITH SUITABLE MECHANICAL EQUIPMENT.
- 6. OVERSEED TURF AREA EIGHT (8) WEEKS AFTER INITIAL SEEDING OPERATION AT A RATE OF 5 LBS/1000 SQ. FT., IF INITIAL SEEDING HAS NOT PROVIDED A MINIMUM OF 90% COVERAGE OVER ANY 10 SQ. FT., OR IF BARE AREAS GREATER THE 3 BY 3 INCHES ARE PRESENT.
- HYDROSEEDING: MIX SPECIFIED SEED. COMMERCIAL FERTILIZER. AND FIBER MULCH IN WATER. USING EQUIPMENT SPECIFICALLY DESIGNED FOR HYDROSEED APPLICATION. CONTINUE MIXING UNTIL UNIFORMLY BLENDED INTO HOMOGENEOUS SLURRY SUITABLE FOR HYDRAULIC APPLICATION.
- 1. MIX SLURRY WITH NONASPHALTIC TACKIFIER. 2. SPRAY-APPLY SLURRY UNIFORMLY TO ALL AREAS TO BE SEEDED IN A TWO-STEP PROCESS. APPLY
- FIRST SLURRY COAT AT A RATE SO THAT MULCH COMPONENT IS DEPOSITED AT NOT LESS THAN 500-LB/ACRE DRY WEIGHT, AND SEED COMPONENT IS DEPOSITED AT NOT LESS THAN THE SPECIFIED

1. FINISH GRADE: ELEVATION OF FINISHED SURFACE OF PLANTING SOIL. 2. PESTICIDE: A SUBSTANCE OR MIXTURE INTENDED FOR PREVENTING. DESTROYING. REPELLING. OR MITIGATING A PEST. PESTICIDES INCLUDE INSECTICIDES, MITICIDES, HERBICIDES, FUNGICIDES, RODENTICIDES, AND MOLLUSCICIDES. THEY ALSO INCLUDES SUBSTANCES OR MIXTURES INTENDED FOR USE AS A PLANT REGULATOR, DEFOLIANT, OR DESICCANT. 3. PESTS: LIVING ORGANISMS THAT OCCUR WHERE THEY ARE NOT DESIRED OR THAT CAUSE DAMAGE TO PLANTS, ANIMALS, OR PEOPLE. PESTS INCLUDE INSECTS, MITES, GRUBS, MOLLUSKS (SNAILS AND SLUGS), RODENTS (GOPHERS, MOLES, AND MICE), UNWANTED PLANTS (WEEDS), FUNGI, BACTERIA, AND 4. PLANTING SOIL: EXISTING, ON-SITE SOIL; IMPORTED SOIL; OR MANUFACTURED SOIL THAT HAS BEEN MODIFIED WITH SOIL AMENDMENTS AND PERHAPS FERTILIZERS TO PRODUCE A SOIL MIXTURE BEST FOR PLANT GROWTH. SEE PLANTING SOIL SPECIFICATION. 5. SUBGRADE: THE SURFACE OR ELEVATION OF SUBSOIL REMAINING AFTER EXCAVATION IS COMPLETE, 1000 LB/ACRE.

WITHIN A PLANTING AREA.

WITH NEW PLANTING SOIL.

AFFECTING INSTALLATION AND PERFORMANCE OF THE WORK.

AND PLANTINGS FROM DAMAGE CAUSED BY PLANTING OPERATIONS.

3. PROTECT GRADE STAKES SET BY OTHERS UNTIL DIRECTED TO REMOVE THEM.

AREAS IF ERODED OR OTHERWISE DISTURBED AFTER FINISH GRADING.

IF ERODED OR OTHERWISE DISTURBED AFTER FINISH GRADING.

SURFACE TO DRY BEFORE PLANTING. DO NOT CREATE MUDDY SOIL.

MULCH AND ANCHOR AS REQUIRED TO PREVENT DISPLACEMENT.

AND SUBSEQUENT MOWINGS TO MAINTAIN THE FOLLOWING GRASS HEIGHT:

RATE TO PROVIDE ACTUAL NITROGEN OF 1 LB/1000 SQ. FT. TO TURF AREA.

AND DEBRIS, AND LEGALLY DISPOSE OF THEM OFF OWNER'S PROPERTY.

MAINTENANCE PERIOD AND REMOVE AFTER PLANTINGS ARE ESTABLISHED.

1. SEEDED TURF: 90 DAYS FROM DATE OF SUBSTANTIAL COMPLETION.

PREPARATION FOR EROSION-CONTROL MATERIALS

1. PREPARE AREA AS SPECIFIED ABOVE.

OF PESTICIDES AND REDUCE HAZARDS.

BY MATERIAL MANUFACTURER.

TURF MAINTENANCE

PLANTED AREAS.

SATISFACTORY TURF

PESTICIDE APPLICATION

CLEANUP AND PROTECTION

MAINTENANCE SERVICE

LESS THAN THE FOLLOWING PERIODS:

AREAS

PRECIPITATION IS ADEQUATE.

1. MOW TURF TO A HEIGHT OF 2 TO 3 INCHES.

AND SURFACE IRREGULARITIES.

CONTINUE MAINTENANCE UNTIL TURF IS SATISFACTORY.

INSTALLATION.

EXAMINATION

PREPARATION

WALKWAYS.

SPECIFICATION.

TURF AREA PREPARATION

PREINSTALLATION MEETINGS: PREINSTALLATION CONFERENCE: CONDUCT CONFERENCE AT PROJECT SITE.

2. CERTIFICATION OF GRASS SEED: FROM SEED VENDOR FOR EACH GRASS-SEED MONOSTAND OR MIXTURE, STATING THE BOTANICAL AND COMMON NAME, PERCENTAGE BY WEIGHT OF EACH SPECIES AND VARIETY, AND PERCENTAGE OF PURITY, GERMINATION, AND WEED SEED. INCLUDE THE YEAR OF 3. CERTIFICATION OF EACH SEED MIXTURE FOR TURFGRASS SOD. INCLUDE IDENTIFICATION OF SOURCE

4. PRODUCT CERTIFICATES: FOR FERTILIZERS, FROM MANUFACTURER. 5. PESTICIDES AND HERBICIDES: PRODUCT LABEL AND MANUFACTURER'S APPLICATION INSTRUCTIONS 6. MAINTENANCE DATA: RECOMMENDED PROCEDURES TO BE ESTABLISHED BY OWNER FOR MAINTENANCE

INSTALLER QUALIFICATIONS: A QUALIFIED LANDSCAPE INSTALLER WHOSE WORK HAS RESULTED IN 1. PROFESSIONAL MEMBERSHIP: INSTALLER SHALL BE A MEMBER IN GOOD STANDING OF EITHER THE

PROFESSIONAL LANDCARE NETWORK OR THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION. 2. EXPERIENCE: FIVE YEARS' EXPERIENCE IN TURF INSTALLATION. 3. INSTALLER'S FIELD SUPERVISION: REQUIRE INSTALLER TO MAINTAIN AN EXPERIENCED FULL-TIME

SUPERVISOR ON PROJECT SITE WHEN WORK IS IN PROGRESS. 4. PERSONNEL CERTIFICATIONS: INSTALLER'S FIELD SUPERVISOR SHALL HAVE CERTIFICATION IN ALL OF THE FOLLOWING CATEGORIES FROM THE PROFESSIONAL LANDCARE NETWORK: a. LANDSCAPE INDUSTRY CERTIFIED TECHNICIAN - EXTERIOR.

c. LANDSCAPE INDUSTRY CERTIFIED LAWNCARE TECHNICIAN.

5. PESTICIDE APPLICATOR: STATE LICENSED, COMMERCIAL.

1. DO NOT DUMP OR STORE BULK MATERIALS NEAR STRUCTURES, UTILITIES, WALKWAYS AND PAVEMENTS, 2. PROVIDE EROSION-CONTROL MEASURES TO PREVENT EROSION OR DISPLACEMENT OF BULK MATERIALS; DISCHARGE OF SOIL-BEARING WATER RUNOFF; AND AIRBORNE DUST REACHING ADJACENT PROPERTIES, WATER CONVEYANCE SYSTEMS, OR WALKWAYS. 3. ACCOMPANY EACH DELIVERY OF BULK MATERIALS WITH APPROPRIATE CERTIFICATES.

PLANTING RESTRICTIONS: PLANT DURING ONE OF THE FOLLOWING PERIODS. COORDINATE PLANTING PERIODS WITH INITIAL MAINTENANCE PERIODS TO PROVIDE REQUIRED MAINTENANCE FROM DATE OF

SEED-SOWING RATE. APPLY SLURRY COVER COAT OF FIBER MULCH (HYDROMULCHING) AT A RATE OF

EXAMINE AREAS TO BE PLANTED FOR COMPLIANCE WITH REQUIREMENTS AND OTHER CONDITIONS

1. VERIFY THAT NO FOREIGN OR DELETERIOUS MATERIAL OR LIQUID SUCH AS PAINT, PAINT WASHOUT, CONCRETE SLURRY, CONCRETE LAYERS OR CHUNKS, CEMENT, PLASTER, OILS, GASOLINE, DIESEL FUEL, PAINT THINNER, TURPENTINE, TAR, ROOFING COMPOUND, OR ACID HAS BEEN DEPOSITED IN SOIL

2. SUSPEND PLANTING OPERATIONS DURING PERIODS OF EXCESSIVE SOIL MOISTURE UNTIL THE MOISTURE CONTENT REACHES ACCEPTABLE LEVELS TO ATTAIN THE REQUIRED RESULTS. 3. UNIFORMLY MOISTEN EXCESSIVELY DRY SOIL THAT IS NOT WORKABLE OR WHICH IS DUSTY.

PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED. 5. IF CONTAMINATION BY FOREIGN OR DELETERIOUS MATERIAL OR LIQUID IS PRESENT IN SOIL WITHIN A PLANTING AREA, REMOVE THE SOIL AND CONTAMINATION AS DIRECTED BY ARCHITECT AND REPLACE

1. PROTECT STRUCTURES: UTILITIES: SIDEWALKS: PAVEMENTS: AND OTHER FACILITIES. TREES. SHRUBS.

PROTECT ADJACENT AND ADJOINING AREAS FROM HYDROSEEDING AND HYDROMULCHING OVERSPRAY. 4. INSTALL EROSION-CONTROL MEASURES TO PREVENT EROSION OR DISPLACEMENT OF SOILS AND

DISCHARGE OF SOIL-BEARING WATER RUNOFF OR AIRBORNE DUST TO ADJACENT PROPERTIES AND

GENERAL: PREPARE PLANTING AREA FOR SOIL PLACEMENT AND MIX PLANTING SOIL PER "PLANTING SOIL"

 PLACING PLANTING SOIL: PLACE AND MIX PLANTING SOIL PER "PLANTING SOIL" SPECIFICATION. 2. GRADE PLANTING AREAS TO A SMOOTH, UNIFORM SURFACE PLANE WITH LOOSE, UNIFORMLY FINE TEXTURE. GRADE TO WITHIN PLUS OR MINUS 1/2 INCH OF FINISH ELEVATION. ROLL AND RAKE. REMOVE RIDGES, AND FILL DEPRESSIONS TO MEET FINISH GRADES. LIMIT FINISH GRADING TO AREAS THAT CAN BE PLANTED IN THE IMMEDIATE FUTURE. MOISTEN PREPARED AREA BEFORE PLANTING IF SOIL IS DRY. WATER THOROUGHLY AND ALLOW SURFACE TO DRY BEFORE PLANTING. DO NOT CREATE MUDDY SOIL. BEFORE PLANTING, OBTAIN FIELD ENGINEER'S ACCEPTANCE OF FINISH GRADING; RESTORE PLANTING

3. BEFORE PLANTING, OBTAIN ARCHITECT'S ACCEPTANCE OF FINISH GRADING; RESTORE PLANTING AREAS

2. FOR EROSION-CONTROL BLANKET OR MESH, INSTALL FROM TOP OF SLOPE, WORKING DOWNWARD, AND AS RECOMMENDED BY MATERIAL MANUFACTURER FOR SITE CONDITIONS. FASTEN AS RECOMMENDED 3. MOISTEN PREPARED AREA BEFORE PLANTING IF SURFACE IS DRY. WATER THOROUGHLY AND ALLOW

GENERAL: MAINTAIN AND ESTABLISH TURF BY WATERING, FERTILIZING, WEEDING, MOWING, TRIMMING,

REPLANTING, AND PERFORMING OTHER OPERATIONS AS REQUIRED TO ESTABLISH HEALTHY, VIABLE TURF. ROLL, REGRADE, AND REPLANT BARE OR ERODED AREAS AND REMULCH TO PRODUCE A UNIFORMLY SMOOTH TURF. PROVIDE MATERIALS AND INSTALLATION THE SAME AS THOSE USED IN THE ORIGINAL 1. FILL IN AS NECESSARY SOIL SUBSIDENCE THAT MAY OCCUR BECAUSE OF SETTLING OR OTHER

PROCESSES. REPLACE MATERIALS AND TURF DAMAGED OR LOST IN AREAS OF SUBSIDENCE. 2. IN AREAS WHERE MULCH HAS BEEN DISTURBED BY WIND OR MAINTENANCE OPERATIONS, ADD NEW 3. APPLY TREATMENTS AS REQUIRED TO KEEP TURF AND SOIL FREE OF PESTS AND PATHOGENS OR

DISEASE. USE INTEGRATED PEST MANAGEMENT PRACTICES WHENEVER POSSIBLE TO MINIMIZE THE USE

WATERING: INSTALL AND MAINTAIN TEMPORARY PIPING, HOSES, AND TURF-WATERING EQUIPMENT TO CONVEY WATER FROM SOURCES AND TO KEEP TURF UNIFORMLY MOIST TO A DEPTH OF 4 INCHES. 1. SCHEDULE WATERING TO PREVENT WILTING, PUDDLING, EROSION, AND DISPLACEMENT OF SEED OR MULCH. LAY OUT TEMPORARY WATERING SYSTEM TO AVOID WALKING OVER MUDDY OR NEWLY

2. WATER TURF WITH FINE SPRAY AT A MINIMUM RATE OF 1 INCH PER WEEK UNLESS RAINFALL

MOW TURF AS SOON AS TOP GROWTH IS TALL ENOUGH TO CUT. REPEAT MOWING TO MAINTAIN SPECIFIED HEIGHT WITHOUT CUTTING MORE THAN ONE-THIRD OF GRASS HEIGHT. REMOVE NO MORE THAN ONE-THIRD OF GRASS-LEAF GROWTH IN INITIAL OR SUBSEQUENT MOWINGS. DO NOT DELAY MOWING UNTIL GRASS BLADES BEND OVER AND BECOME MATTED. DO NOT MOW WHEN GRASS IS WET. SCHEDULE INITIAL

TURF POST-FERTILIZATION: APPLY FERTILIZER AFTER INITIAL MOWING AND WHEN GRASS IS DRY. 1. USE FERTILIZER THAT PROVIDES ACTUAL NITROGEN OF 1 LB/1000 SQ. FT. TO TURF AREA. 2. SECOND APPLICATION FERTILIZER: APPLY SIX (6) WEEKS AFTER SEEDING OPERATIONS. PROVIDE A HIGH NITROGEN SLOW RELEASE FERTILIZER WITH AN ANALYSIS OF 30-3-10 OR SIMILAR. APPLY AT A

TURF INSTALLATIONS SHALL MEET THE FOLLOWING CRITERIA AS DETERMINED BY ARCHITECT:

1. SATISFACTORY SEEDED TURF: AT END OF MAINTENANCE PERIOD, A HEALTHY, WELL-ROOTED, EVEN-COLORED, VIABLE TURF HAS BEEN ESTABLISHED, FREE OF WEEDS, OPEN JOINTS, BARE AREAS,

USE SPECIFIED MATERIALS TO REESTABLISH TURF THAT DOES NOT COMPLY WITH REQUIREMENTS. AND

1. APPLY PESTICIDES AND OTHER CHEMICAL PRODUCTS AND BIOLOGICAL CONTROL AGENTS ACCORDING TO REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION AND MANUFACTURER'S WRITTEN RECOMMENDATIONS. COORDINATE APPLICATIONS WITH OWNER'S OPERATIONS AND OTHERS IN PROXIMITY TO THE WORK. NOTIFY OWNER BEFORE EACH APPLICATION IS PERFORMED. 2. POST-EMERGENT HERBICIDES (SELECTIVE AND NONSELECTIVE): APPLY ONLY AS NECESSARY TO TREAT ALREADY-GERMINATED WEEDS AND ACCORDING TO MANUFACTURER'S WRITTEN RECOMMENDATIONS.

1. PROMPTLY REMOVE SOIL AND DEBRIS CREATED BY TURF WORK FROM PAVED AREAS. CLEAN WHEELS OF VEHICLES BEFORE LEAVING SITE TO AVOID TRACKING SOIL ONTO ROADS, WALKS, OR OTHER PAVED

2. REMOVE SURPLUS SOIL AND WASTE MATERIAL, INCLUDING EXCESS SUBSOIL, UNSUITABLE SOIL, TRASH,

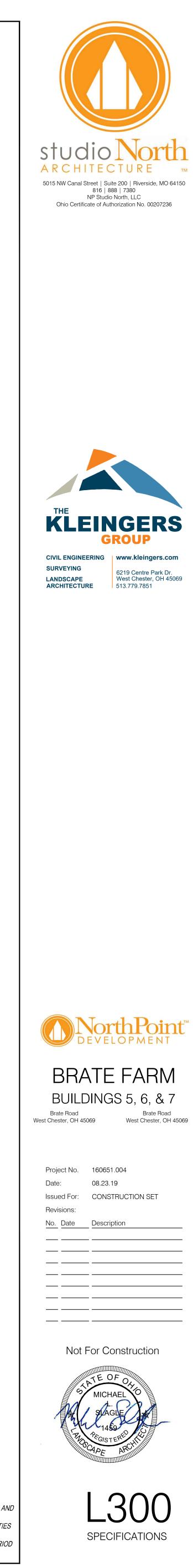
3. ERECT TEMPORARY FENCING OR BARRICADES AND WARNING SIGNS AS REQUIRED TO PROTECT NEWLY PLANTED AREAS FROM TRAFFIC. MAINTAIN FENCING AND BARRICADES THROUGHOUT INITIAL

4. REMOVE NONDEGRADABLE EROSION-CONTROL MEASURES AFTER GRASS ESTABLISHMENT PERIOD.

TURF MAINTENANCE SERVICE: PROVIDE FULL MAINTENANCE BY SKILLED EMPLOYEES OF LANDSCAPE INSTALLER. MAINTAIN AS REQUIRED IN "TURF MAINTENANCE" ARTICLE. BEGIN MAINTENANCE IMMEDIATELY AFTER EACH AREA IS PLANTED AND CONTINUE UNTIL ACCEPTABLE TURF IS ESTABLISHED, BUT FOR NOT



UNDERGROUND UTILITIES ARE PLOTTED FROM A COMPILATION OF AVAILABLE RECORD INFORMATION AND SURFACE INDICATIONS OF UNDERGROUND STRUCTURES AND MAY NOT BE INCLUSIVE. PRECISE LOCATIONS AND THE EXISTENCE OR NON EXISTENCE OF UNDERGROUND UTILITIES CANNOT BE VERIFIED. PLEASE NOTIFY THE OHIO UTILITY PROTECTION SERVICE AT 1-800-362-2764 BEFORE ANY PERIOD OF EXCAVATION OR CONSTRUCTION ACTIVITY.



PLANT SPECIFICATION

DEFINITIONS

- 1. BACKFILL: THE EARTH USED TO REPLACE OR THE ACT OF REPLACING EARTH IN AN EXCAVATION. 2. BALLED AND BURLAPPED STOCK: PLANTS DUG WITH FIRM, NATURAL BALLS OF EARTH IN WHICH THEY WERE GROWN, WITH A BALL SIZE NOT LESS THAN DIAMETER AND DEPTH RECOMMENDED BY ANSI Z60.1 FOR TYPE AND SIZE OF PLANT REQUIRED; WRAPPED WITH BURLAP, TIED, RIGIDLY SUPPORTED, AND DRUM LACED WITH TWINE WITH THE ROOT FLARE VISIBLE AT THE SURFACE OF THE BALL AS
- RECOMMENDED BY ANSI Z60.1. 3. CONTAINER-GROWN STOCK: HEALTHY, VIGOROUS, WELL-ROOTED PLANTS GROWN IN A CONTAINER, WITH A WELL-ESTABLISHED ROOT SYSTEM REACHING SIDES OF CONTAINER AND MAINTAINING A FIRM BALL WHEN REMOVED FROM CONTAINER. CONTAINER SHALL BE RIGID ENOUGH TO HOLD BALL SHAPE AND PROTECT ROOT MASS DURING SHIPPING AND BE SIZED ACCORDING TO ANSI Z60.1 FOR TYPE AND SIZE OF PLANT REQUIRED.
- 4. FINISH GRADE: ELEVATION OF FINISHED SURFACE OF PLANTING SOIL. 5. PESTICIDE: A SUBSTANCE OR MIXTURE INTENDED FOR PREVENTING, DESTROYING, REPELLING, OR MITIGATING A PEST. PESTICIDES INCLUDE INSECTICIDES, MITICIDES, HERBICIDES, FUNGICIDES, RODENTICIDES, AND MOLLUSCICIDES. THEY ALSO INCLUDE SUBSTANCES OR MIXTURES INTENDED FOR USE AS A PLANT REGULATOR, DEFOLIANT, OR DESICCANT. SOME SOURCES CLASSIFY HERBICIDES
- SEPARATELY FROM PESTICIDES. 6. PESTS: LIVING ORGANISMS THAT OCCUR WHERE THEY ARE NOT DESIRED OR THAT CAUSE DAMAGE TO PLANTS, ANIMALS, OR PEOPLE. PESTS INCLUDE INSECTS, MITES, GRUBS, MOLLUSKS (SNAILS AND SLUGS), RODENTS (GOPHERS, MOLES, AND MICE), UNWANTED PLANTS (WEEDS), FUNGI, BACTERIA, AND VIRUSES.
- 7. PLANTING AREA: AREAS TO BE PLANTED. 8. PLANTING SOIL: EXISTING, ON-SITE SOIL; IMPORTED SOIL; OR MANUFACTURED SOIL THAT HAS BEEN MODIFIED WITH SOIL AMENDMENTS AND PERHAPS FERTILIZERS TO PRODUCE A SOIL MIXTURE BEST FOR PLANT GROWTH.
- 9. PLANT; PLANTS; PLANT MATERIAL: THESE TERMS REFER TO VEGETATION IN GENERAL, INCLUDING TREES, SHRUBS, VINES, GROUND COVERS, ORNAMENTAL GRASSES, BULBS, CORMS, TUBERS, OR HERBACEOUS VEGETATION.
- 10.ROOT FLARE: ALSO CALLED "TRUNK FLARE." THE AREA AT THE BASE OF THE PLANT'S STEM OR TRUNK WHERE THE STEM OR TRUNK BROADENS TO FORM ROOTS; THE AREA OF TRANSITION BETWEEN THE ROOT SYSTEM AND THE STEM OR TRUNK.
- 11.STEM GIRDLING ROOTS: ROOTS THAT ENCIRCLE THE STEMS (TRUNKS) OF TREES BELOW THE SOIL SURFACE. 12.SUBGRADE: THE SURFACE OR ELEVATION OF SUBSOIL REMAINING AFTER EXCAVATION IS COMPLETE,
- OR THE TOP SURFACE OF A FILL OR BACKFILL BEFORE PLANTING SOIL IS PLACED.

COORDINATION

- COORDINATION WITH TURF AREAS (LAWNS): PLANT TREES, SHRUBS, AND OTHER PLANTS AFTER FINISH GRADES ARE ESTABLISHED AND BEFORE PLANTING TURF AREAS UNLESS OTHERWISE INDICATED. 1. WHEN PLANTING TREES, SHRUBS, AND OTHER PLANTS AFTER PLANTING TURF AREAS, PROTECT TURF AREAS, AND PROMPTLY REPAIR DAMAGE CAUSED BY PLANTING OPERATIONS.
- PREINSTALLATION CONFERENCE: CONDUCT CONFERENCE AT PROJECT SITE.

ACTION SUBMITTALS

- PRODUCT DATA: FOR EACH TYPE OF PRODUCT. 1. PLANT PHOTOGRAPHS: INCLUDE COLOR PHOTOGRAPHS IN DIGITAL FORMAT OF EACH REQUIRED SPECIES AND SIZE OF PLANT MATERIAL AS IT WILL BE FURNISHED TO PROJECT. TAKE PHOTOGRAPHS FROM AN ANGLE DEPICTING TRUE SIZE AND CONDITION OF THE TYPICAL PLANT TO BE FURNISHED. INCLUDE A SCALE ROD OR OTHER MEASURING DEVICE IN EACH PHOTOGRAPH. FOR SPECIES WHERE MORE THAN 20 PLANTS ARE REQUIRED, INCLUDE A MINIMUM OF THREE PHOTOGRAPHS SHOWING THE AVERAGE PLANT, THE BEST QUALITY PLANT, AND THE WORST QUALITY PLANT TO BE FURNISHED. IDENTIFY EACH PHOTOGRAPH WITH THE FULL SCIENTIFIC NAME OF THE PLANT, PLANT SIZE, AND NAME OF THE GROWING NURSERY.
- 2. SAMPLES FOR VERIFICATION: FOR EACH OF THE FOLLOWING: 1.1. ORGANIC MULCH: 1-QUART VOLUME OF EACH ORGANIC MULCH REQUIRED; IN SEALED PLASTIC BAGS LABELED WITH COMPOSITION OF MATERIALS BY PERCENTAGE OF WEIGHT AND SOURCE OF MULCH. EACH SAMPLE SHALL BE TYPICAL OF THE LOT OF MATERIAL TO BE FURNISHED; PROVIDE AN ACCURATE REPRESENTATION OF COLOR, TEXTURE, AND ORGANIC MAKEUP.

INFORMATIONAL SUBMITTALS

- 1. QUALIFICATION DATA: FOR LANDSCAPE INSTALLER. INCLUDE LIST OF SIMILAR PROJECTS COMPLETED BY INSTALLER DEMONSTRATING INSTALLER'S CAPABILITIES AND EXPERIENCE. INCLUDE PROJECT NAMES, ADDRESSES, AND YEAR COMPLETED, AND INCLUDE NAMES AND ADDRESSES OF OWNERS' CONTACT PERSONS. 2. PRODUCT CERTIFICATES: FOR EACH TYPE OF MANUFACTURED PRODUCT, FROM MANUFACTURER, AND
- COMPLYING WITH THE FOLLOWING: 1.1. MANUFACTURER'S CERTIFIED ANALYSIS OF STANDARD PRODUCTS.
- 1.2. ANALYSIS OF OTHER MATERIALS BY A RECOGNIZED LABORATORY MADE ACCORDING TO METHODS ESTABLISHED BY THE ASSOCIATION OF OFFICIAL ANALYTICAL CHEMISTS, WHERE APPLICABLE. 2. PESTICIDES AND HERBICIDES: PRODUCT LABEL AND MANUFACTURER'S APPLICATION INSTRUCTIONS SPECIFIC TO PROJECT.
- 3. SAMPLE WARRANTY: FOR SPECIAL WARRANTY.
- CLOSEOUT SUBMITTALS 1. MAINTENANCE DATA: RECOMMENDED PROCEDURES TO BE ESTABLISHED BY OWNER FOR MAINTENANCE OF PLANTS DURING A CALENDAR YEAR. SUBMIT BEFORE EXPIRATION OF REQUIRED MAINTENANCE PERIODS.

QUALITY ASSURANCE

INSTALLER QUALIFICATIONS: A QUALIFIED LANDSCAPE INSTALLER WHOSE WORK HAS RESULTED IN SUCCESSFUL ESTABLISHMENT OF PLANTS.

- 1. PROFESSIONAL MEMBERSHIP: INSTALLER SHALL BE A MEMBER IN GOOD STANDING OF EITHER THE PROFESSIONAL LANDCARE NETWORK OR THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION.
- 2. EXPERIENCE: FIVE YEARS' EXPERIENCE IN LANDSCAPE INSTALLATION IN ADDITION TO REQUIREMENTS IN SECTION 014000 "QUALITY REQUIREMENTS." 3. INSTALLER'S FIELD SUPERVISION: REQUIRE INSTALLER TO MAINTAIN AN EXPERIENCED FULL-TIME
- SUPERVISOR ON PROJECT SITE WHEN WORK IS IN PROGRESS. 4. PERSONNEL CERTIFICATIONS: INSTALLER'S FIELD SUPERVISOR SHALL HAVE CERTIFICATION IN ALL OF THE FOLLOWING CATEGORIES FROM THE PROFESSIONAL LANDCARE NETWORK:
- a. LANDSCAPE INDUSTRY CERTIFIED TECHNICIAN EXTERIOR. b. LANDSCAPE INDUSTRY CERTIFIED HORTICULTURAL TECHNICIAN.
- PESTICIDE APPLICATOR: STATE LICENSED, COMMERCIAL.

PROVIDE QUALITY, SIZE, GENUS, SPECIES, AND VARIETY OF PLANTS INDICATED, COMPLYING WITH APPLICABLE REQUIREMENTS IN ANSI Z60.1.

MEASUREMENTS: MEASURE ACCORDING TO ANSI Z60.1. DO NOT PRUNE TO OBTAIN REQUIRED SIZES. 1. TREES AND SHRUBS: MEASURE WITH BRANCHES AND TRUNKS OR CANES IN THEIR NORMAL POSITION. TAKE HEIGHT MEASUREMENTS FROM OR NEAR THE TOP OF THE ROOT FLARE FOR FIELD-GROWN STOCK AND CONTAINER-GROWN STOCK. MEASURE MAIN BODY OF TREE OR SHRUB FOR HEIGHT AND SPREAD; DO NOT MEASURE BRANCHES OR ROOTS TIP TO TIP. TAKE CALIPER MEASUREMENTS 6 INCHES ABOVE THE ROOT FLARE FOR TREES UP TO 4-INCH CALIPER SIZE, AND 12 INCHES ABOVE THE ROOT FLARE FOR

LARGER SIZES. 2. OTHER PLANTS: MEASURE WITH STEMS, PETIOLES, AND FOLIAGE IN THEIR NORMAL POSITION.

PLANT MATERIAL OBSERVATION: ARCHITECT MAY OBSERVE PLANT MATERIAL EITHER AT PLACE OF GROWTH OR AT SITE BEFORE PLANTING FOR COMPLIANCE WITH REQUIREMENTS FOR GENUS, SPECIES, VARIETY, CULTIVAR, SIZE, AND QUALITY, ARCHITECT MAY ALSO OBSERVE TREES AND SHRUBS FURTHER FOR SIZE AND CONDITION OF BALLS AND ROOT SYSTEMS, PESTS, DISEASE SYMPTOMS, INJURIES, AND LATENT DEFECTS AND MAY REJECT UNSATISFACTORY OR DEFECTIVE MATERIAL AT ANY TIME DURING PROGRESS OF WORK. REMOVE REJECTED TREES OR SHRUBS IMMEDIATELY FROM PROJECT SITE. 1. NOTIFY ARCHITECT OF SOURCES OF PLANTING MATERIALS SEVEN DAYS IN ADVANCE OF DELIVERY TO SITE

DELIVERY, STORAGE, AND HANDLING

PACKAGED MATERIALS: DELIVER PACKAGED MATERIALS IN ORIGINAL, UNOPENED CONTAINERS SHOWING WEIGHT, CERTIFIED ANALYSIS, NAME AND ADDRESS OF MANUFACTURER, AND INDICATION OF COMPLIANCE WITH STATE AND FEDERAL LAWS IF APPLICABLE.

BULK MATERIALS:

- 1. DO NOT DUMP OR STORE BULK MATERIALS NEAR STRUCTURES, UTILITIES, WALKWAYS AND PAVEMENTS, OR ON EXISTING TURF AREAS OR PLANTS.
- 2. PROVIDE EROSION-CONTROL MEASURES TO PREVENT EROSION OR DISPLACEMENT OF BULK MATERIALS: DISCHARGE OF SOIL-BEARING WATER RUNOFF: AND AIRBORNE DUST REACHING ADJACENT PROPERTIES, WATER CONVEYANCE SYSTEMS, OR WALKWAYS.
- 3. ACCOMPANY EACH DELIVERY OF BULK MATERIALS WITH APPROPRIATE CERTIFICATES.

DO NOT PRUNE TREES AND SHRUBS BEFORE DELIVERY, PROTECT BARK, BRANCHES, AND ROOT SYSTEMS FROM SUN SCALD, DRYING, WIND BURN, SWEATING, WHIPPING, AND OTHER HANDLING AND TYING DAMAGE. DO NOT BEND OR BIND-TIE TREES OR SHRUBS IN SUCH A MANNER AS TO DESTROY THEIR NATURAL SHAPE. PROVIDE PROTECTIVE COVERING OF PLANTS DURING SHIPPING AND DELIVERY. DO NOT DROP PLANTS DURING DELIVERY AND HANDLING.

HANDLE PLANTING STOCK BY ROOT BALL.

WRAP TREES AND SHRUBS WITH BURLAP FABRIC OVER TRUNKS, BRANCHES, STEMS, TWIGS, AND FOLIAGE TO PROTECT FROM WIND AND OTHER DAMAGE DURING DIGGING, HANDLING, AND TRANSPORTATION.

- DELIVER PLANTS AFTER PREPARATIONS FOR PLANTING HAVE BEEN COMPLETED, AND INSTALL IMMEDIATELY. IF PLANTING IS DELAYED MORE THAN SIX HOURS AFTER DELIVERY. SET PLANTS AND TREES IN THEIR APPROPRIATE ASPECT (SUN, FILTERED SUN, OR SHADE), PROTECT FROM WEATHER AND MECHANICAL DAMAGE, AND KEEP ROOTS MOIST.
- 1. SET BALLED STOCK ON GROUND AND COVER BALL WITH SOIL, PEAT MOSS, SAWDUST, OR OTHER ACCEPTABLE MATERIAL.
- 2. DO NOT REMOVE CONTAINER-GROWN STOCK FROM CONTAINERS BEFORE TIME OF PLANTING. 3. WATER ROOT SYSTEMS OF PLANTS STORED ON-SITE DEEPLY AND THOROUGHLY WITH A FINE-MIST SPRAY. WATER AS OFTEN AS NECESSARY TO MAINTAIN ROOT SYSTEMS IN A MOIST, BUT NOT OVERLY WET CONDITION.

FIELD CONDITIONS

IRRIGATION SYSTEM COMPONENTS, AND DIMENSIONS OF PLANTINGS AND CONSTRUCTION CONTIGUOUS EXCAVATION FOR TREES AND SHRUBS WITH NEW PLANTINGS BY FIELD MEASUREMENTS BEFORE PROCEEDING WITH PLANTING WORK. PLANTING PITS AND TRENCHES: EXCAVATE CIRCULAR PLANTING PITS. 1. EXCAVATE PLANTING PITS WITH SIDES SLOPING INWARD AT A 45-DEGREE ANGLE. EXCAVATIONS WITH PLANTING RESTRICTIONS: PLANT DURING ONE OF THE FOLLOWING PERIODS. COORDINATE PLANTING VERTICAL SIDES ARE UNACCEPTABLE. TRIM PERIMETER OF BOTTOM LEAVING CENTER AREA OF BOTTOM PERIODS WITH MAINTENANCE PERIODS TO PROVIDE REQUIRED MAINTENANCE FROM DATE OF SUBSTANTIAL COMPLETION. 1. SPRING PLANTING: MARCH 15 TO JUNE 1. 2. FALL PLANTING: SEPTEMBER 1 TO NOVEMBER 15.

WEATHER LIMITATIONS: PROCEED WITH PLANTING ONLY WHEN EXISTING AND FORECASTED WEATHER CONDITIONS PERMIT PLANTING TO BE PERFORMED WHEN BENEFICIAL AND OPTIMUM RESULTS MAY BE OBTAINED. APPLY PRODUCTS DURING FAVORABLE WEATHER CONDITIONS ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS AND WARRANTY REQUIREMENTS.

WARRANTY

- SPECIAL WARRANTY: INSTALLER AGREES TO REPAIR OR REPLACE PLANTINGS AND ACCESSORIES THAT FAIL IN MATERIALS, WORKMANSHIP, OR GROWTH WITHIN SPECIFIED WARRANTY PERIOD.

- WEATHERING.
- c. ANNUALS: THREE MONTHS.

REPLACED PLANT MATERIAL. PLANT MATERIAL GENERAL: FURNISH NURSERY-GROWN PLANTS TRUE TO GENUS, SPECIES, VARIETY, CULTIVAR, STEM FORM, SHEARING, AND OTHER FEATURES INDICATED IN PLANT LIST, PLANT SCHEDULE, OR PLANT LEGEND INDICATED ON DRAWINGS AND COMPLYING WITH ANSI Z60.1; AND WITH HEALTHY ROOT SYSTEMS DEVELOPED BY TRANSPLANTING OR ROOT PRUNING. PROVIDE WELL-SHAPED, FULLY BRANCHED, HEALTHY, VIGOROUS STOCK, DENSELY FOLIATED WHEN IN LEAF AND FREE OF DISEASE, PESTS, EGGS, LARVAE, AND DEFECTS SUCH AS KNOTS, SUN SCALD, INJURIES, ABRASIONS, AND DISFIGUREMENT 1. TREES WITH DAMAGED, CROOKED, OR MULTIPLE LEADERS; TIGHT VERTICAL BRANCHES WHERE BARK IS SQUEEZED BETWEEN TWO BRANCHES OR BETWEEN BRANCH AND TRUNK ("INCLUDED BARK");

- ARE UNACCEPTABLE.

ROOT-BALL DEPTH: FURNISH TREES AND SHRUBS WITH ROOT BALLS MEASURED FROM TOP OF ROOT BALL, WHICH BEGINS AT ROOT FLARE ACCORDING TO ANSI Z60.1. ROOT FLARE SHALL BE VISIBLE BEFORE PLANTING.

LABELING: LABEL EACH PLANT OF EACH VARIETY, SIZE, AND CALIPER WITH A SECURELY ATTACHED, WATERPROOF TAG BEARING LEGIBLE DESIGNATION OF COMMON NAME AND FULL SCIENTIFIC NAME, INCLUDING GENUS AND SPECIES. INCLUDE NOMENCLATURE FOR HYBRID, VARIETY, OR CULTIVAR, IF APPLICABLE FOR THE PLANT.

PLANTING.

FERTILIZERS: REFER TO PLANTING SOIL SPECIFICATION. MULCHES

ORGANIC MULCH: FREE FROM DELETERIOUS MATERIALS AND SUITABLE AS A TOP DRESSING OF TREES AND SHRUBS, CONSISTING OF ONE OF THE FOLLOWING: 1. TYPE: DOUBLE-SHREDDED HARDWOOD. 2. SIZE RANGE: 3 INCHES MAXIMUM, 1/2 INCH MINIMUM. 3. COLOR: NATURAL.

PESTICIDES

GENERAL: PESTICIDE REGISTERED AND APPROVED BY THE EPA, ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION, AND OF TYPE RECOMMENDED BY MANUFACTURER FOR EACH SPECIFIC PROBLEM AND AS REQUIRED FOR PROJECT CONDITIONS AND APPLICATION. DO NOT USE RESTRICTED PESTICIDES UNLESS AUTHORIZED IN WRITING BY AUTHORITIES HAVING JURISDICTION.

PLACING PLANTING SOIL: PLACE AND MIX PLANTING SOIL ACCORDING TO PLANTING SOIL SPECIFICATION

PRE-EMERGENT HERBICIDE (SELECTIVE AND NONSELECTIVE): EFFECTIVE FOR CONTROLLING THE GERMINATION OR GROWTH OF WEEDS WITHIN PLANTED AREAS AT THE SOIL LEVEL DIRECTLY BELOW THE MULCH LAYER.

POST-EMERGENT HERBICIDE (SELECTIVE AND NONSELECTIVE): EFFECTIVE FOR CONTROLLING WEED GROWTH THAT HAS ALREADY GERMINATED.

TREE-STABILIZATION MATERIALS

- TRUNK-STABILIZATION MATERIALS:
- 1. UPRIGHT AND GUY STAKES: ROUGH-SAWN, SOUND, NEW HARDWOOD, FREE OF KNOTS, HOLES, CROSS GRAIN, AND OTHER DEFECTS, 2-BY-2-INCH NOMINAL BY LENGTH INDICATED, POINTED AT ONE END.
- 2. FLEXIBLE TIES: WIDE RUBBER OR ELASTIC BANDS OR STRAPS OF LENGTH REQUIRED TO REACH STAKES
- OR TURNBUCKLES.
- 3. GUYS AND TIE WIRES: ASTM A 641/A 641M, CLASS 1, GALVANIZED-STEEL WIRE, TWO-STRAND, TWISTED, 0.106 INCH IN DIAMETER.
- 4. TREE-TIE WEBBING: UV-RESISTANT POLYPROPYLENE OR NYLON WEBBING WITH BRASS GROMMETS. 5. GUY CABLES: FIVE-STRAND, 3/16-INCH-DIAMETER, GALVANIZED-STEEL CABLE, WITH ZINC-COATED
- TURNBUCKLES, A MINIMUM OF 3 INCHES LONG, WITH TWO 3/8-INCH GALVANIZED EYEBOLTS. 6. FLAGS: STANDARD SURVEYOR'S PLASTIC FLAGGING TAPE, WHITE, 6 INCHES LONG.

MISCELLANEOUS PRODUCTS BURLAP: NON-SYNTHETIC, BIODEGRADABLE. TREE GATOR BAG: REFILLABLE, SLOW-RELEASE.

EXAMINATION

- EXAMINE AREAS TO RECEIVE PLANTS. WITH INSTALLER PRESENT. FOR COMPLIANCE WITH REQUIREMENTS. AND CONDITIONS AFFECTING INSTALLATION AND PERFORMANCE OF THE WORK. 1. VERIFY THAT NO FOREIGN OR DELETERIOUS MATERIAL OR LIQUID SUCH AS PAINT. PAINT WASHOUT.
- CONCRETE SLURRY, CONCRETE LAYERS OR CHUNKS, CEMENT, PLASTER, OILS, GASOLINE, DIESEL FUEL, PAINT THINNER, TURPENTINE, TAR, ROOFING COMPOUND, OR ACID HAS BEEN DEPOSITED IN SOIL WITHIN A PLANTING AREA.
- 2. VERIFY THAT PLANTS AND VEHICLES LOADED WITH PLANTS CAN TRAVEL TO PLANTING LOCATIONS WITH ADEQUATE OVERHEAD CLEARANCE.
- 3. SUSPEND PLANTING OPERATIONS DURING PERIODS OF EXCESSIVE SOIL MOISTURE UNTIL THE MOISTURE CONTENT REACHES ACCEPTABLE LEVELS TO ATTAIN THE REQUIRED RESULTS. UNIFORMLY MOISTEN EXCESSIVELY DRY SOIL THAT IS NOT WORKABLE OR WHICH IS DUSTY.
- IF CONTAMINATION BY FOREIGN OR DELETERIOUS MATERIAL OR LIQUID IS PRESENT IN SOIL WITHIN A

PLANTING AREA, REMOVE THE SOIL AND CONTAMINATION AS DIRECTED BY ARCHITECT AND REPLACE WITH NEW PLANTING SOIL

PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

PREPARATION PROTECT STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, AND OTHER FACILITIES AND TURF AREAS AND EXISTING PLANTS FROM DAMAGE CAUSED BY PLANTING OPERATIONS.

INSTALL EROSION-CONTROL MEASURES TO PREVENT EROSION OR DISPLACEMENT OF SOILS AND DISCHARGE OF SOIL-BEARING WATER RUNOFF OR AIRBORNE DUST TO ADJACENT PROPERTIES AND

WALKWAYS. PLANTING AREA ESTABLISHMENT

GENERAL: PREPARE PLANTING AREA FOR SOIL PLACEMENT AND MIX PLANTING SOIL ACCORDING TO

PLANTING SOIL SPECIFICATIONS.

BEFORE PLANTING, OBTAIN ARCHITECT'S ACCEPTANCE OF FINISH GRADING; RESTORE PLANTING AREAS IF ERODED OR OTHERWISE DISTURBED AFTER FINISH GRADING.

- RAISED SLIGHTLY TO SUPPORT ROOT BALL AND ASSIST IN DRAINAGE AWAY FROM CENTER. DO NOT AND CONTAINER-GROWN STOCK.
- THE BOTTOM OF THE ROOT BALL
- FURTHER DISTURB BASE. ENSURE THAT ROOT BALL WILL SIT ON UNDISTURBED BASE SOIL TO PREVENT

- 2. EXCAVATE APPROXIMATELY THREE TIMES AS WIDE AS BALL DIAMETER FOR BALLED AND BURLAPPED
- SETTLING. SCARIFY SIDES OF PLANTING PIT SMEARED OR SMOOTHED DURING EXCAVATION.

- LEVEL AND THOROUGHLY TAMP THE ADDED SOIL TO PREVENT SETTLING.
- 3. DO NOT EXCAVATE DEEPER THAN DEPTH OF THE ROOT BALL, MEASURED FROM THE ROOT FLARE TO 4. IF AREA UNDER THE PLANT WAS INITIALLY DUG TOO DEEP, ADD SOIL TO RAISE IT TO THE CORRECT 5. MAINTAIN ANGLES OF REPOSE OF ADJACENT MATERIALS TO ENSURE STABILITY. DO NOT EXCAVATE
- SUBGRADES OF ADJACENT PAVING, STRUCTURES, HARDSCAPES, OR OTHER NEW OR EXISTING

- IMPROVEMENTS.
- PERSONNEL.
- 6. MAINTAIN SUPERVISION OF EXCAVATIONS DURING WORKING HOURS. 7. KEEP EXCAVATIONS COVERED OR OTHERWISE PROTECTED WHEN UNATTENDED BY INSTALLER'S

SOIL UNLESS OTHERWISE INDICATED.

TREE, SHRUB, AND VINE PLANTING

CLEANLY; DO NOT BREAK.

THE ROOT BALL.

MECHANIZED TREE-SPADE PLANTING

TRANSPORT THE TREE.

SOLID BALL OF EARTH.

TREE STABILIZATION

TREE, SHRUB, AND VINE PRUNING

EQUALLY AROUND TREE.

AND TIGHTEN SECURELY.

GROUND COVER AND PLANT PLANTING

AROUND PLANTS TO HOLD WATER.

EDGING INSTALLATION

PLANT MAINTENANCE

CONTROL AGENTS.

PESTICIDE APPLICATION

APPLY TO SEEDED AREAS.

RECOVERY FROM TRANSPLANTING SHOCK.

BEING USED, WHICHEVER IS SMALLER.

DO NOT APPLY PRUNING PAINT TO WOUNDS.

THAN 3 INCHES IN CALIPER UNLESS OTHERWISE INDICATED.

OR SHRUBS ARE ENCOUNTERED IN EXCAVATIONS.

RETENTION IN TREE OR SHRUB PLANTING PITS.

WITH ROOT FLARE 1 INCH ABOVE ADJACENT FINISH GRADES.

ROOT FLARE 1 INCH ABOVE ADJACENT FINISH GRADES.

1. BACKFILL: PLANTING SOIL PER PLANTING SOIL SPECIFICATION.

4. CUT EXPOSED ROOTS CLEANLY DURING TRANSPLANTING OPERATIONS.

TURNBUCKLE. ALLOW ENOUGH SLACK TO AVOID RIGID RESTRAINT OF TREE.

d. ATTACH FLAGS TO EACH GUY WIRE, 30 INCHES ABOVE FINISH GRADE.

INDICATED ON DRAWINGS IN EVEN ROWS WITH TRIANGULAR SPACING. 2. USE PLANTING SOIL PER PLANTING SOIL SPECIFICATION FOR BACKFILL.

DISTURBS THE ROOT SYSTEM BUT TO A DEPTH NOT LESS THAN TWO NODES.

3. DIG HOLES LARGE ENOUGH TO ALLOW SPREADING OF ROOTS.

PLACE MULCH WITHIN 3 INCHES OF TRUNKS OR STEMS.

NOTIFY OWNER BEFORE EACH APPLICATION IS PERFORMED.

45-DEGREE, 4- TO 6-INCH-DEEP, SHOVEL-CUT EDGE

ESTABLISH HEALTHY, VIABLE PLANTINGS.

1. BACKFILL: PLANTING SOIL PER PLANTING SOIL SPECIFICATION.

4. CONTINUE BACKFILLING PROCESS. WATER AGAIN AFTER PLACING AND TAMPING FINAL LAYER OF SOIL.

- BACKFILL SOIL: SUBSOIL AND TOPSOIL REMOVED FROM EXCAVATIONS MAY NOT BE USED AS BACKFILL

1. FAILURES INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING: a. DEATH AND UNSATISFACTORY GROWTH, EXCEPT FOR DEFECTS RESULTING FROM ABUSE, LACK OF

ADEQUATE MAINTENANCE, OR NEGLECT BY OWNER.

b. STRUCTURAL FAILURES INCLUDING PLANTINGS FALLING OR BLOWING OVER. c. FAULTY PERFORMANCE OF TREE STABILIZATION. d. DETERIORATION OF METALS, METAL FINISHES, AND OTHER MATERIALS BEYOND NORMAL

2. WARRANTY PERIODS: FROM DATE OF SUBSTANTIAL COMPLETION. a. TREES, SHRUBS, VINES, AND ORNAMENTAL GRASSES: 12 MONTHS.

b. GROUND COVERS, BIENNIALS, PERENNIALS, AND OTHER PLANTS: 12 MONTHS.

3. INCLUDE THE FOLLOWING REMEDIAL ACTIONS AS A MINIMUM:

a. IMMEDIATELY REMOVE DEAD PLANTS AND REPLACE UNLESS REQUIRED TO PLANT IN THE SUCCEEDING PLANTING SEASON. b. REPLACE PLANTS THAT ARE MORE THAN 25 PERCENT DEAD OR IN AN UNHEALTHY CONDITION AT END

OF WARRANTY PERIOD. C. A LIMIT OF ONE REPLACEMENT OF EACH PLANT IS REQUIRED EXCEPT FOR LOSSES OR REPLACEMENTS DUE TO FAILURE TO COMPLY WITH REQUIREMENTS. d. PROVIDE EXTENDED WARRANTY FOR PERIOD EQUAL TO ORIGINAL WARRANTY PERIOD, FOR

CROSSING TRUNKS; CUT-OFF LIMBS MORE THAN 3/4 INCH IN DIAMETER; OR WITH STEM GIRDLING ROOTS

2. COLLECTED STOCK: DO NOT USE PLANTS HARVESTED FROM THE WILD, FROM NATIVE STANDS, FROM AN ESTABLISHED LANDSCAPE PLANTING, OR NOT GROWN IN A NURSERY UNLESS OTHERWISE INDICATED.

PROVIDE PLANTS OF SIZES, GRADES, AND BALL OR CONTAINER SIZES COMPLYING WITH ANSI Z60.1 FOR TYPES AND FORM OF PLANTS REQUIRED. PLANTS OF A LARGER SIZE MAY BE USED IF ACCEPTABLE TO ARCHITECT, WITH A PROPORTIONATE INCREASE IN SIZE OF ROOTS OR BALLS.

IF FORMAL ARRANGEMENTS OR CONSECUTIVE ORDER OF PLANTS IS INDICATED ON DRAWINGS, SELECT STOCK FOR UNIFORM HEIGHT AND SPREAD. AND NUMBER THE LABELS TO ASSURE SYMMETRY IN

OBSTRUCTIONS: NOTIFY ARCHITECT IF UNEXPECTED ROCK OR OBSTRUCTIONS DETRIMENTAL TO TREES

1. HARDPAN LAYER: DRILL 6-INCH-DIAMETER HOLES, 24 INCHES APART, INTO FREE-DRAINING STRATA OR TO A DEPTH OF 10 FEET, WHICHEVER IS LESS, AND BACKFILL WITH FREE-DRAINING MATERIAL.

DRAINAGE: NOTIFY ARCHITECT IF SUBSOIL CONDITIONS EVIDENCE UNEXPECTED WATER SEEPAGE OR

INSPECTION: AT TIME OF PLANTING, VERIFY THAT ROOT FLARE IS VISIBLE AT TOP OF ROOT BALL ACCORDING TO ANSI Z60.1. IF ROOT FLARE IS NOT VISIBLE, REMOVE SOIL IN A LEVEL MANNER FROM THE ROOT BALL TO WHERE THE TOP-MOST ROOT EMERGES FROM THE TRUNK. AFTER SOIL REMOVAL TO EXPOSE THE ROOT FLARE, VERIFY THAT ROOT BALL STILL MEETS SIZE REQUIREMENTS.

BURLAP: REMOVE STEM GIRDLING ROOTS AND KINKED ROOTS. REMOVE INJURED ROOTS BY CUTTING

BALLED AND BURLAPPED STOCK: SET EACH PLANT PLUMB AND IN CENTER OF PLANTING PIT OR TRENCH

2. AFTER PLACING SOME BACKFILL AROUND ROOT BALL TO STABILIZE PLANT, CAREFULLY CUT AND REMOVE BURLAP, ROPE, AND WIRE BASKETS FROM TOPS OF ROOT BALLS AND FROM SIDES, BUT DO NOT REMOVE FROM UNDER ROOT BALLS. REMOVE PALLETS, IF ANY, BEFORE SETTING. DO NOT USE PLANTING STOCK IF ROOT BALL IS CRACKED OR BROKEN BEFORE OR DURING PLANTING OPERATION. 3. BACKFILL AROUND ROOT BALL IN LAYERS, TAMPING TO SETTLE SOIL AND ELIMINATE VOIDS AND AIR POCKETS. WHEN PLANTING PIT IS APPROXIMATELY ONE-HALF FILLED, WATER THOROUGHLY BEFORE PLACING REMAINDER OF BACKFILL. REPEAT WATERING UNTIL NO MORE WATER IS ABSORBED.

CONTAINER-GROWN STOCK: SET EACH PLANT PLUMB AND IN CENTER OF PLANTING PIT OR TRENCH WITH

2. CAREFULLY REMOVE ROOT BALL FROM CONTAINER WITHOUT DAMAGING ROOT BALL OR PLANT. 3. BACKFILL AROUND ROOT BALL IN LAYERS. TAMPING TO SETTLE SOIL AND ELIMINATE VOIDS AND AIR POCKETS. WHEN PLANTING PIT IS APPROXIMATELY ONE-HALF FILLED, WATER THOROUGHLY BEFORE PLACING REMAINDER OF BACKEILL REPEAT WATERING UNTIL NO MORE WATER IS ABSORBED CONTINUE BACKFILLING PROCESS. WATER AGAIN AFTER PLACING AND TAMPING FINAL LAYER OF SOIL

BURLAP: WHEN PLANTING ON SLOPES. SET THE PLANT SO THE ROOT FLARE ON THE UPHILL SIDE IS FLUSH WITH THE SURROUNDING SOIL ON THE SLOPE; THE EDGE OF THE ROOT BALL ON THE DOWNHILL SIDE WILL BE ABOVE THE SURROUNDING SOIL. APPLY ENOUGH SOIL TO COVER THE DOWNHILL SIDE OF

1. TREES MAY BE PLANTED WITH AN APPROVED MECHANIZED TREE SPADE AT THE DESIGNATED LOCATIONS. DO NOT USE TREE SPADE TO MOVE TREES LARGER THAN THE MAXIMUM SIZE ALLOWED FOR A SIMILAR FIELD-GROWN, BALLED-AND-BURLAPPED ROOT-BALL DIAMETER ACCORDING TO ANSI Z60.1, OR LARGER THAN MANUFACTURER'S MAXIMUM SIZE RECOMMENDATION FOR THE TREE SPADE

2. USE THE SAME TREE SPADE TO EXCAVATE THE PLANTING HOLE AS WILL BE USED TO EXTRACT AND 3. WHEN EXTRACTING THE TREE, CENTER THE TRUNK WITHIN THE TREE SPADE AND MOVE TREE WITH A

5. PLANT TREES FOLLOWING PROCEDURES IN "TREE, SHRUB, AND VINE PLANTING" ARTICLE. 6. WHERE POSSIBLE, ORIENT THE TREE IN THE SAME DIRECTION AS IN ITS ORIGINAL LOCATION.

1. REMOVE ONLY DEAD, DYING, OR BROKEN BRANCHES. DO NOT PRUNE FOR SHAPE.

TRUNK STABILIZATION BY STAKING AND GUYING: INSTALL TRUNK STABILIZATION AS FOLLOWS UNLESS OTHERWISE INDICATED ON DRAWINGS. STAKE AND GUY TREES MORE THAN 12 FEET IN HEIGHT AND MORE

1. SITE-FABRICATED, STAKING-AND-GUYING METHOD: INSTALL NO FEWER THAN THREE GUYS SPACED

a. SECURELY ATTACH GUYS TO STAKES 36 INCHES LONG, DRIVEN TO GRADE. ADJUST SPACING TO AVOID PENETRATING ROOT BALLS OR ROOT MASSES. PROVIDE TURNBUCKLE FOR EACH GUY WIRE

b. SUPPORT TREES WITH BANDS OF FLEXIBLE TIES AT CONTACT POINTS WITH TREE TRUNK AND REACHING TO TURNBUCKLE. ALLOW ENOUGH SLACK TO AVOID RIGID RESTRAINT OF TREE. c. SUPPORT TREES WITH GUY CABLE OR MULTIPLE STRANDS OF TIE WIRE, CONNECTED TO THE BRASS GROMMETS OF TREE-TIE WEBBING AT CONTACT POINTS WITH TREE TRUNK AND REACHING TO

1. SET OUT AND SPACE GROUND COVER AND PLANTS OTHER THAN TREES, SHRUBS, AND VINES AS

4. FOR ROOTED CUTTING PLANTS SUPPLIED IN FLATS, PLANT EACH IN A MANNER THAT MINIMALLY 5. WORK SOIL AROUND ROOTS TO ELIMINATE AIR POCKETS AND LEAVE A SLIGHT SAUCER INDENTATION

6. WATER THOROUGHLY AFTER PLANTING, TAKING CARE NOT TO COVER PLANT CROWNS WITH WET SOIL. 7. PROTECT PLANTS FROM HOT SUN AND WIND: REMOVE PROTECTION IF PLANTS SHOW EVIDENCE OF

MULCH BACKFILLED SURFACES OF PLANTING AREAS AND OTHER AREAS INDICATED. 1. TREES IN TURF AREAS: APPLY ORGANIC MULCH RING OF 2-INCH AVERAGE THICKNESS, WITH 18-INCH RADIUS AROUND TRUNKS OR STEMS. DO NOT PLACE MULCH WITHIN 3 INCHES OF TRUNKS OR STEMS. 2. ORGANIC MULCH IN PLANTING AREAS: APPLY 2-INCH AVERAGE THICKNESS OF ORGANIC MULCH OVER WHOLE SURFACE OF PLANTING AREA, AND FINISH LEVEL WITH ADJACENT FINISH GRADES. DO NOT

SHOVEL-CUT EDGING: SEPARATE MULCHED AREAS FROM TURF AREAS, CURBS, AND PAVING WITH A

1. MAINTAIN PLANTINGS BY PRUNING, CULTIVATING, WATERING, WEEDING, FERTILIZING, MULCHING, RESTORING PLANTING SAUCERS, ADJUSTING AND REPAIRING TREE-STABILIZATION DEVICES, RESETTING TO PROPER GRADES OR VERTICAL POSITION, AND PERFORMING OTHER OPERATIONS AS REQUIRED TO

2. FILL IN, AS NECESSARY, SOIL SUBSIDENCE THAT MAY OCCUR BECAUSE OF SETTLING OR OTHER PROCESSES. REPLACE MULCH MATERIALS DAMAGED OR LOST IN AREAS OF SUBSIDENCE. 3. APPLY TREATMENTS AS REQUIRED TO KEEP PLANT MATERIALS, PLANTED AREAS, AND SOILS FREE OF PESTS AND PATHOGENS OR DISEASE. USE INTEGRATED PEST MANAGEMENT PRACTICES WHEN POSSIBLE TO MINIMIZE USE OF PESTICIDES AND REDUCE HAZARDS. TREATMENTS INCLUDE PHYSICAL CONTROLS SUCH AS HOSING OFF FOLIAGE, MECHANICAL CONTROLS SUCH AS TRAPS, AND BIOLOGICAL

1. APPLY PESTICIDES AND OTHER CHEMICAL PRODUCTS AND BIOLOGICAL CONTROL AGENTS ACCORDING TO AUTHORITIES HAVING JURISDICTION AND MANUFACTURER'S WRITTEN RECOMMENDATIONS. COORDINATE APPLICATIONS WITH OWNER'S OPERATIONS AND OTHERS IN PROXIMITY TO THE WORK. 2. PRE-EMERGENT HERBICIDES (SELECTIVE AND NONSELECTIVE): APPLY TO TREE, SHRUB, AND GROUND-COVER AREAS ACCORDING TO MANUFACTURER'S WRITTEN RECOMMENDATIONS. DO NOT

3. POST-EMERGENT HERBICIDES (SELECTIVE AND NONSELECTIVE): APPLY ONLY AS NECESSARY TO TREAT ALREADY-GERMINATED WEEDS AND ACCORDING TO MANUFACTURER'S WRITTEN RECOMMENDATIONS.

REPAIR AND REPLACEMENT

GENERAL: REPAIR OR REPLACE EXISTING OR NEW TREES AND OTHER PLANTS THAT ARE DAMAGED BY CONSTRUCTION OPERATIONS, IN A MANNER APPROVED BY ARCHITECT. 1. SUBMIT DETAILS OF PROPOSED PRUNING AND REPAIRS.

2. PERFORM REPAIRS OF DAMAGED TRUNKS, BRANCHES, AND ROOTS WITHIN 24 HOURS, IF APPROVED. 3. REPLACE TREES AND OTHER PLANTS THAT CANNOT BE REPAIRED AND RESTORED TO FULL-GROWTH STATUS, AS DETERMINED BY ARCHITECT.

REMOVE AND REPLACE TREES THAT ARE MORE THAN 25 PERCENT DEAD OR IN AN UNHEALTHY CONDITION BEFORE THE END OF THE CORRECTIONS PERIOD OR ARE DAMAGED DURING CONSTRUCTION OPERATIONS THAT ARCHITECT DETERMINES ARE INCAPABLE OF RESTORING TO NORMAL GROWTH PATTERN.

1. PROVIDE NEW PLANTS OF SAME SIZE AND SPECIES AS THOSE BEING REPLACED.

CLEANING AND PROTECTION

- 1. DURING PLANTING, KEEP ADJACENT PAVING AND CONSTRUCTION CLEAN AND WORK AREA IN AN ORDERLY CONDITION. CLEAN WHEELS OF VEHICLES BEFORE LEAVING SITE TO AVOID TRACKING SOIL ONTO ROADS, WALKS, OR OTHER PAVED AREAS. 2. REMOVE SURPLUS SOIL AND WASTE MATERIAL INCLUDING EXCESS SUBSOIL, UNSUITABLE SOIL, TRASH,
- AND DEBRIS AND LEGALLY DISPOSE OF THEM OFF OWNER'S PROPERTY. 3. PROTECT PLANTS FROM DAMAGE DUE TO LANDSCAPE OPERATIONS AND OPERATIONS OF OTHER CONTRACTORS AND TRADES. MAINTAIN PROTECTION DURING INSTALLATION AND MAINTENANCE PERIODS. TREAT, REPAIR, OR REPLACE DAMAGED PLANTINGS.
- 4. AFTER INSTALLATION AND BEFORE PROJECT COMPLETION, REMOVE NURSERY TAGS, NURSERY STAKES, TIE TAPE, LABELS, WIRE, BURLAP, AND OTHER DEBRIS FROM PLANT MATERIAL, PLANTING AREAS, AND PROJECT SITE. 5. AT TIME OF SUBSTANTIAL COMPLETION, VERIFY THAT TREE-WATERING DEVICES ARE IN GOOD WORKING

ORDER AND LEAVE THEM IN PLACE. REPLACE IMPROPERLY FUNCTIONING DEVICES. MAINTENANCE SERVICE

MAINTENANCE SERVICE FOR PLANTS: PROVIDE MAINTENANCE BY SKILLED EMPLOYEES OF LANDSCAPE INSTALLER. MAINTAIN AS REQUIRED IN "PLANT MAINTENANCE" ARTICLE. BEGIN MAINTENANCE IMMEDIATELY AFTER PLANTS ARE INSTALLED AND CONTINUE UNTIL PLANTINGS ARE ACCEPTABLY HEALTHY AND WELL ESTABLISHED, BUT FOR NOT LESS THAN MAINTENANCE PERIOD BELOW: 1. MAINTENANCE PERIOD: 12 MONTHS FROM DATE OF SUBSTANTIAL COMPLETION.



UNDERGROUND UTILITIES ARE PLOTTED FROM A COMPILATION OF AVAILABLE RECORD INFORMATION AND SURFACE INDICATIONS OF UNDERGROUND STRUCTURES AND MAY NOT BE INCLUSIVE. PRECISE LOCATIONS AND THE EXISTENCE OR NON EXISTENCE OF UNDERGROUND UTILITIES CANNOT BE VERIFIED. PLEASE NOTIFY THE OHIO UTILITY PROTECTION SERVICE AT 1-800-362-2764 BEFORE ANY PERIOD OF EXCAVATION OR CONSTRUCTION ACTIVITY.



UNDERGROUND IRRIGATION SYSTEM SPECIFICATIONS

THE SYSTEM SHALL PROVIDE 100% COVERAGE AND UNIFORMLY IRRIGATE ALL ZONES AND PERFORM AS

- REQUIRED: 1. THE CONTRACTOR SHALL PROVIDE AN UNDERGROUND IRRIGATION SYSTEM DRAWING AND ADHERE TO THESE SPECIFICATIONS.
 - a) AUTOMATIC IRRIGATION SYSTEM INCLUDING PIPING, FITTINGS, SPRINKLER HEADS, CONTROL WIRE, QUICK COUPLER VALVES, CONTROLLERS, AND ACCESSORIES.
 - b) EXCAVATING AND BACKFILLING IRRIGATION SYSTEM WORK.
 - c) TESTING AND ADJUSTING OF SYSTEM. d) "AS - BUILT" DRAWINGS
 - e) WINTERIZATION SHUTDOWN SPRING START-UP

ALL WORK REQUIRED BY THE CONTRACTOR'S PLANS AND THESE SPECIFICATIONS SHALL BE ACCOMPLISHED BY THE IRRIGATION CONTRACTOR EVEN THOUGH MINOR ITEMS REQUIRED MAY NOT BE SPECIFICALLY MENTIONED IN THE ABOVE LISTING.

DRAWINGS: THE IRRIGATION LAYOUT IS DIAGRAMMATIC. EXACT LOCATIONS OF PIPING, SPRINKLER HEADS, VALVES, AND OTHER COMPONENTS SHALL BE BY THE CONTRACTOR. MODIFICATIONS IN THE FIELD AT TIME OF INSTALLATION TO ALLOW FOR ACTUAL ON SITE CONDITIONS ARE ACCEPTABLE. PROPER SPACING OF SPRINKLER HEADS WILL BE REQUIRED TO OBTAIN SATISFACTORY COVERAGE. MINOR ADJUSTMENTS IN THE SYSTEM LAYOUT WILL BE PERMITTED TO CLEAR FIXED OBSTRUCTIONS. ANY MAJOR REVISIONS TO THE IRRIGATION SYSTEM SHALL BE SUBMITTED IN WRITING TO THE OWNER FOR APPROVAL. THE FINAL SYSTEM LAYOUT MUST BE ACCEPTABLE TO THE OWNER.

VERIFICATION OF PLANS AND SPECIFICATIONS: IT SHALL BE THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO CAREFULLY EXAMINE THE IRRIGATION ZONES AND SPECIFICATIONS RELATING TO THIS WORK FOR COMPLETENESS, ACCURACY, AND CLARITY, ANY CONFLICT ERRORS OR CLARIFICATIONS REQUEST SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE FOR WRITTEN INTERPRETATION OR INSTRUCTIONS. NO CLAIM FOR INCREASED COMPENSATION FOR ADDITIONS, CHANGES, OR ALTERATIONS WILL BE CONSIDERED UNLESS WRITTEN AUTHORIZATION IS GRANTED BY OWNER'S REPRESENTATIVE. OTHERWISE ANY ADDITIONAL MATERIALS AND/OR LABOR DUE TO EXISTING CONDITIONS SHALL BE FURNISHED UNDER THIS CONTRACT.

IRRIGATION CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FOR INSTALLATION OF THIS WORK.

IRRIGATION CONTRACTOR TO ENSURE THAT THE GENERAL CONTRACTOR PROVIDES REQUIRED POWER TO IRRIGATION SYSTEM.

QUALITY ASSURANCE:

MANUFACTURER QUALIFICATIONS: PROVIDE UNDERGROUND IRRIGATION SYSTEM AS A COMPLETE UNIT PRODUCED BY A SINGLE ACCEPTABLE MANUFACTURER, INCLUDING HEADS, VALVES, CONTROLS, AND ACCESSORIES.

WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST RULES, AND OTHER APPLICABLE STATE OR LOCAL LAWS. NOTHING IN THE CONTRACT DOCUMENTS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

CONTRACTORS QUALIFICATIONS: BIDDING CONTRACTORS SHALL HAVE A MINIMUM OF THREE YEARS EXPERIENCE IN THE CONSTRUCTION OF A JOB OF SIMILAR SIZE AND COMPLEXITY.

1. PROVIDE THE GENERAL CONTRACTOR A LIST OF FIVE EQUIVALENT, IRRIGATION SYSTEM INSTALLATIONS, PERFORMED IN THE LAST FIVE YEARS, INCORPORATING THE FOLLOWING INFORMATION: f) NAME AND ADDRESS OF PRODUCT.

- g) NAME AND ADDRESS OF OWNER.
- 1) CONTACT PERSON c) NAME AND ADDRESS WITH WHOM CONTACT WAS WITH.
- 1) CONTACT PERSON

REQUIREMENTS OF REGULATORY AGENCIES AND UTILITIES:

- 1. SYSTEM SHALL COMPLY WITH THE LATEST REQUIREMENTS OF ALL STATE AND LOCAL CODES AND ORDINANCES.
- 2. SYSTEM SHALL COMPLY WITH THE LATEST RULES AND REQUIREMENTS BY ALL UTILITY COMPANIES INVOLVED.
- 3. NOTHING IN THE CONTRACT DOCUMENTS IS TO BE CONSTRUCTED TO PERMIT WORK NOT CONFORMING TO THESE RULES, CODES AND ORDINANCES.

ELECTRICAL DEVICES SHALL CARRY UNDERWRITER'S LABORATORY LABELS.

SUBMITTALS:

PRODUCT DATA: SUBMIT MANUFACTURER'S TECHNICAL DATA AND INSTALLATION INSTRUCTIONS FOR UNDERGROUND IRRIGATION SYSTEM.

RECORD DRAWINGS: AFTER COMPLETION OF THE WORK AND BEFORE FINAL ACCEPTANCE, A SET OF SCALED, REPRODUCIBLE RECORD DRAWINGS, AND TWO SETS OF PRINTS SHOWING THE LOCATION OF THE COMPLETE WORK SHALL BE SUBMITTED TO THE OWNER. FINAL PAYMENT AND ANY RETAINAGE WILL NOT BE RELEASED UNTIL THESE DRAWINGS ARE SUBMITTED AND ACCEPTED BY THE OWNER.

SUBMIT A WEEKLY IRRIGATION SCHEDULE BASED ON AN ANNUAL EVAPOTRANSPIRATION RATE, AVERAGE RAINFALL AMOUNTS ETC.

WARRANTY

THE CONTRACTOR SHALL FURNISH A MANUFACTURER'S WRITTEN WARRANTY TO THE EFFECT THAT ALL HEADS, VALVES, AND CONTROLLERS WILL BE WARRANTED FOR A PERIOD OF NO LESS THAN ONE YEAR TO BE FREE FROM DEFECTS AND FAULTY WORKMANSHIP, AND THAT ANY DEFECTIVE HEADS, VALVES, OR CONTROLLERS SHALL BE PROMPTLY REPAIRED OR REPLACED WITHOUT ADDITIONAL COST TO THE OWNER IN ACCORDANCE WITH THAT WARRANTY.

ALL MATERIALS OTHER THAN THOSE REFERRED TO IN PARAGRAPH A ABOVE SHALL BE WARRANTED FOR A PERIOD OF ONE FULL YEAR FROM THE DATE OF FINAL ACCEPTANCE BY THE OWNER.

ALL INSTALLATION LABOR USED ON THIS PROJECT WILL BE WARRANTED FOR ONE FULL YEAR FROM DATE OF FINAL ACCEPTANCE BY THE OWNER.

ACCEPTABLE MANUFACTURERS

MANUFACTURER: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS OF ONE OF THE FOLLOWING: 1. RAIN BIRD SPRINKLER MFG. CORP.

2. HUNTER

3. TORO

MATERIALS:

PRESSURE PIPE: COMPLY WITH FOLLOWING:

1. UNPLASTICIZED PVC PIPE, CLASS 200 SDR21, ASTMD 2241. a) 3" AND LARGER, MAY BE INSTALLED WITH SLIP JOINT RING TITE SEALS.

b) 2-1/2" AND SMALLER SHALL BE INSTALLED USING SOLVENT WELD JOINTS. 2. DRIPPER TUBING WITH PRESSURE COMPENSATING EMITTERS

CIRCUIT PIPE (DOWNSTREAM FROM CIRCUIT VALVES): COMPLY WITH FOLLOWING:

1. UNPLASTICIZED PVC PIPE, CLASS 200 SDR-21, ASTMD 2241. 2. VIRGIN POLYETHYLENE TUBING, 80 POUND MINIMUM N.S.F. APPROVED, ASTM D2239.

PIPE FITTINGS: COMPLY WITH FOLLOWING:

1. FOR PVC PLASTIC PIPE, APPROVED SOCKET FITTINGS TO BE USED WITH ASTM D2241 PIPE AND ASTM

D2564 SOLVENT CEMENT. 2. FOR POLYETHYLENE (PE) PLASTIC PIPE, PLASTIC INSERT FITTINGS, ASTM D2609.

VALVES: MANUFACTURER'S STANDARD, OF TYPE AND SIZE INDICATED, AND AS FOLLOWS:

1. PROVIDE PVC OR CAST BRONZE BODIES, AS CALLED FOR ON PLANS.

- 2. PROVED PRESSURE REGULATING VALVES, IF CALLED FOR ON PLANS.
- 3. MANUAL CIRCUIT VALVES: GLOBE VALVES. 4. KEY OPERATED VALVES: MANUAL VALVES, FITTED FOR KEY OPERATION.
- a) FURNISH 2 VALVE KEYS, 3 FEET LONG WITH TEE HANDLES AND KEY END TO FIT VALVES.
- 5. AUTOMATIC CIRCUIT VALVES GLOBE VALVES OPERATED BY LOW-POWER SOLENOID, NORMALLY
- CLOSED, MANUAL FLOW ADJUSTMENT. 6. AUTOMATIC DRAIN VALVES: DESIGNED TO OPEN FOR DRAINAGE WHEN LINE PRESSURE DROPS BELOW 3

BACKFLOW PREVENTER: AS REQUIRED BY GOVERNING CODE.

SPRINKLER HEADS: MANUFACTURER'S STANDARD UNIT DESIGNED TO PROVIDE UNIFORM COVERAGE OVER ENTIRE AREA OF SPRAY SHOWN ON DRAWINGS AT AVAILABLE WATER PRESSURE, AS FOLLOWS: 1. BUBBLER: FIXED PATTERN, PRESSURE COMPENSATING TYPE.

- 2. SHRUBBERY: FIXED PATTERN, PRESSURE COMPENSATING TYPE
- 3. POP-UP SPRAY: FIXED PATTERN, WITH SCREW-TYPE FLOW ADJUSTMENT OR PRESSURE REGULATING NOZZLE AND STAINLESS STEEL RETRACTION SPRING.
- 4. POP-UP ROTARY SPRAY: GEAR DRIVE, FULL CIRCLE AND ADJUSTABLE PART CIRCLE TYPE.
- 5. POP-UP ROTARY IMPACT: IMPACT DRIVE, FULL CIRCLE AND PART CIRCLE AS INDICATED. 6. ABOVE-GROUND ROTARY IMPACT: IMPACT DRIVE, FULL CIRCLE AND PART CIRCLE AS INDICATED.

VALVE BOX: INDUSTRIAL GRADE PLASTIC.

VALVE COVER AND FRAME: INDUSTRIAL GRADE PLASTIC.

WIRING: UF TYPE SINGLE STRAND WIRE #14 WITH WHITE COMMON GROUND AND OTHERS COLOR CODED. 1. CONNECTIONS: SUITABLE MOISTURE PROOF DEVICE: 3M PACK OR RAIN BIRD SNAP TYPE CONNECTOR.

DRAINAGE BACKFILL: CLEANED GRAVEL OR CRUSHED STONE, GRADED FROM 3" MAXIMUM TO 3/4" MINIMUM.

AUTOMATIC CONTROL SYSTEM: OF CIRCUITS AS INDICATED.

EXTERIOR CONTROL ENCLOSURE: MANUFACTURER'S STANDARD WEATHERPROOF ENCLOSURE WITH LOCKING COVER, COMPLYING WITH NFPA 70 (NATIONAL ELECTRIC CODE).

INTERIOR CONTROL ENCLOSURE: MANUFACTURER'S STANDARD WITH LOCKING COVER, COMPLYING WITH NFPA 70.

TIMING DEVICE: ADJUSTABLE, 24-HOUR AND 7 OR 14 DAY CLOCKS TO OPERATE ANY TIME OF DAY AND SKIP ANY DAY IN A 7 OR 14 DAY PERIOD. 1. ALLOW FOR MANUAL OR SEMI-AUTOMATIC OPERATION WITHOUT DISTURBING PRESET AUTOMATIC OPERATION.

SYSTEM DESIGN: DESIGN PRESSURES: AS INDICATED ON CONTRACTOR'S DRAWINGS, AT CONNECTION TO BUILDING SYSTEM AND AT LAST HEAD IN CIRCUIT.

LOCATION OF HEADS: AS INDICATED ON DRAWINGS. MAKE MINOR ADJUSTMENTS AS NECESSARY TO AVOID PLANTINGS AND OTHER OBSTRUCTIONS.

MINIMUM WATER COVERAGE:

1. TURF AREAS, 100% 2. PLANTING AREAS, 100%.

TRENCHING AND BACKFILLING: GENERAL: EXCAVATE STRAIGHT AND TRUE WITH BOTTOM UNIFORMLY SLOPED TO LOW POINTS. 1. PROTECT EXISTING LAWNS AND PLANTINGS. REMOVE AND REPLANT AS NECESSARY TO COMPLETE INSTALLATION. REPLACE DAMAGED LAWN AREAS PLANTS AND MULCH WITH NEW TO MATCH EXISTING.

TRENCH DEPTH: EXCAVATE TRENCHES TO A DEPTH OF 3" BELOW INVERT OF PIPE, UNLESS OTHERWISE INDICATED.

MINIMUM COVER: PROVIDE FOLLOWING MINIMUM COVER OVER TOP OF INSTALLED PIPING: A MINIMUM OF 18" COVER SHALL BE HELD OVER ALL MAIN LINES AND LATERAL LINES 1" THRU 2" IN DIAMETER, AND A MINIMUM OF 24" OF COVER FOR PIPE SIZES 2-1/2" THRU 3" DIAMETER.

PIPE SIZES BETWEEN 4" AND 6" IN DIAMETER SHOULD HAVE A MINIMUM OF 30" OF COVER.

BACKFILL: BACKFILL WITH CLEAN MATERIAL FROM EXCAVATION. REMOVE ORGANIC MATERIAL AS WELL AS ROCKS AND DEBRIS LARGER THAN 1" DIAMETER. PLACE ACCEPTABLE BACKFILL MATERIAL IN 6" LIFTS, COMPACTING EACH LIFT.

EXISTING LAWNS: WHERE TRENCHING IS REQUIRED ACROSS EXISTING LAWNS, UNIFORMLY CUT STRIPS OF SOD 6" WIDER THAN TRENCH. REMOVE SOD IN ROLLS OF SUITABLE SIZE FOR HANDLING AND KEEP MOISTENED UNTIL REPLANTED.

BACKFILL TRENCH TO WITHIN 6" OF FINISHED GRADE. CONTINUE FILL WITH ACCEPTABLE TOPSOIL AND COMPACT TO BRING SOD EVEN WITH EXISTING LAWN.

REPLANT OR REPLACE SOD WITHIN 7 DAYS AFTER REMOVAL, ROLL AND WATER GENEROUSLY.

RESEED AND RESTORE TO ORIGINAL CONDITION ANY SOD AREAS NOT IN HEALTHY CONDITION EQUAL TO ADJOINING LAWNS 30 DAYS AFTER REPLANTING.

PAVEMENTS: WHERE EXISTING PAVEMENTS MUST BE CUT TO INSTALL IRRIGATION SYSTEM, CUT SMOOTHLY TO STRAIGHT LINES 6" WIDER THAN TRENCH. 1. EXCAVATE TRENCH TO REQUIRED DEPTH AND WIDTH.

2. REMOVE CUT-OUT PAVEMENT AND EXCAVATED MATERIAL FROM SITE. 3. AT WALKWAYS, JACK PIPING UNDER PAVING MATERIAL, IF POSSIBLE 4. BACKFILL WITH DRY SAND FILL MATERIAL, PLACING IN 6-INCH LIFTS. 5. REPAIR OR REPLACE PAVEMENT CUTS WITH EQUIVALENT MATERIALS AND FINISHES.

PULLING PIPE AND WIRE: CONTRACTOR MAY ELECT TO INSTALL THE IRRIGATION PIPE AND ELECTRICAL WIRE BY MEANS OF VIBRATORY PLOW. STARTING AND FINISHING HOLES FOR HIS METHOD OF INSTALLATION SHALL NOT EXCEED A 1'-0" BY 3'-0" OPENING. THESE EXCAVATIONS AND OTHER NECESSARY EXCAVATIONS FOR INSTALLATION OF VALVES, SPRINKLER HEADS, CONNECTIONS, ETC., SHALL BE BACKFILLED IMMEDIATELY AFTER WORK IS COMPLETED WITH SAND OR PEA ROCK TO PRECLUDE FUTURE SETTLEMENT.

INSTALLATION:

CONNECTION TO MAIN: CONNECT TO EXISTING BUILDING PIPING IN LOCATION INDICATED. 1. INSTALL NEW TEE, VALVE, AND UNION.

2. CONNECT TO EXISTING STUB. INSTALL NEW VALVE AND UNION. 3. CONNECT TO EXISTING STUB WITH UNION.

MAINTAIN UNINTERRUPTED WATER SERVICE TO BUILDING DURING NORMAL WORKING HOURS. ARRANGE FOR TEMPORARY WATER SHUT-OFF WITH ARCHITECT/ENGINEER.

BACKFLOW PREVENTER: PROVIDE UNION ON DOWNSTREAM SIDE. INSTALL APPROVED BACK FLOW PREVENTION DEVICE AS DIRECTED BY MANUFACTURER AND IN A MANNER APPROVED BY STATE AND LOCAL CODES.

CIRCUIT VALVES: INSTALL IN VALVE BOX, ARRANGED FOR EASY ADJUSTMENT AND REMOVAL. 1. PROVIDE UNION ON DOWNSTREAM SIDE. 2. ADJUST AUTOMATIC CONTROL VALVES TO PROVIDE FLOW RATE OR RATED OPERATING PRESSURE REQUIRED FOR EACH SPRINKLER CIRCUIT. IF AN OVER PRESSURE CONDITION EXISTS, CONTRACTOR SHALL INSTALL, AT HIS EXPENSE, SUCH PRESSURE COMPENSTATION DEVICES AS ARE NECESSARY TO BRING THE CIRCUIT OR HEADS INTO PROPER OPERATING RANGE.

PIPING: LAY PIPE ON SOLID SUBBASE, UNIFORMLY SLOPED WITHOUT HUMPS OR DEPRESSIONS. 1. FOR CIRCUIT PIPING, SLOPE TO DRAIN VALVE AT LEAST 1/2" IN 10' OR RUN. 2. AT WALL PENETRATIONS, PACK THE OPENING AROUND PIPE WITH NON-SHRINK GROUT. AT EXTERIOR

- MANUFACTURER.

a) ALLOW JOINTS TO CURE AT LEAST 24 HOURS AT TEMPERATURE ABOVE 40 DEGREES F (4 DEGREES C) BEFORE TESTING, UNLESS OTHERWISE RECOMMENDED BY MANUFACTURER.

1. RESTORE LAWNS OR PLANTINGS DISTURBED BY THIS WORK

HYDROSTATIC TEST IS COMPLETED. 1. INSTALL LAWN HEADS AT MANUFACTURER'S RECOMMENDED HEIGHTS. 2. INSTALL SHRUBBERY HEADS AT HEIGHTS INDICATED. 3. LOCATE PART-CIRCLE HEADS TO MAINTAIN A MINIMUM DISTANCE OF 4" FROM WALLS AND 2" FROM

WIRING: MAKE ALL WIRE SPLICES IN VALVE BOXES.

TESTING AND TRAINING:

DIELECTRIC PROTECTION: USE DIELECTRIC FITTINGS AT CONNECTION WHERE PIPES OF DISSIMILAR METAL ARE JOINED.

GENERAL: FURNISH LOW VOLTAGE SYSTEM MANUFACTURED EXPRESSLY FOR CONTROL OF AUTOMATIC CIRCUIT VALVES OF UNDERGROUND IRRIGATION SYSTEMS. PROVIDE UNIT OF CAPACITY TO SUIT NUMBER

TRANSFORMER: TO CONVERT BUILDING SERVICE VOLTAGE TO CONTROL VOLTAGE OF 24 BOLTS. CIRCUIT CONTROL: EACH CIRCUIT VARIABLE FROM APPROXIMATELY 5 TO 60 MINUTES. INCLUDE SWITCH

FOR MANUAL OR AUTOMATIC OPERATION OF EACH CIRCUIT.

3. LAYOUT MAY BE MODIFIED, IF NECESSARY TO OBTAIN COVERAGE, TO SUIT MANUFACTURER'S STANDARD HEADS. DO NOT DECREASE NUMBER OF HEADS INDICATED ON CONTRACTOR'S DRAWINGS UNLESS OTHERWISE ACCEPTABLE TO ARCHITECT/ENGINEER/OWNERS REPRESENTATIVE.

IRRIGATION ZONES: IRRIGATION HEADS LOCATED AT THE CORNERS OF THE FIELD SHALL BE ON THE SAME IRRIGATION ZONE, SEPARATE FROM THE REST OF THE SYSTEM.

GENERAL: UNLESS OTHERWISE INDICATED, COMPLY WITH REQUIREMENTS OF UNIFORM PLUMBING CODE.

WATER HAMMER ARRESTER: INSTALL BETWEEN CONNECTION TO BUILDING MAIN AND CIRCUIT VALVES, INSIDE BUILDING OR IN VALVE BOX AS INDICATED.

FACE, LEAVE A PERIMETER SLOT APPROXIMATELY 1/2" WIDE BY 3/4" DEEP. FILL THIS SLOT WITH BACKER ROD AND AN ACCEPTABLE ELASTOMERIC SEALANT. REPAIR BELOW GRADE WATERPROOFING DISTURBED BY THIS WOK AND MAKE PENETRATION WATERTIGHT. 3. INSTALL PVC PIPE IN DRY WEATHER WHEN TEMPERATURE IS ABOVE 40 F (4 C) IN STRICT ACCORDANCE

WITH MANUFACTURER'S INSTRUCTIONS. ALLOW JOINTS TO CURE AT LEAST 24 HOURS AT TEMPERATURE ABOVE 40 F (4 C) BEFORE TESTING, UNLESS OTHERWISE RECOMMENDED BY

DRAIN POCKETS: EXCAVATE TO SIZES INDICATED. BACKFILL WITH ACCEPTABLE DRAIN MATERIAL TO 12" BELOW GRADE. COVER DRAIN MATERIAL WITH A SHEET OF 30-POUND ASPHALT SATURATED FELT AND BACKFILL REMAINDER WITH EXCAVATED MATERIAL.

SPRINKLER HEADS: FLUSH CIRCUIT LINES WITH FULL HEAD OF WATER AND INSTALL HEADS AFTER

OTHER BOUNDARIES, UNLESS OTHERWISE INDICATED.

CLOSING OF PIPE AND FLUSHING LINES: CAP OR PLUG ALL OPENINGS AS SOON AS LINES HAVE BEEN INSTALLED TO PREVENT THE ENTRANCE OF MATERIALS THAT WOULD OBSTRUCT THE PIPE. LEAVE IN PLACE UNTIL REMOVAL IS NECESSARY FOR COMPLETION OF THE INSTALLATION. THOROUGHLY FLUSH OUT ALL MAIN WATER LINES BEFORE INSTALLING VALVES. THOROUGHLY FLUSH OUT ALL LATERAL LINES AFTER INSTALLATION AND BEFORE ATTACHING HEADS.

GENERAL: NOTIFY ARCHITECT/ENGINEER IN WRITING WHEN TESTING WILL BE CONDUCTED. CONDUCT TESTS IN PRESENCE OF ARCHITECT/ENGINEER.

HYDROSTATIC TEST: TEST WATER PIPING AND VALVES, BEFORE BACKFILLING TRENCHES, TO A HYDROSTATIC PRESSURE OF NOT LESS THAN 100 PSI. PIPING MAY BE TESTED IN SECTIONS TO EXPEDITE WORK. REMOVE AND REPAIR PIPING, CONNECTIONS, VALVES WHICH DO NOT PASS HYDROSTATIC TESTING.

OPERATIONAL TESTING: PERFORM OPERATIONAL TESTING AFTER HYDROSTATIC TESTING IS COMPLETED, BACKFILL IS IN PLACE, AND SPRINKLER HEADS ADJUSTED TO FINAL POSITION. 1. DEMONSTRATE TO ARCHITECT/ENGINEER THAT SYSTEM MEETS COVERAGE REQUIREMENTS AND THAT AUTOMATIC CONTROLS FUNCTION PROPERLY. 2. COVERAGE REQUIREMENTS ARE BASED ON OPERATION OF ONE CIRCUIT AT A TIME.

AFTER COMPLETION OF GRADING, SEEDING OR SODDING, AND ROLLING OF GRASS AREAS, CAREFULLY ADJUST LAWN SPRINKLER HEADS SO THEY WILL BE FLUSH WITH OR NOT MORE THAN 1/2" ABOVE FINISH GRADE.

PERSONNEL TRAINING 1. CONTRACTOR SHALL BE RESPONSIBLE FOR THE TRAINING OF AS MANY PERSONNEL AS THE OWNER

- SHALL DEEM NECESSARY. 2. CONTRACTOR SHALL BE RESPONSIBLE FOR ONE STARTING AND ONE WINTERIZING OF THE SYSTEM
- DURING THE APPROPRIATE TIMES OF THE YEAR AFTER FINAL ACCEPTANCE BY THE OWNER AS PART OF THE TRAINING OF THE OWNER'S PERSONNEL 3. CONTRACTOR SHALL INCLUDE GENERAL TROUBLESHOOTING AND OPERATION OF THE SYSTEM WITH
- REFERENCE TO HEAD, VALVE, AND CONTROLLER OPERATION. 4. CONTRACTOR SHALL FURNISH A COMPLETE OPERATION AND MAINTENANCE MANUAL TO THE OWNER'S PERSONNEL. THIS MANUAL SHALL INCLUDE REPAIR PARTS LISTS, ASSEMBLY INSTRUCTIONS, TROUBLESHOOTING GUIDES, PROGRAMMING INSTRUCTIONS, AND RECOMMENDED PRECIPITATION RATES.

ADJUSTMENT:

AFTER COMPLETION OF GRADING, SEEDING OR SODDING, IF APPLICABLE, CONTRACTOR SHALL RETURN TO THE JOB SITE TO PERFORM ANY FINAL ADJUSTMENTS TO THE SYSTEM, WHICH MIGHT BE DEEMED NECESSARY.

THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY PRESSURE TESTING AND START UP OF THE SYSTEM WHEN CONSTRUCTION IS COMPLETE. THE CONTRACTOR WILL ALSO BE RESPONSIBLE FOR THE WINTERIZATION OF THE SYSTEM AFTER THE FIRST SEASON OF OPERATION.



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