

| NO. | DATE | BY | JOB | REVISION |
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| 1 | 04/13/18 | APT | MES | ORIGINAL SUBMITTAL |

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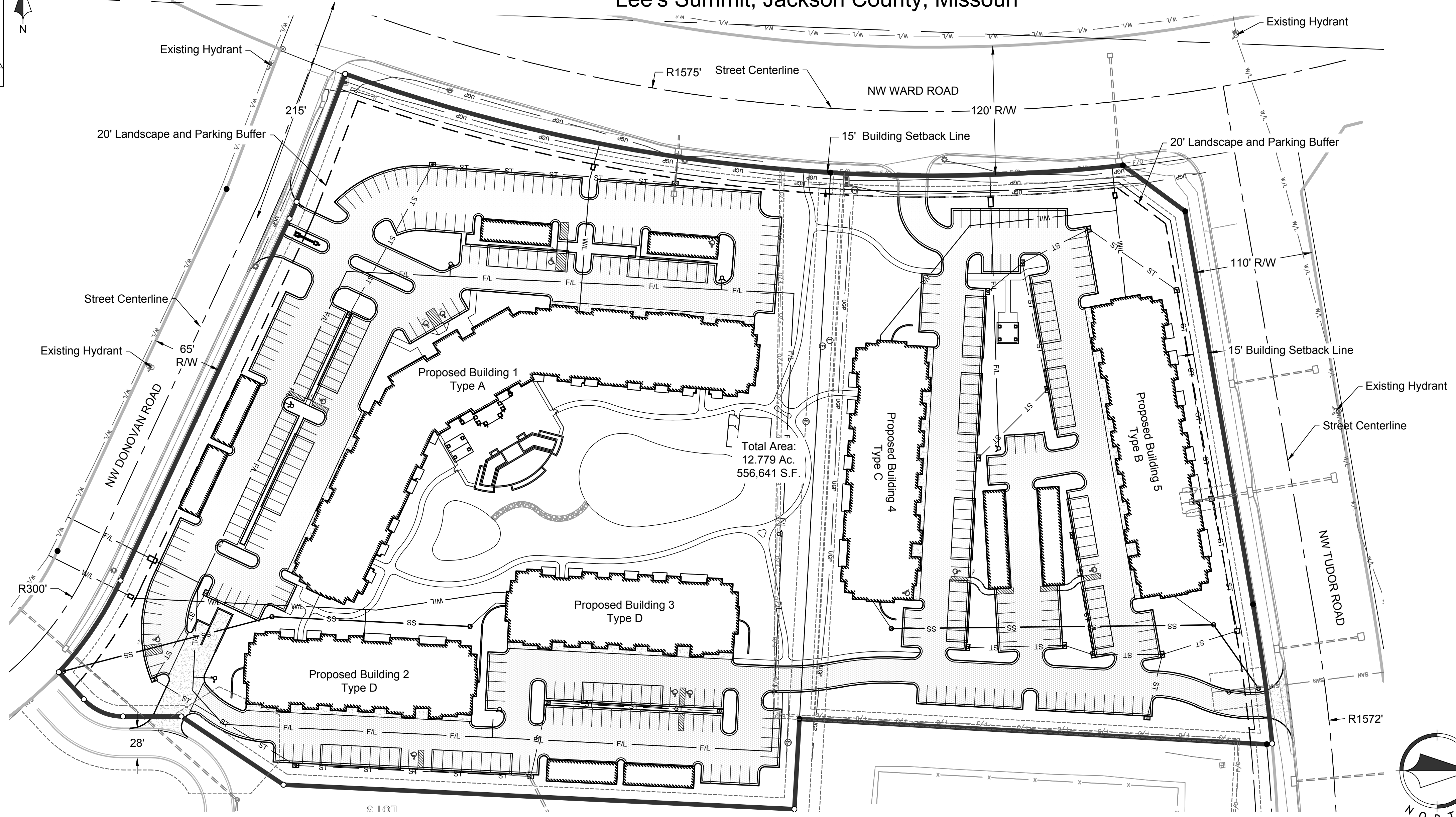
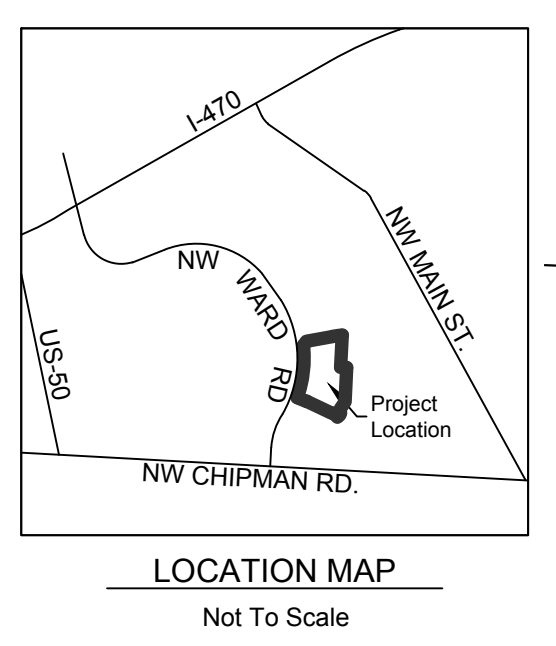
MISSOURI CERTIFICATE OF AUTHORITY NO. 2010035350
STATE OF MISSOURI
MITCHELL E. SLUTTER
PROFESSIONAL ENGINEER
NO. 0000030418
EXPIRES 12/31/18

Final Development Plans For Summit Square II

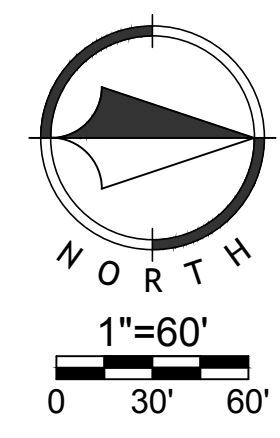
Lee's Summit, Jackson County, Missouri

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Total Area:
12.779 Ac.
556,641 S.F.



GENERAL NOTES

- All construction shall follow the City of Lee's Summit Design and Construction Manual as adopted by Ordinance 5813. Where discrepancies exist between the Final Development Plan and the Design and Construction Manual, the Design and Construction Manual shall govern.
- The contractor will be responsible for securing all bonds, and insurance required by the contract documents, City of Lee's Summit, Mo., and all other governing agencies (including local, county, state, and federal authorities) having jurisdiction over the work proposed by these construction documents. The cost for all bonds, and insurance shall be the contractor's responsibility and shall be included in the bid for the work.
- All existing utilities indicated on the drawings are according to the best information available to the engineer; however, all utilities actually existing may not be shown. The contractor shall be responsible for contacting all utility companies for an exact field location of each utility prior to any construction. All utilities, shown and un-shown, damaged through the negligence of the contractor shall be repaired or replaced by the contractor at his expense.
- The contractor will be responsible for all damages to existing utilities, pavement, fences, structures, and other features not designated for removal. The contractor shall repair all damages at his expense.
- The demolition of existing pavement, curbs, structures, and all other features necessary to construct the proposed improvements, shall be performed by the contractor. All waste material removed during construction shall be disposed off the project site. The contractor shall be responsible for all permits for hauling and disposing of waste material. The disposal of waste material shall be in accordance with all local, state, and federal regulations.
- By use of these construction documents the contractor hereby agrees that he shall be solely responsible for the safety of the construction workers and the public. The contractor agrees to hold the engineer and owner harmless for any and all injuries, claims, losses, or damages related to the project.
- The contractor will be responsible for providing all signage, barricades, lighting, etc., as required for temporary traffic control during the construction of this project. Maintenance of the temporary traffic control devices will be the contractor's responsibility. All traffic control in conduction with construction in the right-of-way shall be in conformance with the City Traffic Control Requirements.
- Contractor shall furnish evidence that his/her insurance meets the requirements of the City of Lee's Summit, Missouri Municipal Code.
- Prior to installing, constructing, or performing any work on the public storm sewer line (including connecting private drainage systems to the storm sewer), contact Inspections.
- Connections to the public storm sewers between structures will not be permitted.
- Contractor shall verify and accept existing topography shown herein. Contractor shall notify Engineer if any discrepancies are found prior to any earthwork activities.
- Planning and Codes Administration will require a retaining wall design by a registered engineer in the State of Missouri.
- Geogrid, footings, or other elements of the retaining wall(s) cannot encroach into the right of way or public easements.
- A Knox Box shall be provided for Each Building.
- All building and life safety issues shall comply with the 2012 International Fire Code and local amendments as adopted by the City of Lee's Summit.

UTILITIES

WATER & SANITARY SEWER
City of Lee's Summit Water Utilities
220 SE Green St
Lee's Summit, MO
(816) 969-1900

ELECTRICITY
Kansas City Power and Light
Phone: 816.471.2575

GAS
Missouri Gas Energy
PO Box 219255
Kansas City, Missouri 64141
Phone: 816.756.5252

TELEPHONE
AT&T
Phone: 800.288.2020

Time Warner Cable
Phone: 816.222.5952

CABLE TV
Comcast
Phone: 816.795.1100

Time Warner Cable
Phone: 816.358.8833

LEGAL DESCRIPTION

Lots 1 and 2, SUMMIT ORCHARD - FIRST PLAT, LOTS 1-4 & TRACT A, a subdivision in Lee's Summit, Jackson County, Missouri, according to the recorded plat thereof recorded August 26, 2016 as Document No. 2016E0079184 in Plat Book 163, Page 87.

BENCHMARK:

- BM-A: □ cut on the top centerline of a concrete curb inlet at back of curb near the NE quadrant of the intersection of NW Ward Rd. and NW Donovan Rd. Elev: 1006.76
- BM-B: □ cut on the top centerline of a concrete curb inlet at back of curb near the SE quadrant of the intersection of NW Ward Rd. and NW Tudor Rd. Elev: 984.97

Oil / Gas Well Note:

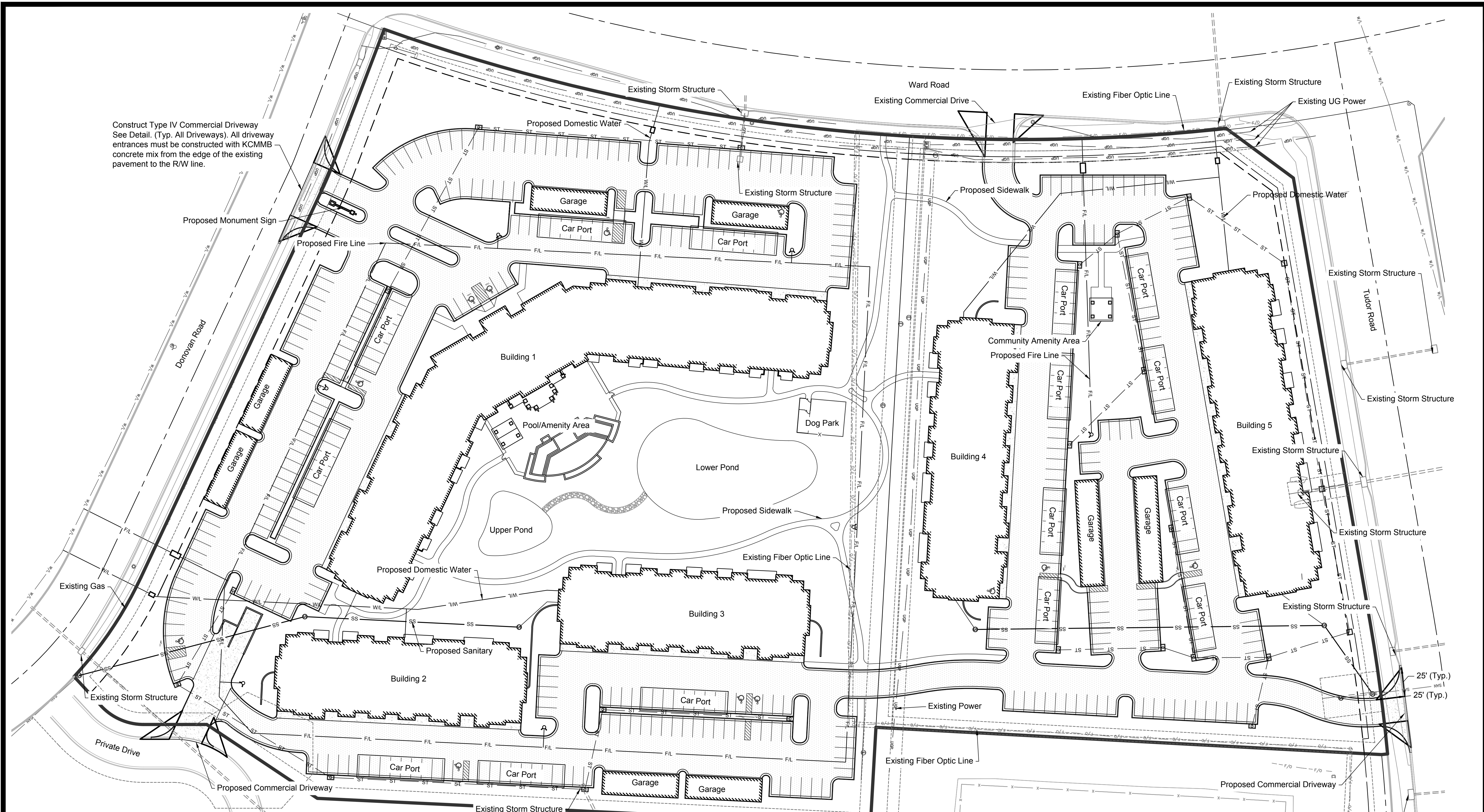
There is no visible evidence, this date, of abandoned oil or gas wells located within the property boundary, as identified in "Environmental Impact Study of Abandoned Oil and Gas Wells in Lee's Summit, Missouri."

Flood Plain Note

We have reviewed the F.E.M.A. Flood Insurance Rate Map Number 29095C0417G, revised January 20, 2017, this tract graphically lies in OTHER AREAS, ZONE X, defined as areas determined to be outside the 0.2% annual chance floodplain.



Know what's below.
Call before you dig.



Construct Type IV Commercial Driveway See Detail. (Typ. All Driveways). All driveway entrances must be constructed with KCMMB concrete mix from the edge of the existing pavement to the R/W line.

FOR NON-PUBLIC WORK

- Screened items indicate a pre-construction topographic survey
- Contraction joints shall conform to APWA Section 2200.
- All concrete to be 4000 psi with 5% (+/- 1%) air entrainment. Cement mixtures with water/cement ratios at 0.5 or below are recommended
- Construction of reinforced concrete pavements shall be in accordance with ACI 330 standard specifications.
- Curing compound to be applied to all concrete surfaces immediately after broom finish.
- Contractor shall reject concrete if it cannot be placed within 90 minutes of batch time expiration time shall be reduced to 60 minutes on high summer temperatures.

PAVEMENT MARKING AND SIGNAGE NOTES

- Parking stall marking stripes shall be four inch (4") wide white stripes. Handicap stall marking shall be furnished at locations shown on plans.
- Traffic control devices and pavement markings shall conform to the requirements of the "Manual of Uniform Traffic Control Devices" and to the City of Lee's Summit.
- Traffic control and pavement markings shall be painted with a white Sherwin Williams S-W traffic marking series b-29/2 or approved equal. The pavement marking shall be applied in accordance with manufacturers recommendations. Apply on a clean, dry surface and at a surface temperature of not less than 70°F and the ambient air temperature shall not be less than 60°F and rising. Two coats shall be applied.
- All pavement markings for handicap stalls and aisles shall be blue.

LAYOUT & PAVING NOTES

- All construction shall conform to the City of Lee's Summit's minimum design standards.
- The contractor shall check existing grades, dimensions, and inverts in the field and report any discrepancies to the architect/engineer prior to beginning work.
- The contractor shall verify the exact location of all existing utilities, take care to protect utilities that are to remain, and repair contractor caused damage according to current local standards and at the contractor's expense. coordinate all construction with the appropriate utility company.
- The contractor shall comply with all local codes, obtain all permits, and pay all fees prior to beginning work.
- Prior to installing, constructing, or performing any work in the public right of way or on the public storm sewer line (including concrete pavement or connecting private drainage systems to the storm sewer), contact City of Lee's Summit public works at 816.969.1800 for inspection of the work. Contact must be made at least 24 hours prior to start of the work.
- Provide a smooth transition between existing pavement and new pavement. Field adjustment of final grades may be necessary. Adjust all utilities prior to installation of pavement.
- The contractor shall protect all trees to remain, in accordance with the specifications. Do not operate or store heavy equipment, nor handle, nor store materials within the driplines of trees or outside the limit of grading.
- Concrete walks and pads shall have a broom finish. All concrete shall be 4,000 p.s.i. unless otherwise noted. Curb ramps, sidewalk slopes, and driveway ramps shall be constructed in accordance with all current local requirements. If applicable, the contractor shall request inspection of sidewalk and ramp forms prior to placement of concrete.
- All damage to existing asphalt pavement to remain which results from new construction shall be replaced with like materials at contractor's expense.
- Dimensions are to the back of curb, or edge of concrete, unless otherwise noted.
- Excess material shall be disposed of by the contractor off the owner's property at no additional cost in a legal manner.
- Maintain one set of as-built drawings on the job site for distribution to the engineer upon completion.
- Concrete curb at all concrete paving and both side of drive-in ramps shall be integral.
- Contractor shall be responsible for mud and debris on public ROW which shall be removed in a timely manner daily.

SITE DATA TABLE

PROPERTY INFO:
Existing Zoning: PMIX
Total Land Area: 12.779 Acres, 556,641 sqft
Proposed Street Right-of-Way: 0.00 Acres
Net Land Area: 12.779 Acres, 556,641 sqft
Proposed Use: Multifamily Residential

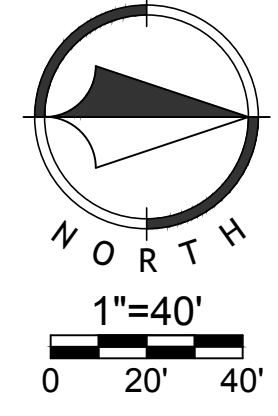
BUILDING INFO:
Building 1: Type A - N (4/4 - 104 Units)
Buildings 2 & 3: Type D (4/5 - (2) 51 Units)
Building 4: Type C (4/5 - 59 Units)
Building 5: Type B (4/5 - 58 Units)

PARKING INFO:

| | |
|---------------------------------|---------------------|
| Studio Apartment | = 35 Units |
| 1 Bedroom Apartment | = 165 Units |
| 2 Bedroom Apartment | = 123 Units |
| Total 1-2 Bedroom Apartments | = 323 Units |
| 1.5 Stalls / 1-2 BR Unit | = 485 Spaces |
| 0.5 Stalls / Unit (Visitor) | = 162 Spaces |
| Total Parking Required | = 647 Spaces |
| Surface Stalls Provided | = 317 Spaces |
| Carport Stalls Provided | = 95 Spaces |
| Detached Garage Stalls Provided | = 52 Spaces |
| Attached Garage Stalls Provided | = 93 Spaces |
| Total Parking Provided | = 557 Spaces |
| ADA Parking Required | = 11 Spaces |
| ADA Parking Provided | = 11 Spaces |

See NSPJ Letter dated 04/13/18 to Mike Weisenborn.

| | |
|----------------------------|---------------|
| Total Floor Area | = 79,105 SF |
| Total Impervious Area | = 7.001 Acres |
| Floor Area Ratio (FAR) | = 0.142 |
| Dwellings (Units) Per Acre | = 27.86 |

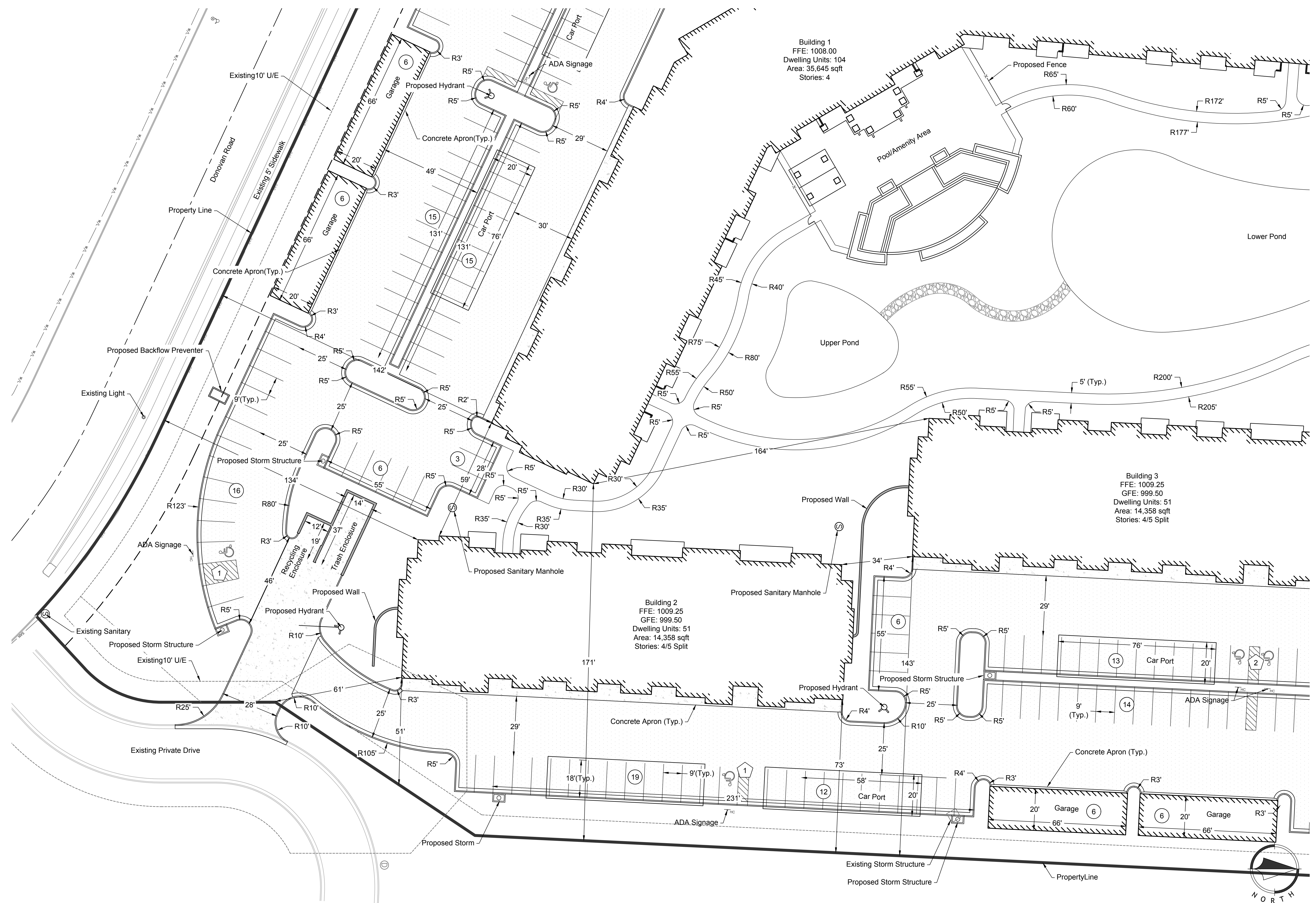


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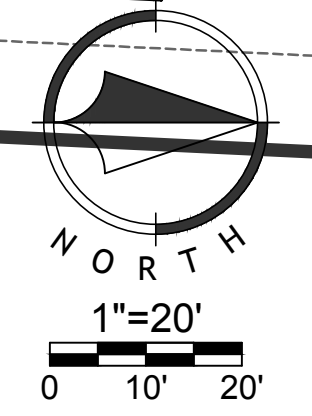


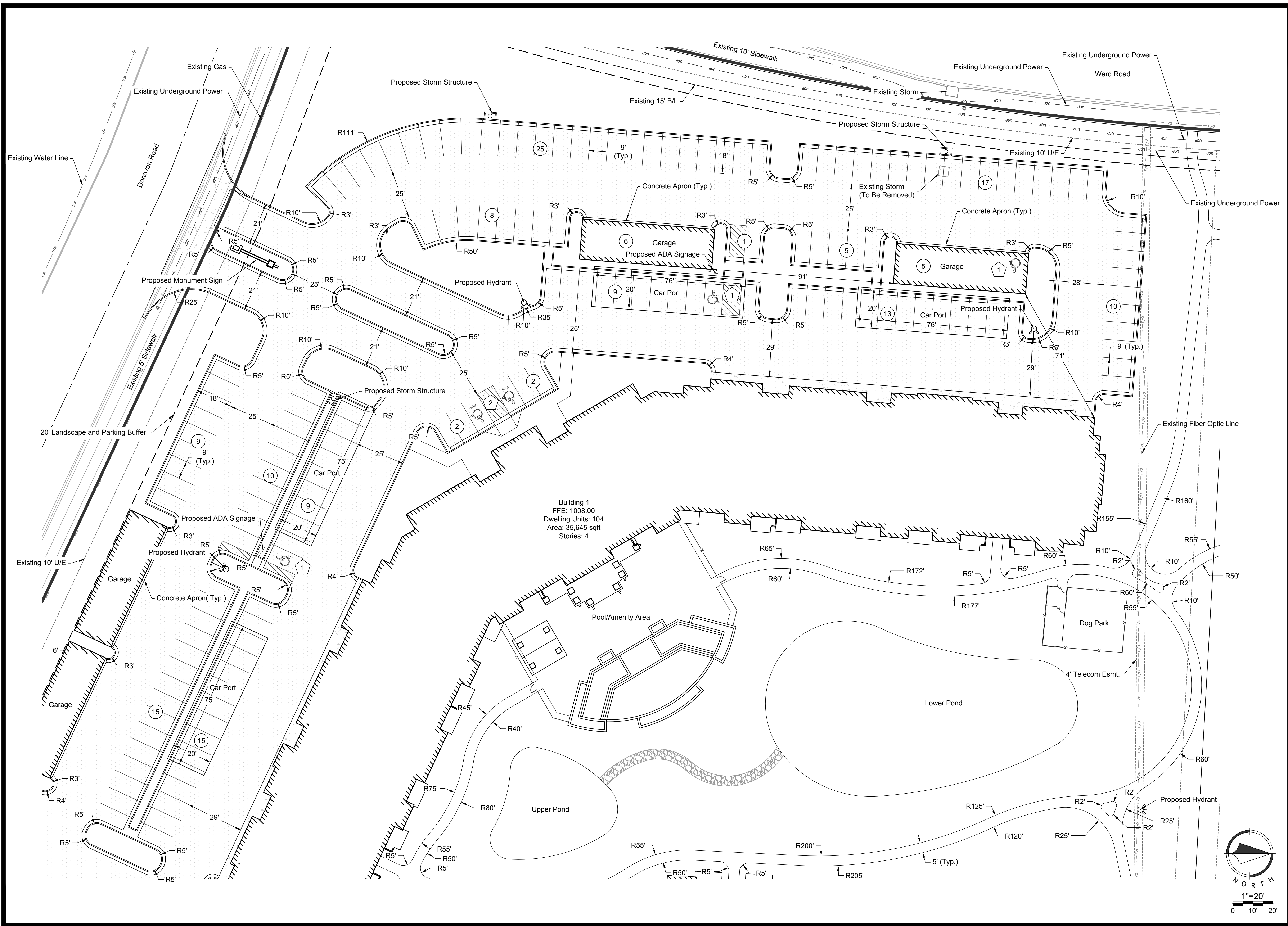
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 MITCHELL E. SLUTTER
 LICENSED PROFESSIONAL ENGINEER
 NUMBER PE-2002003418
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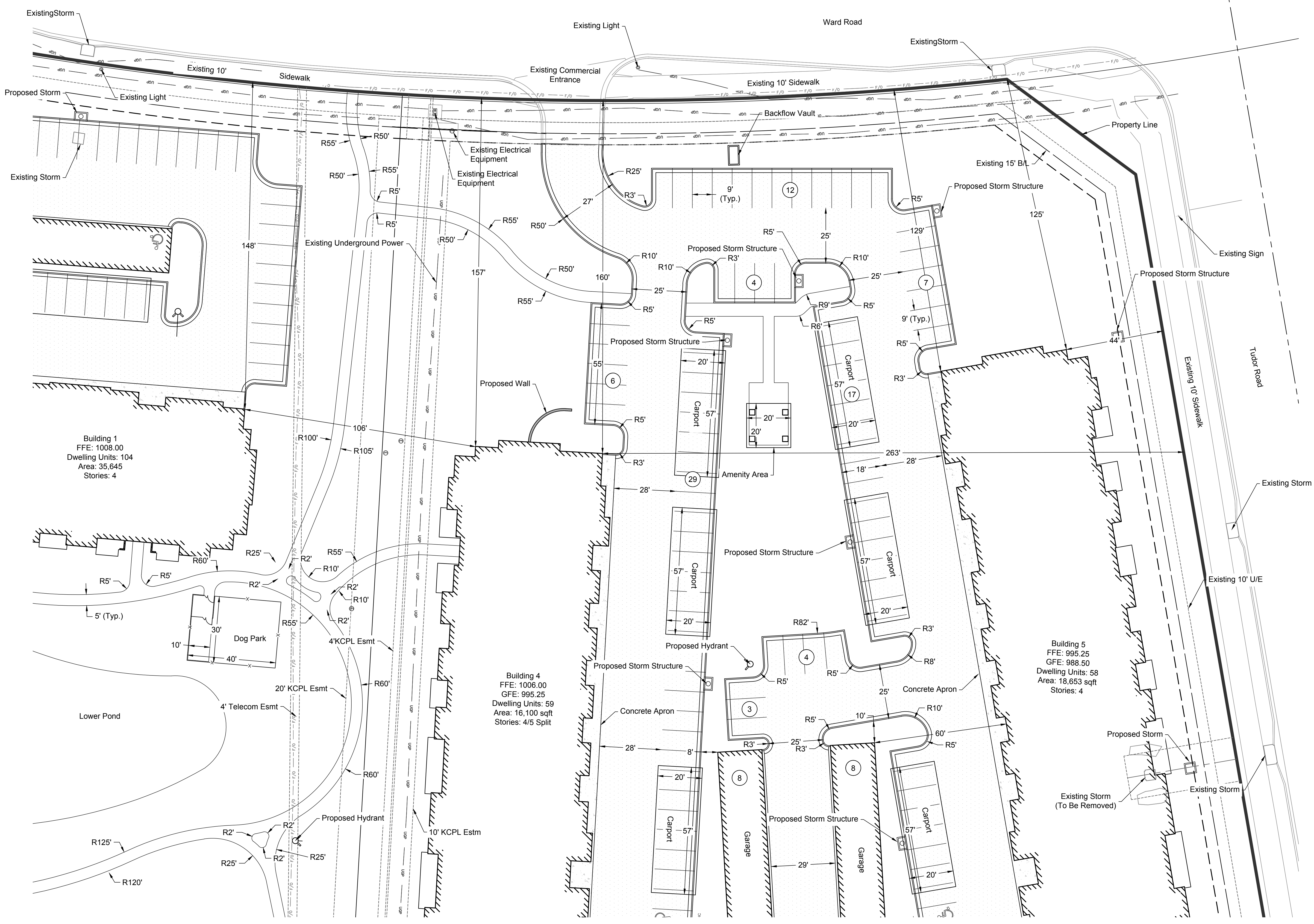
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STATE OF MISSOURI
 MITCHELL E. SLUTTER
 LICENSE NUMBER
 PE-2002003418
 PROFESSIONAL ENGINEER

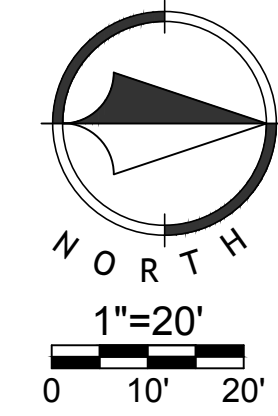
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Professional Engineer Seal for Mitchell E. Slutter, License No. PE-2002003418, State of Missouri, dated 12/13/18.

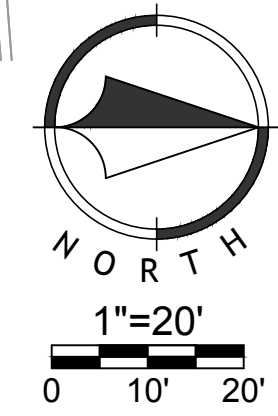


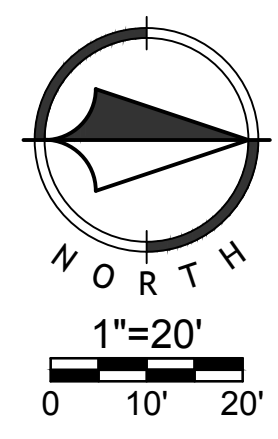
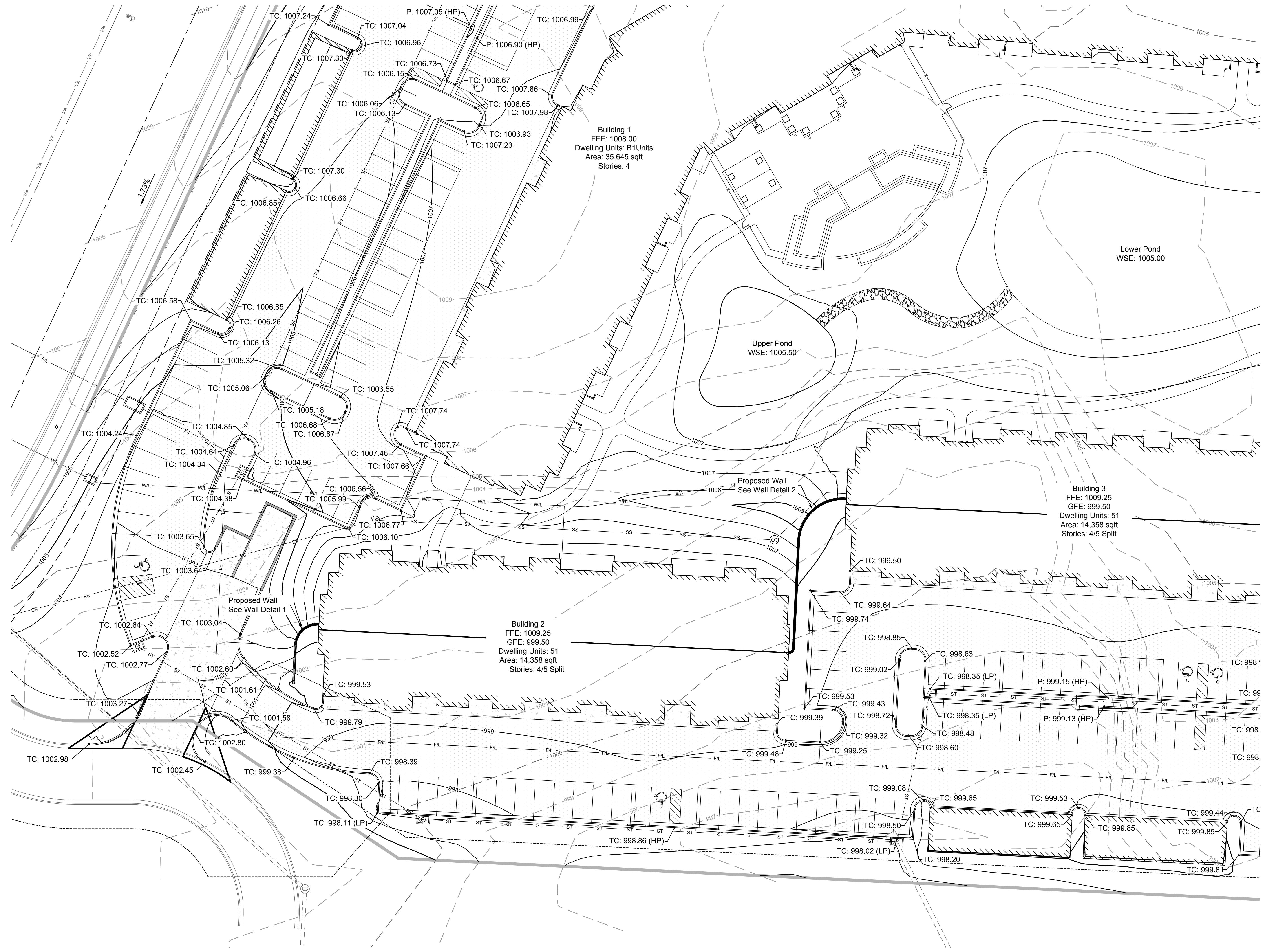
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MITCHELL E. SLUTTER
REGISTERED PROFESSIONAL ENGINEER
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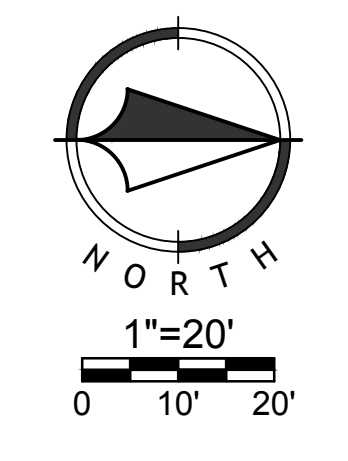
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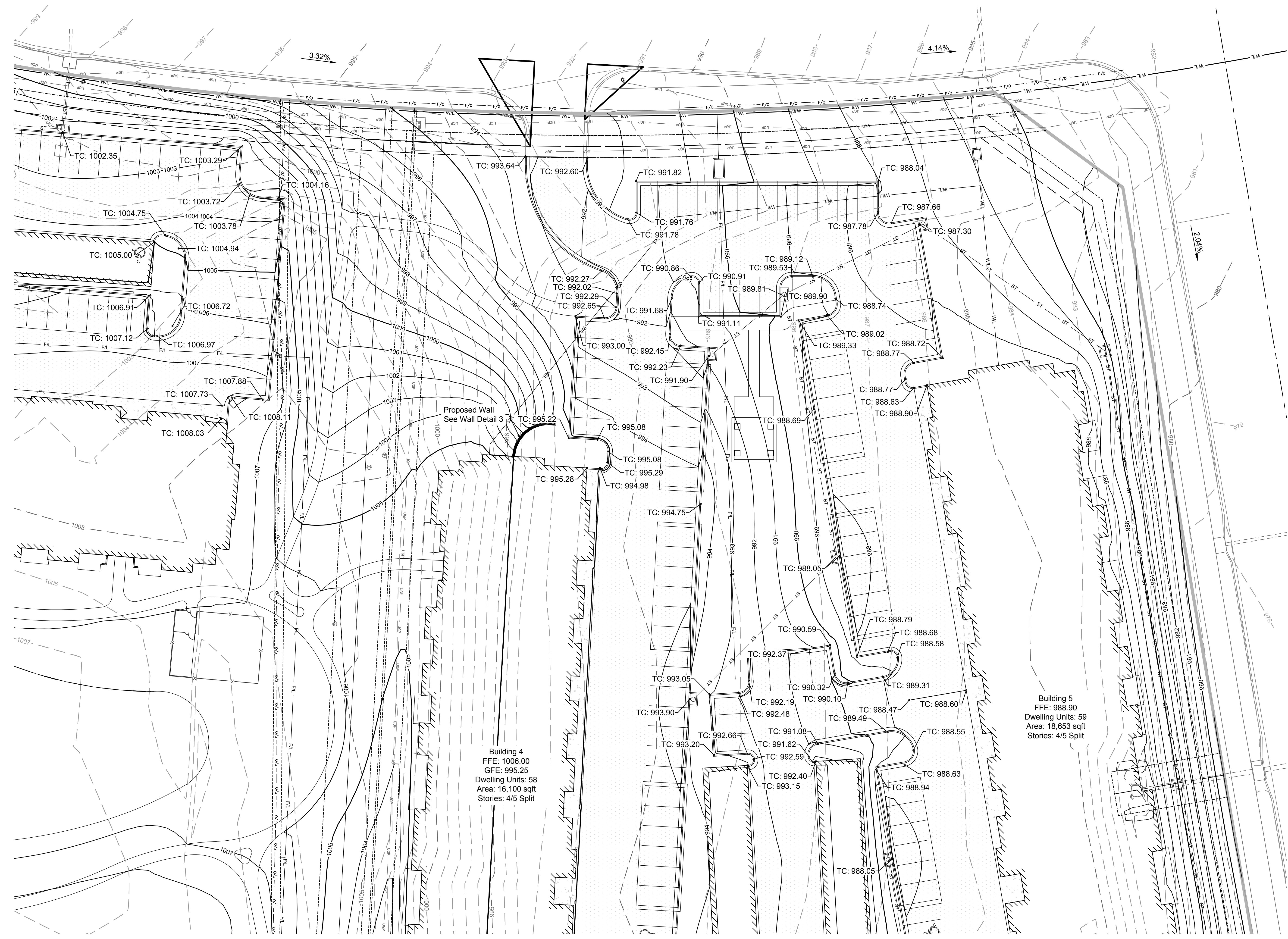
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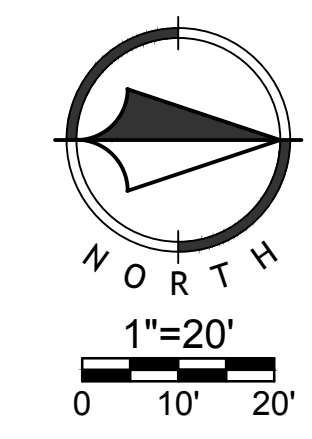


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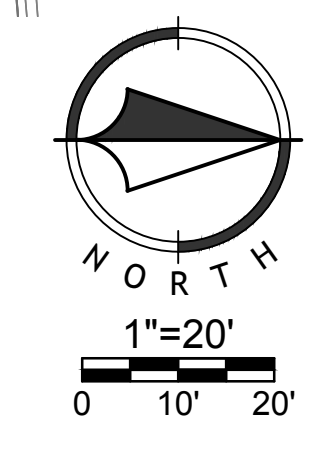
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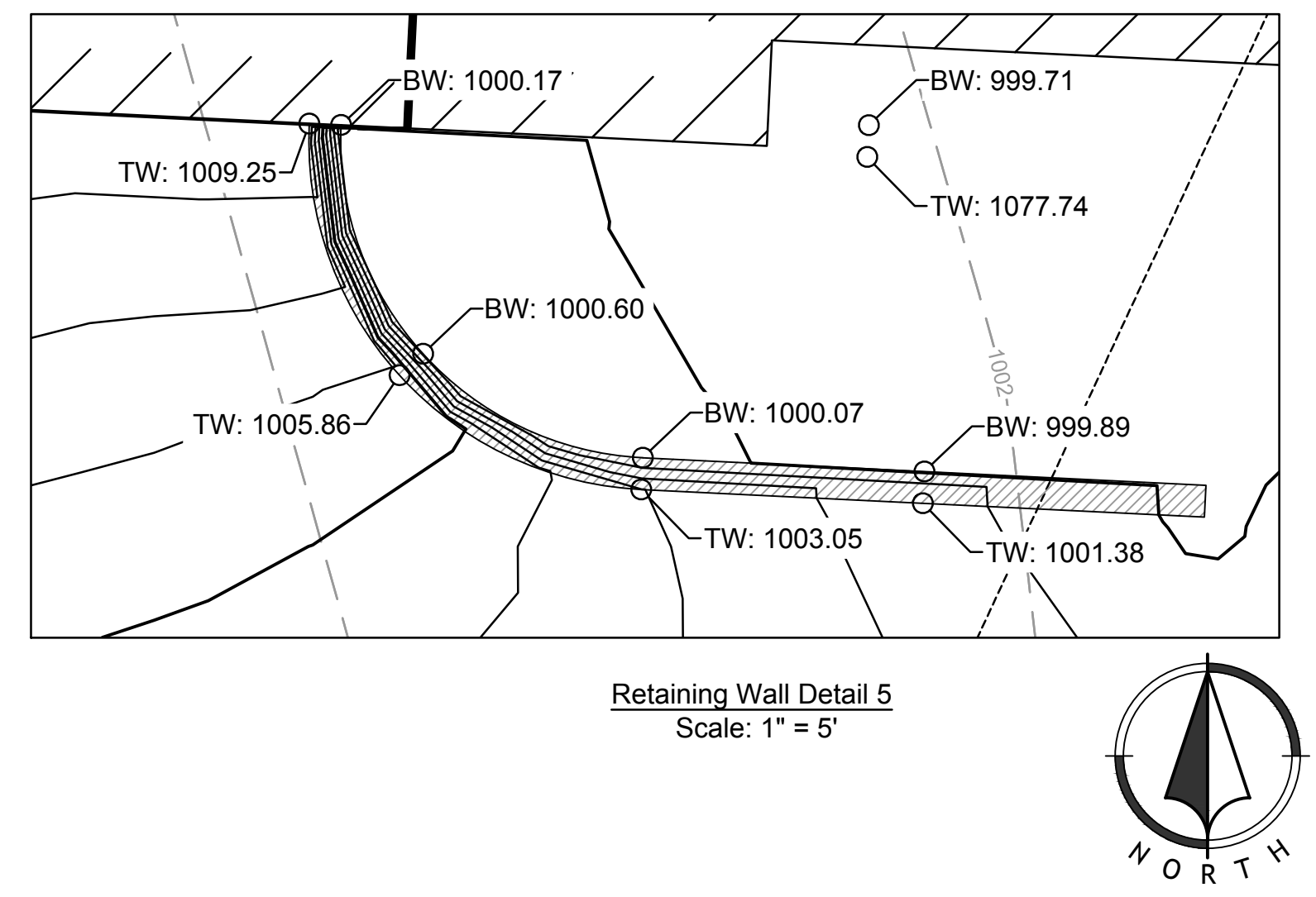
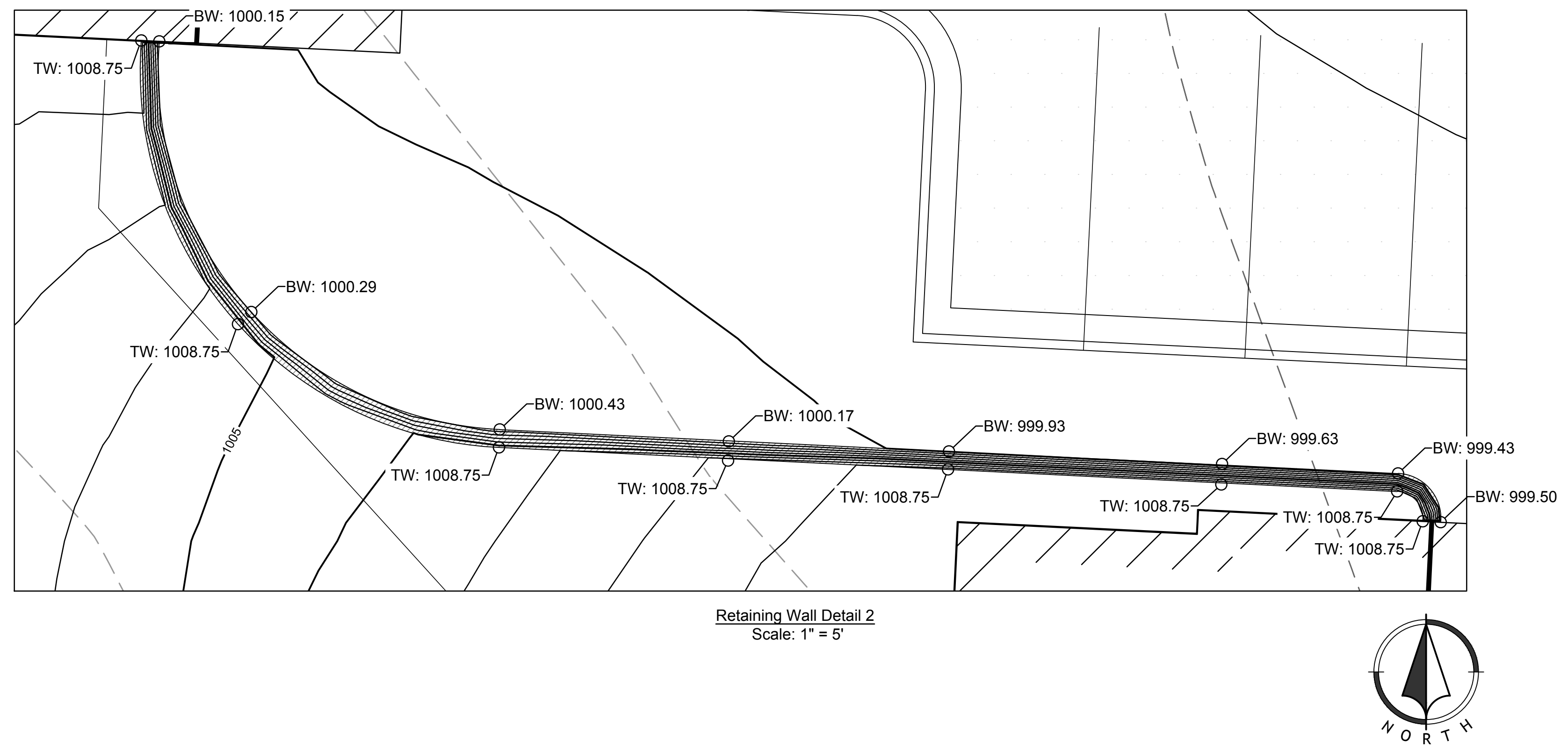
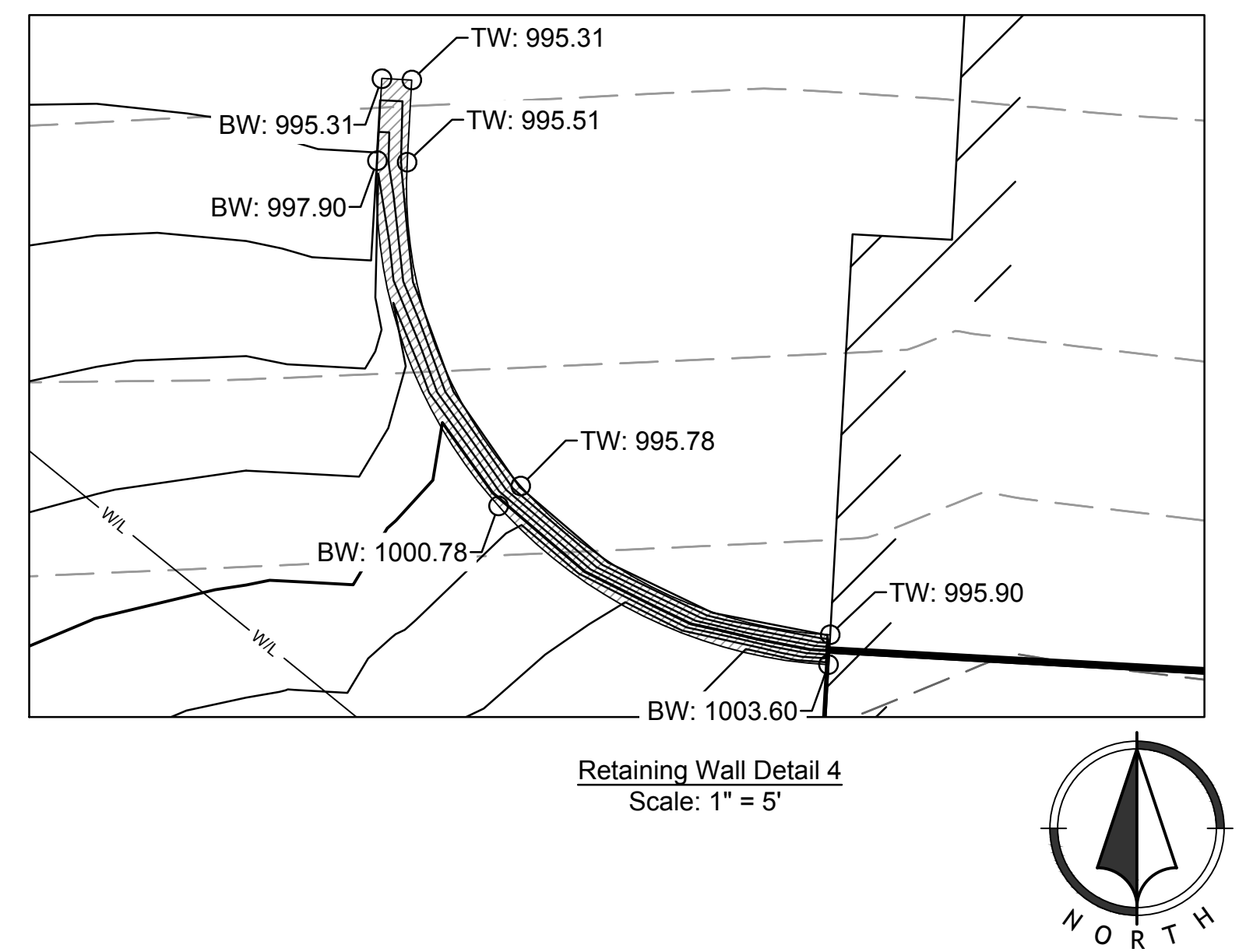
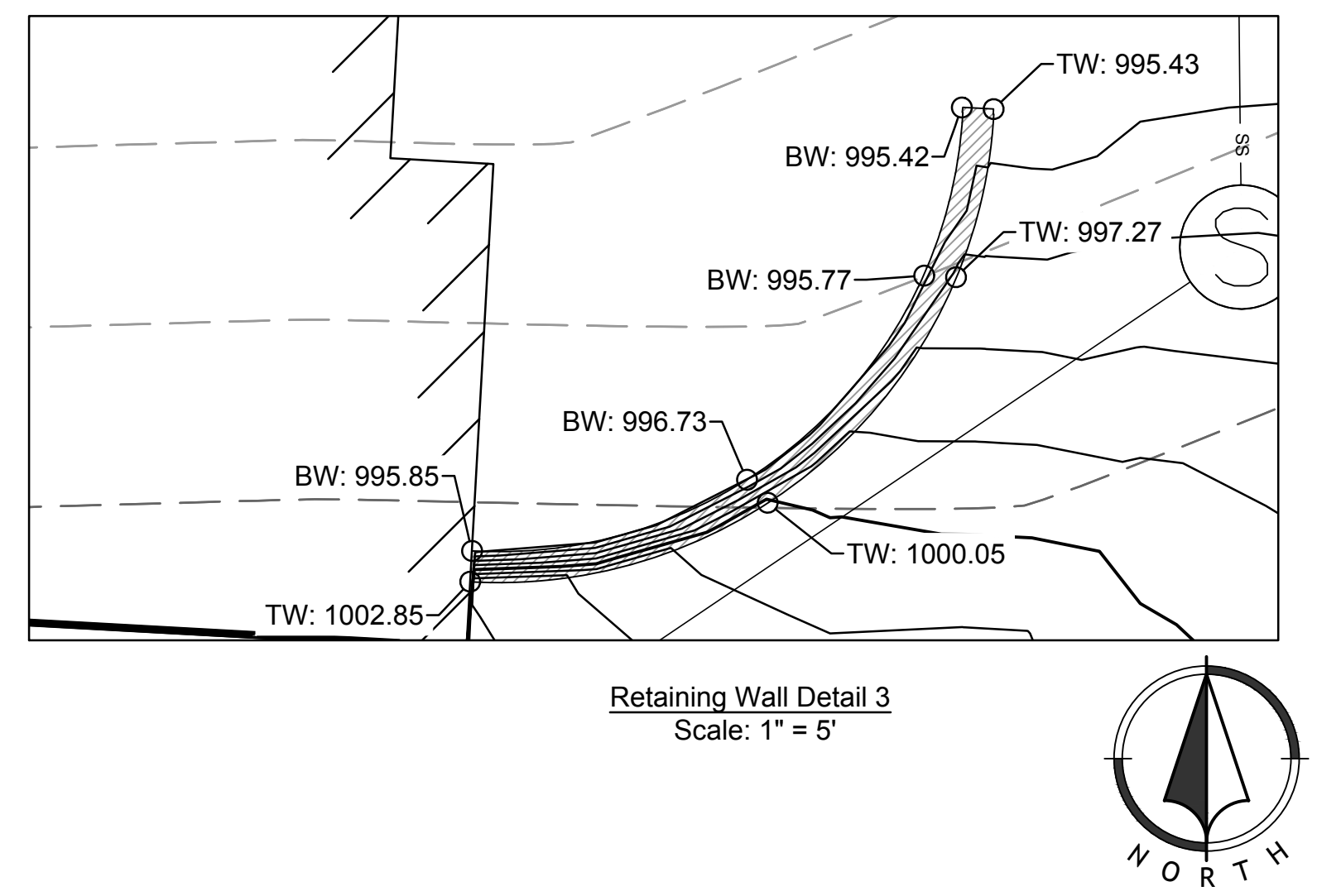
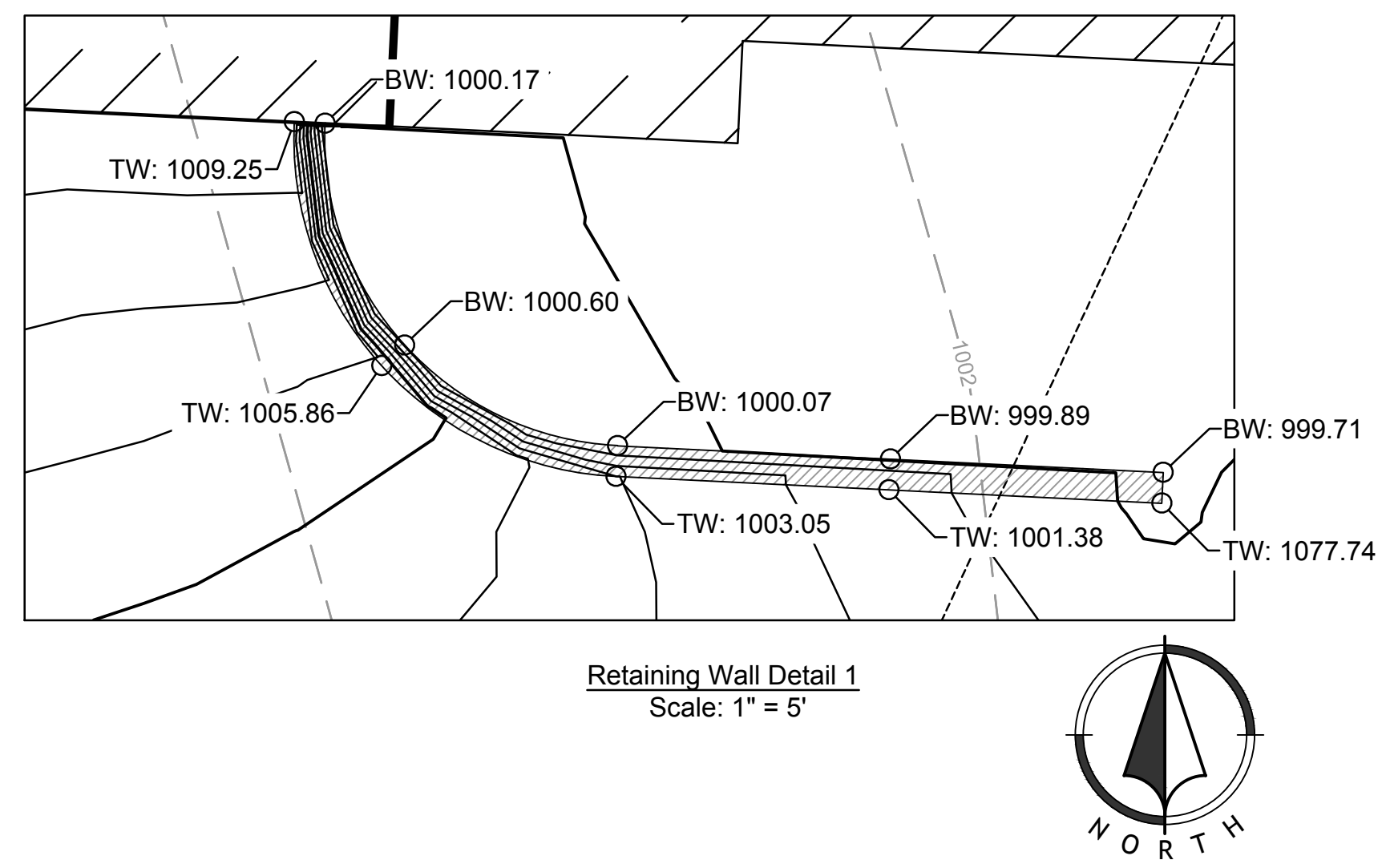


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Note:
All retaining walls shown shall be 8" modular block walls, buff color.

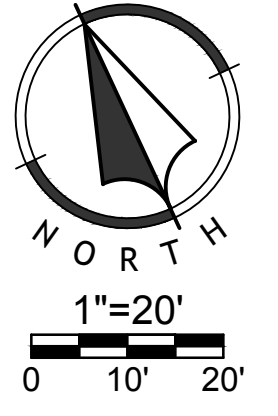
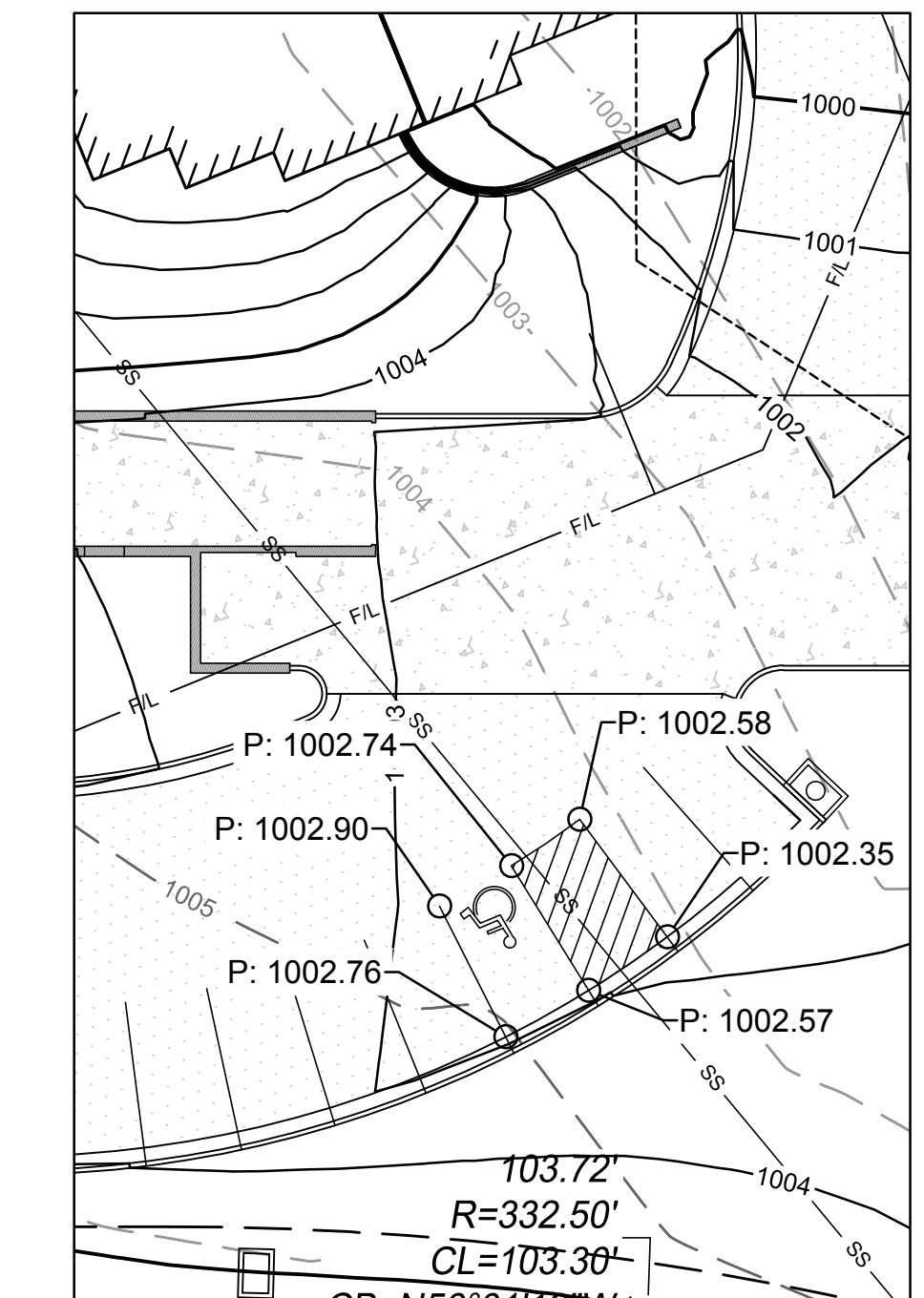
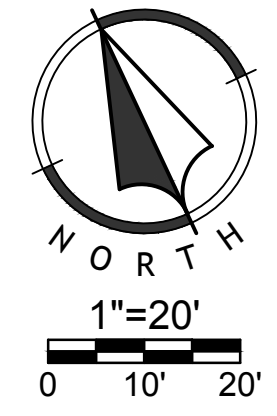
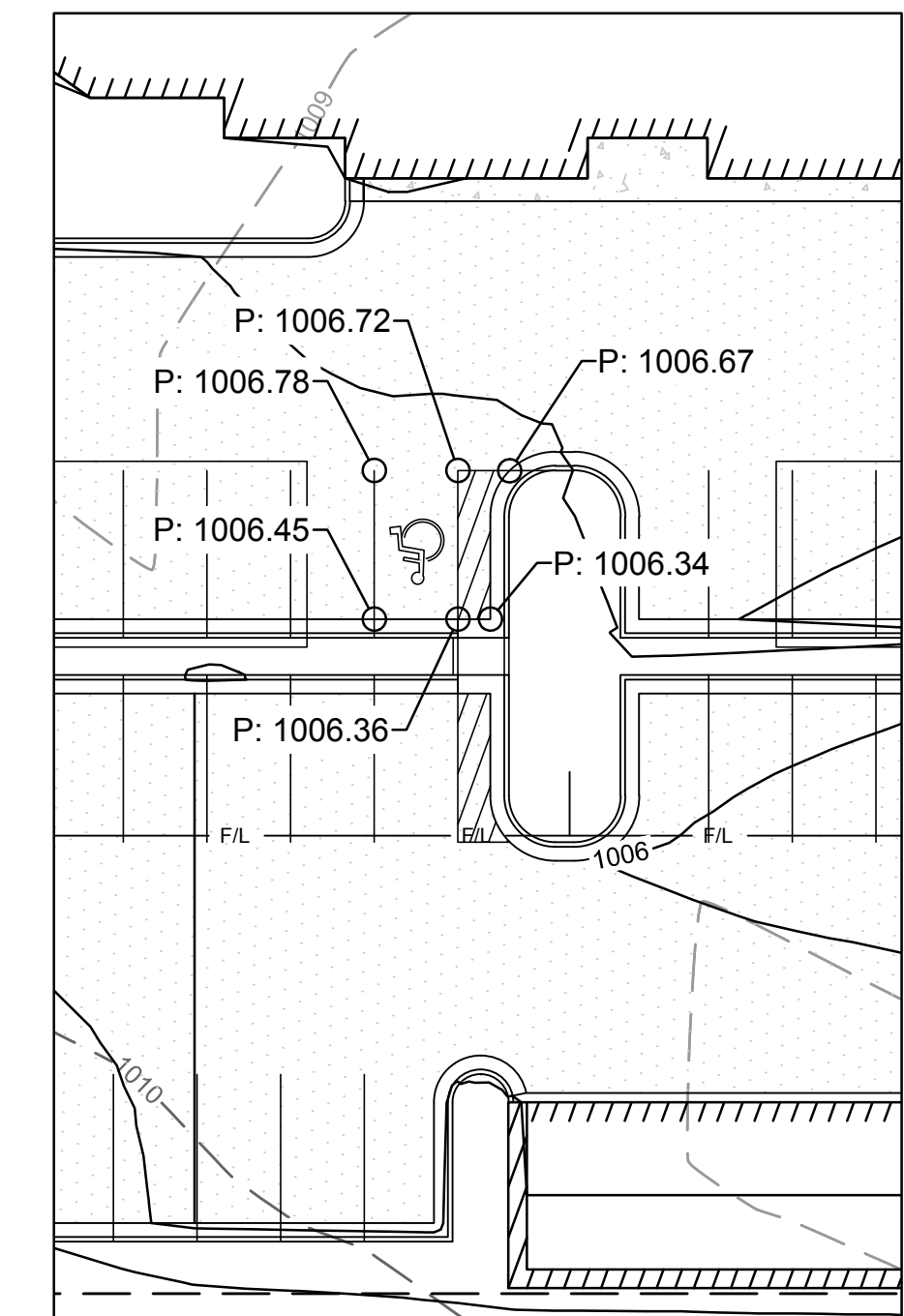
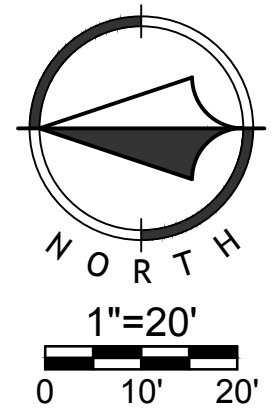
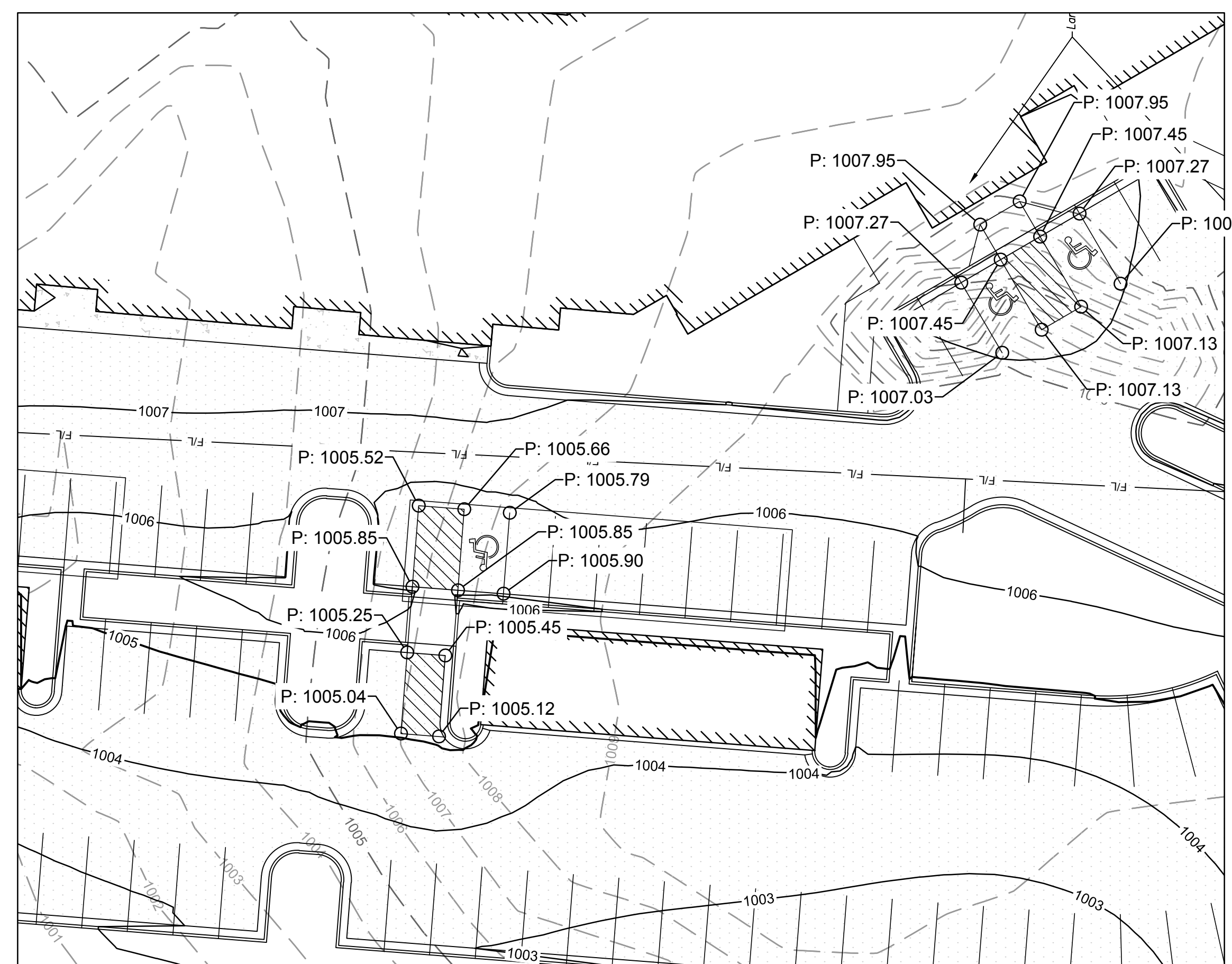
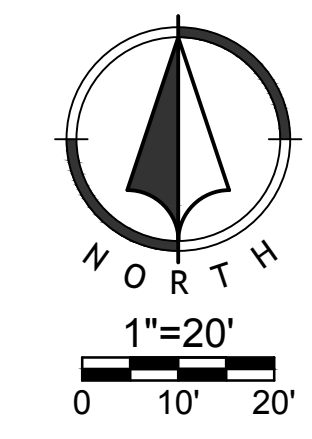
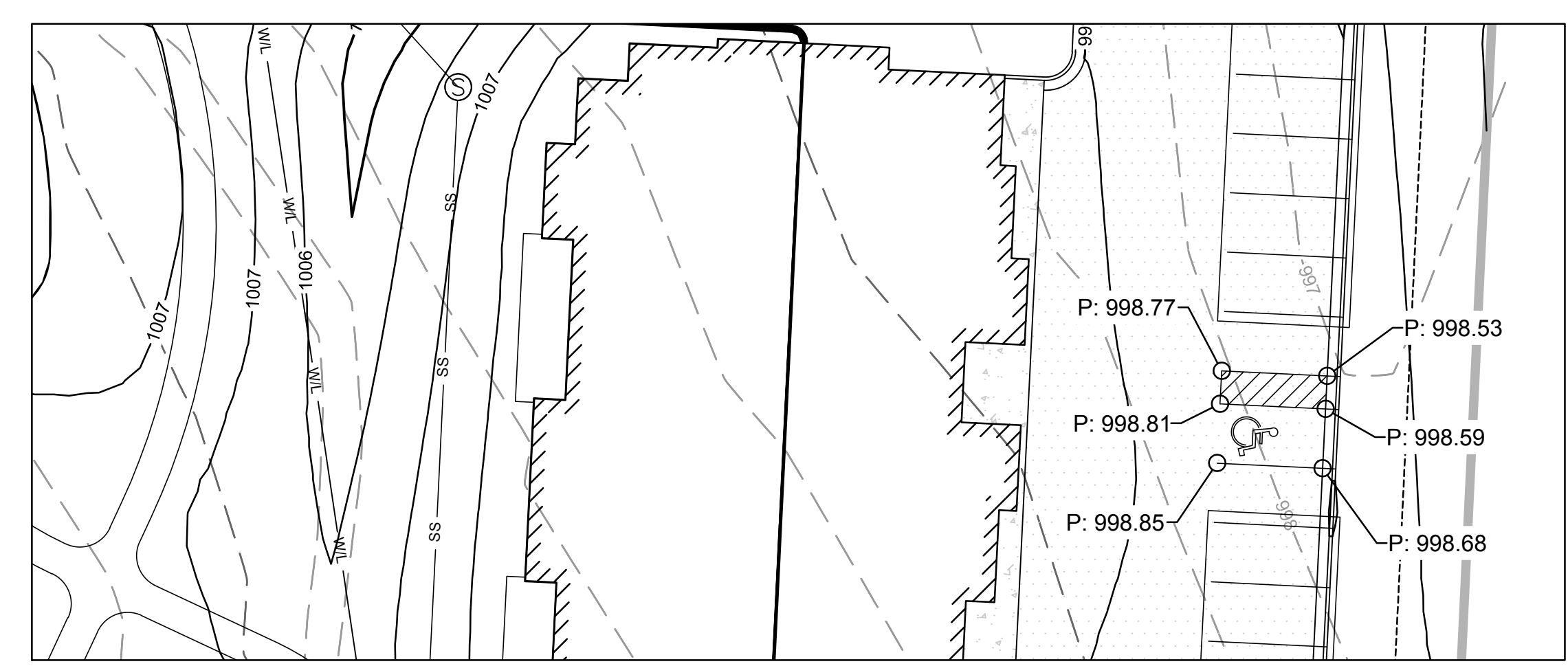
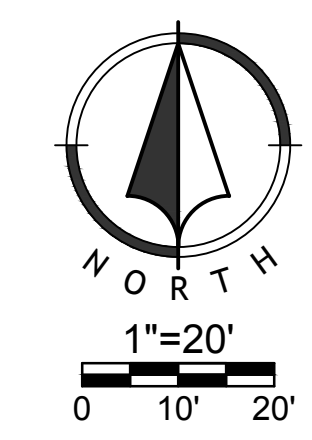
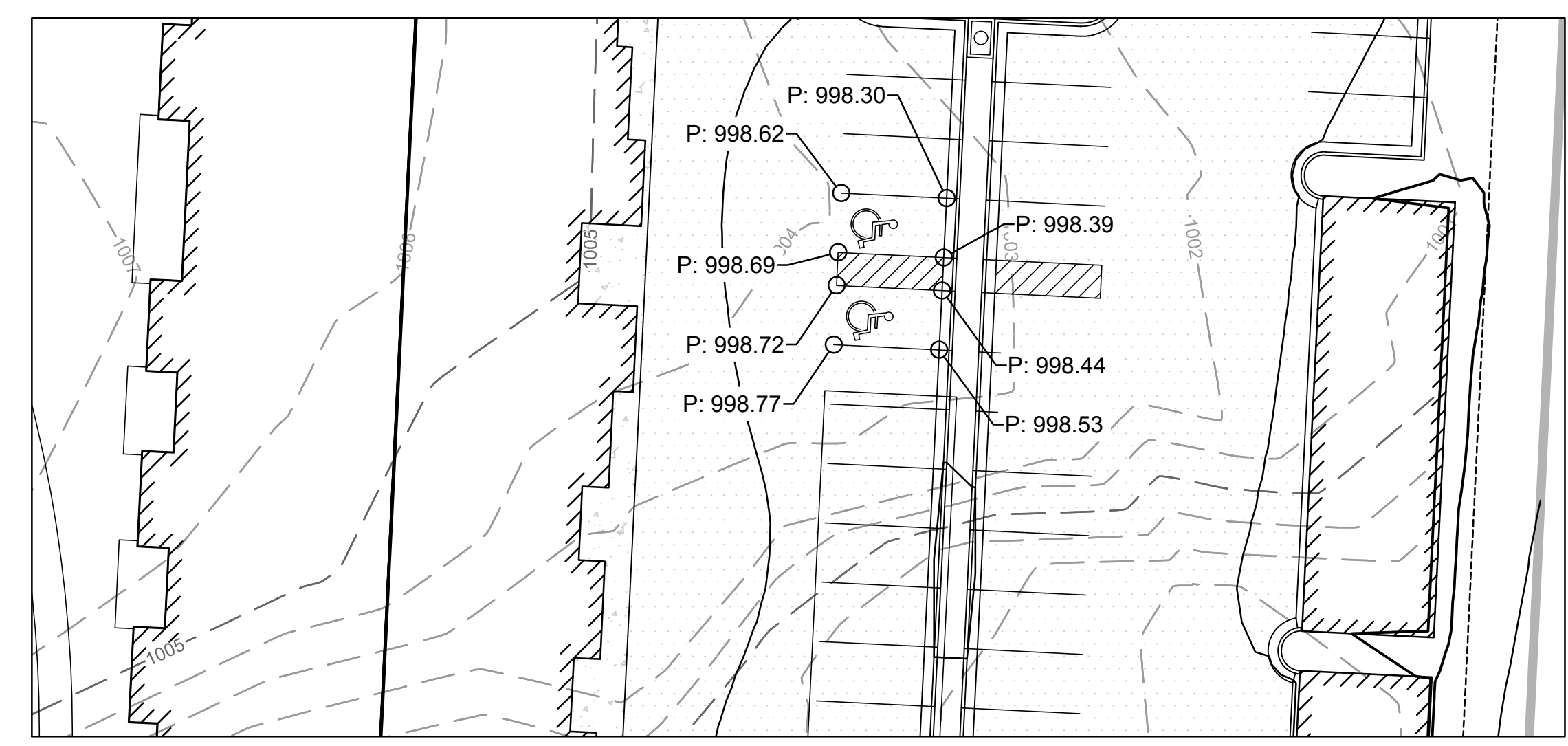
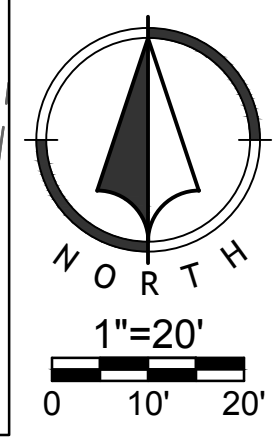
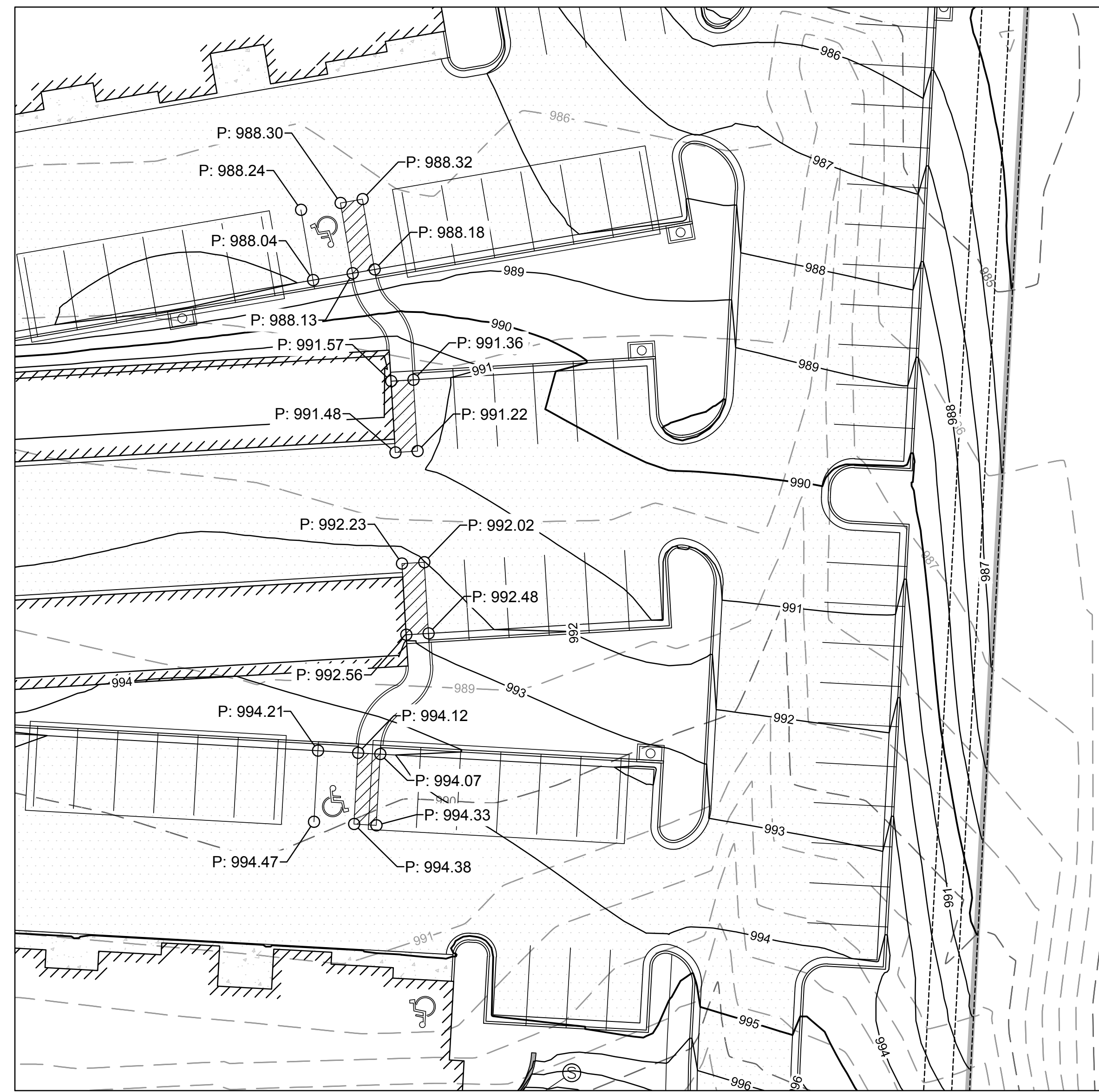
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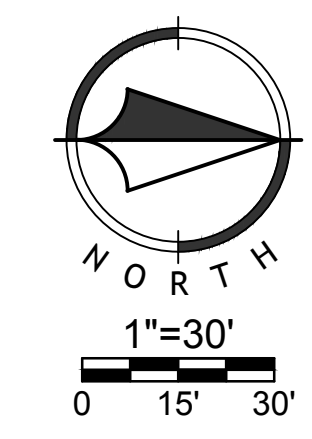
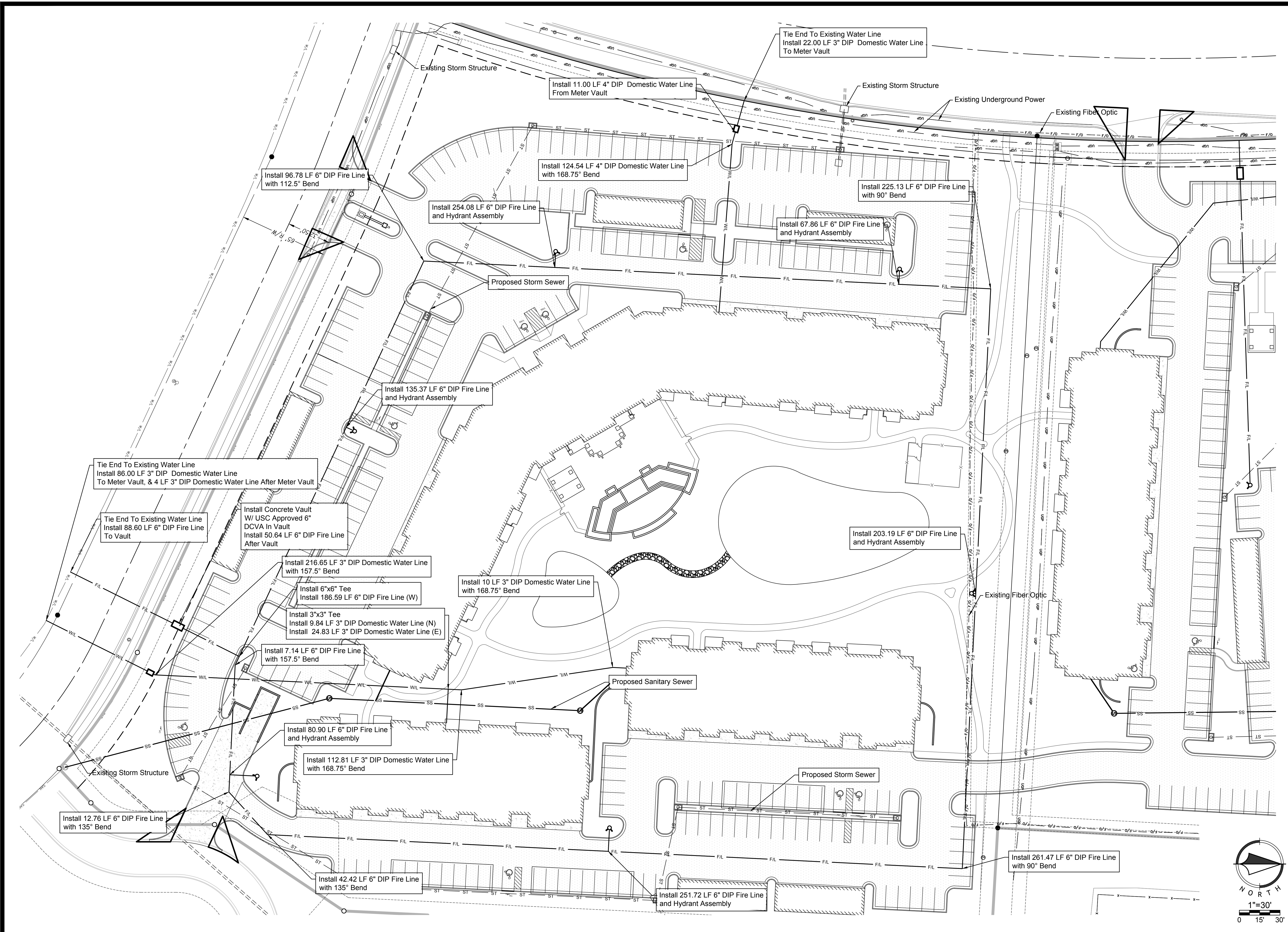
MISSOURI CERTIFICATE OF AUTHORITY NO. 2010035350
 STATE OF MISSOURI
 MITCHELL E. SLUTTER
 PROFESSIONAL ENGINEER
 LICENSE NUMBER
 PE-2020030418
 APR 13 2018

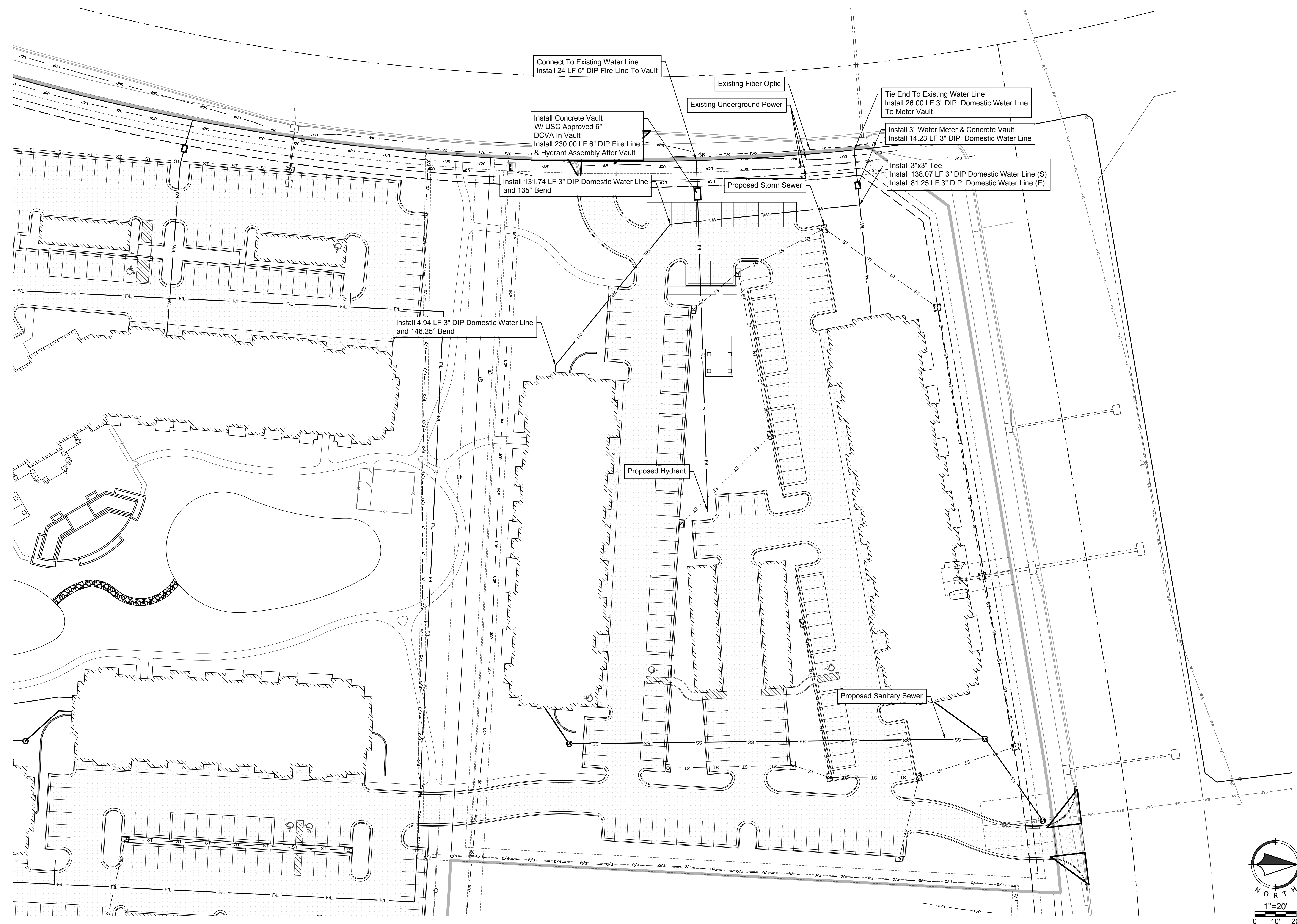
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 PROFESSIONAL ENGINEER
 NUMBER FE-2002030418
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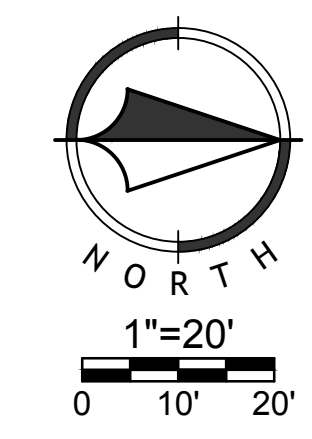
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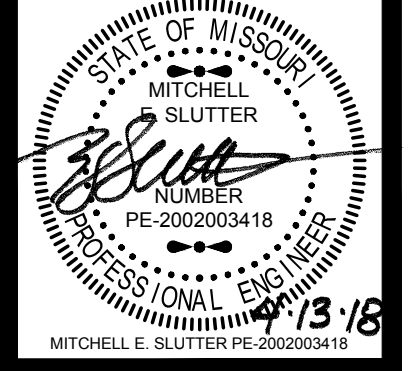
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MITCHELL E. SLUTTER
 PE-2000035630
 APR 13 2018

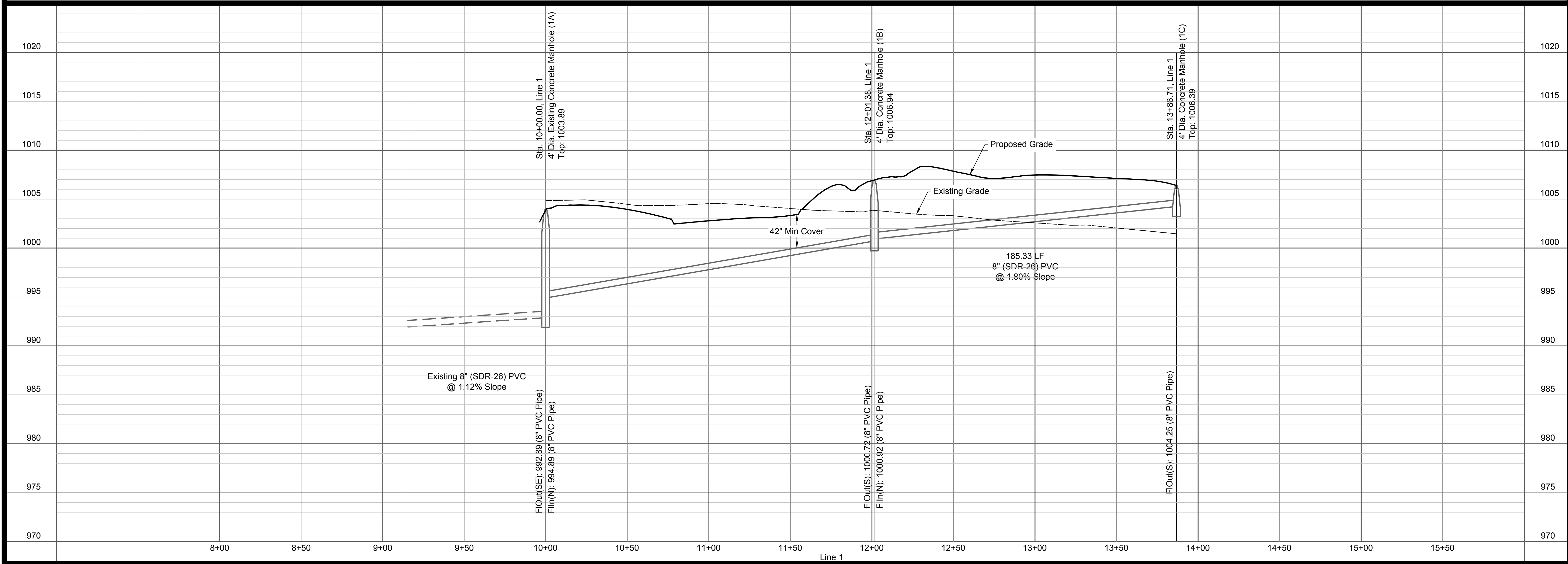
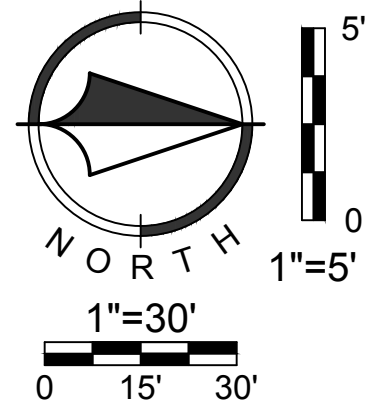
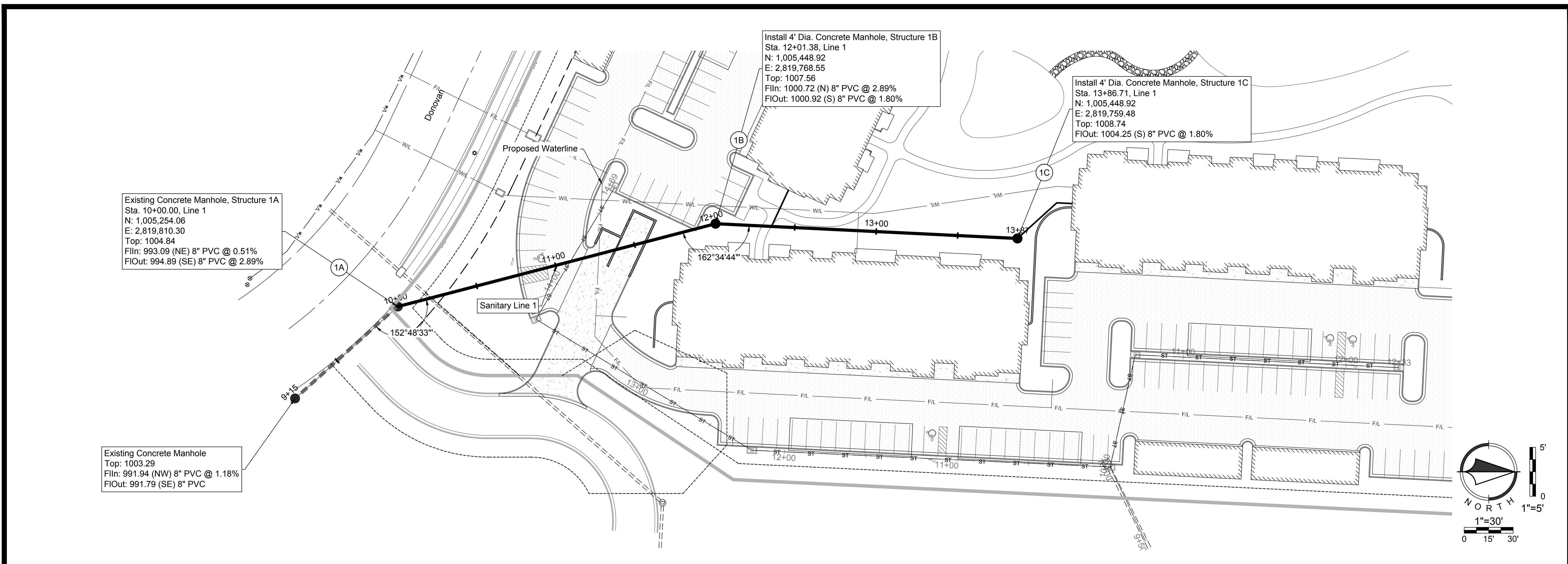


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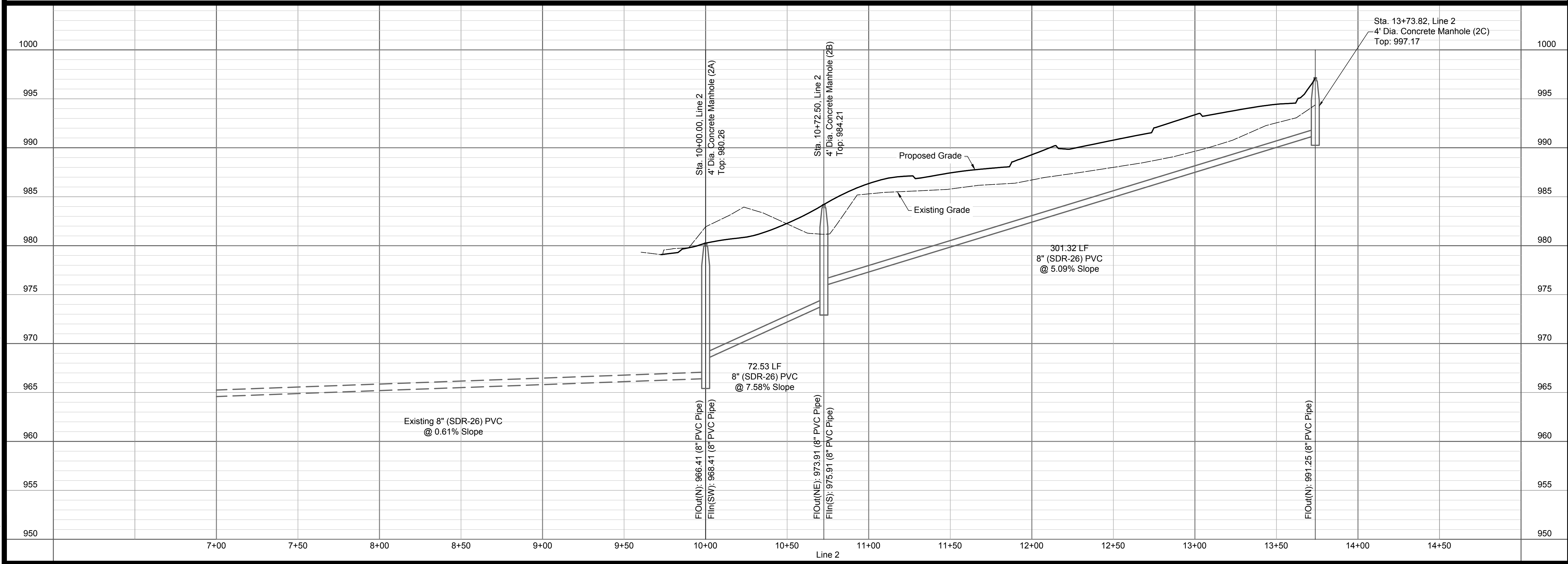
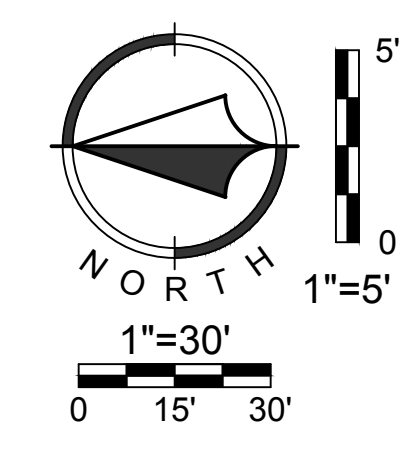
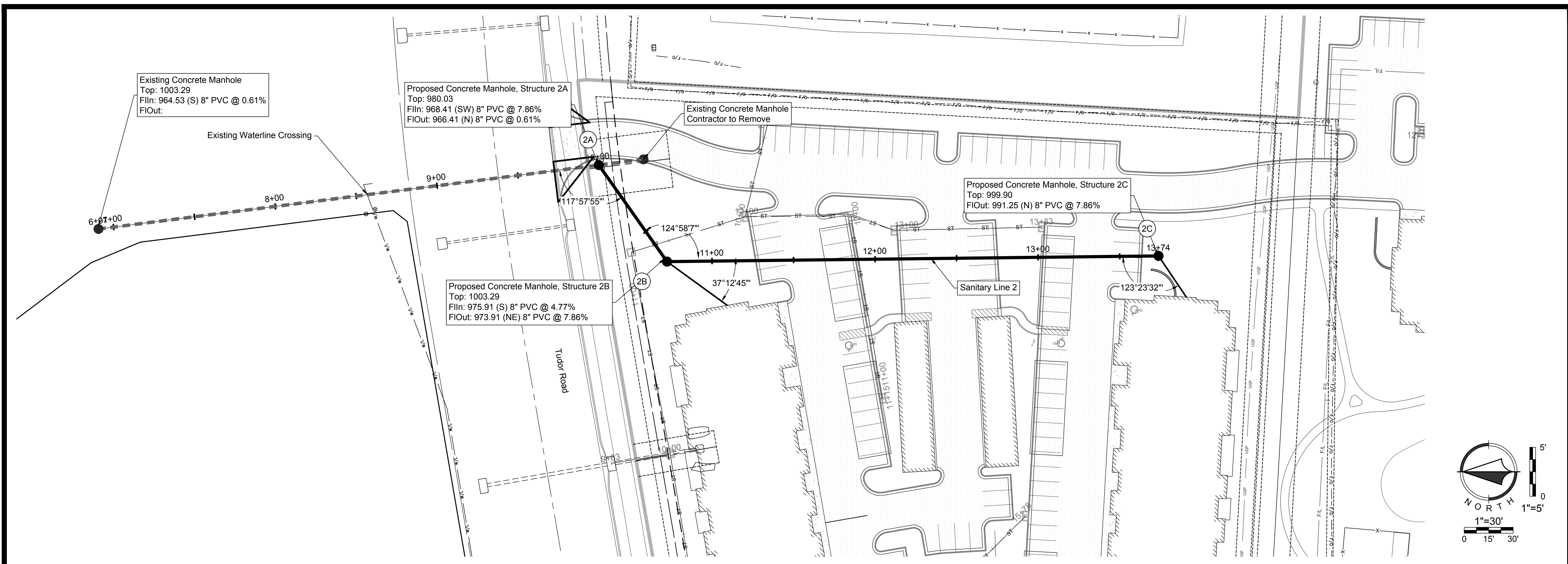
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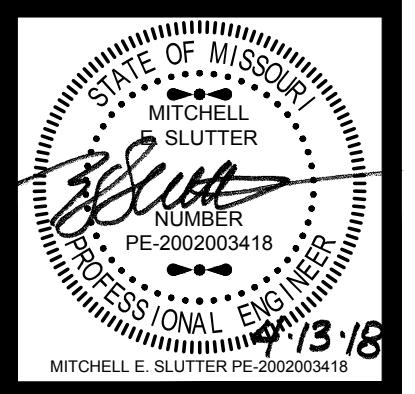


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STATE OF MISSOURI
 MITCHELL E. SLUTTER
 PROFESSIONAL ENGINEER
 NUMBER PE-2002003418
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 MITCHELL E. SLUTTER PE-2002003418

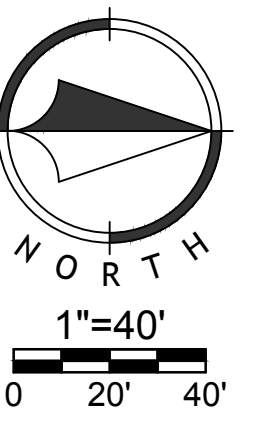


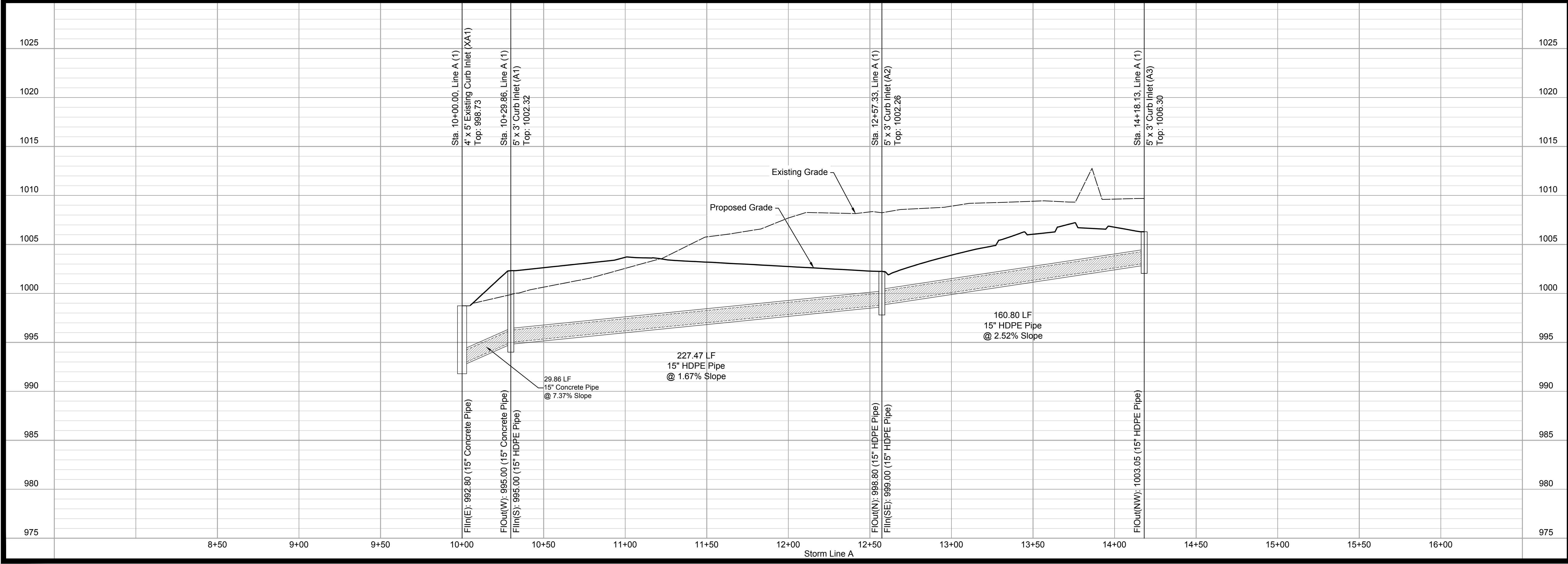
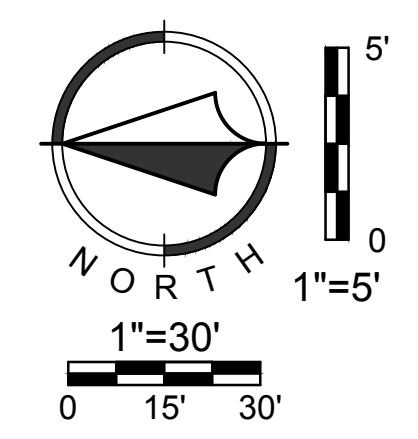
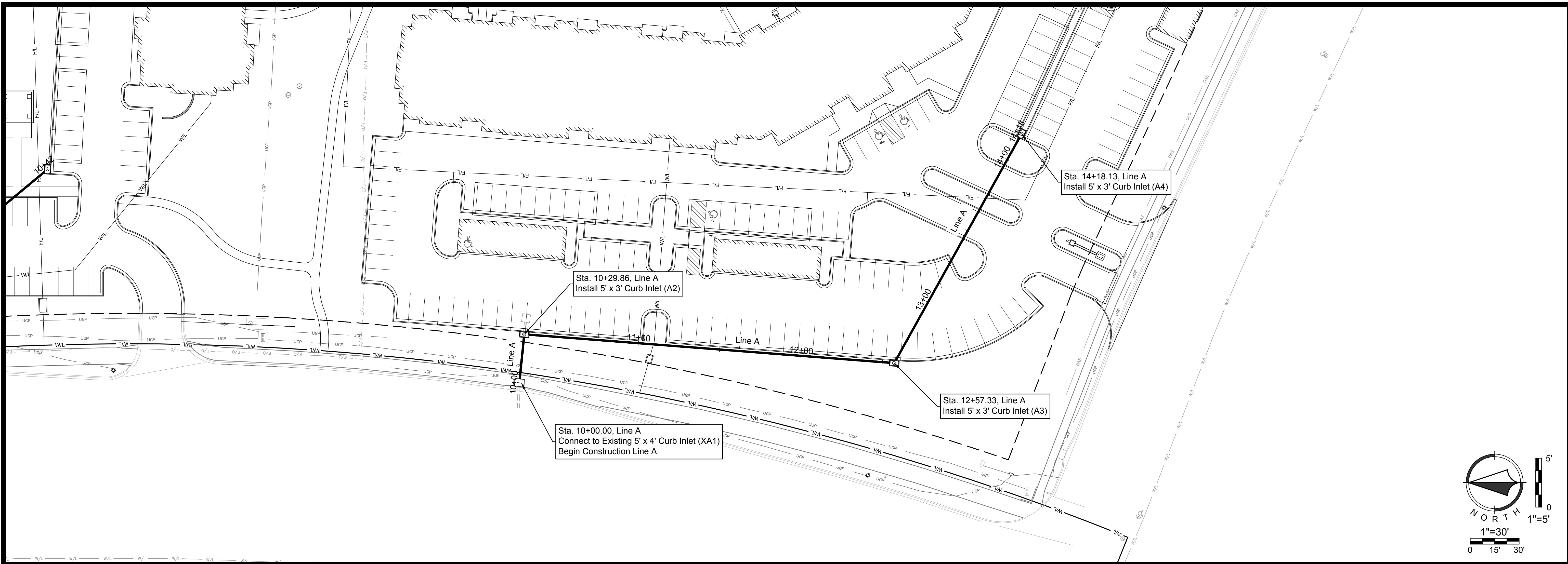
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- Existing Major Contour
- - - Existing Minor Contour
- ___ Proposed Major Contour
- ___ Proposed Minor Contour

LEGEND:

- XX
XX Drainage Area to Structure
- XX
XX Structure Description





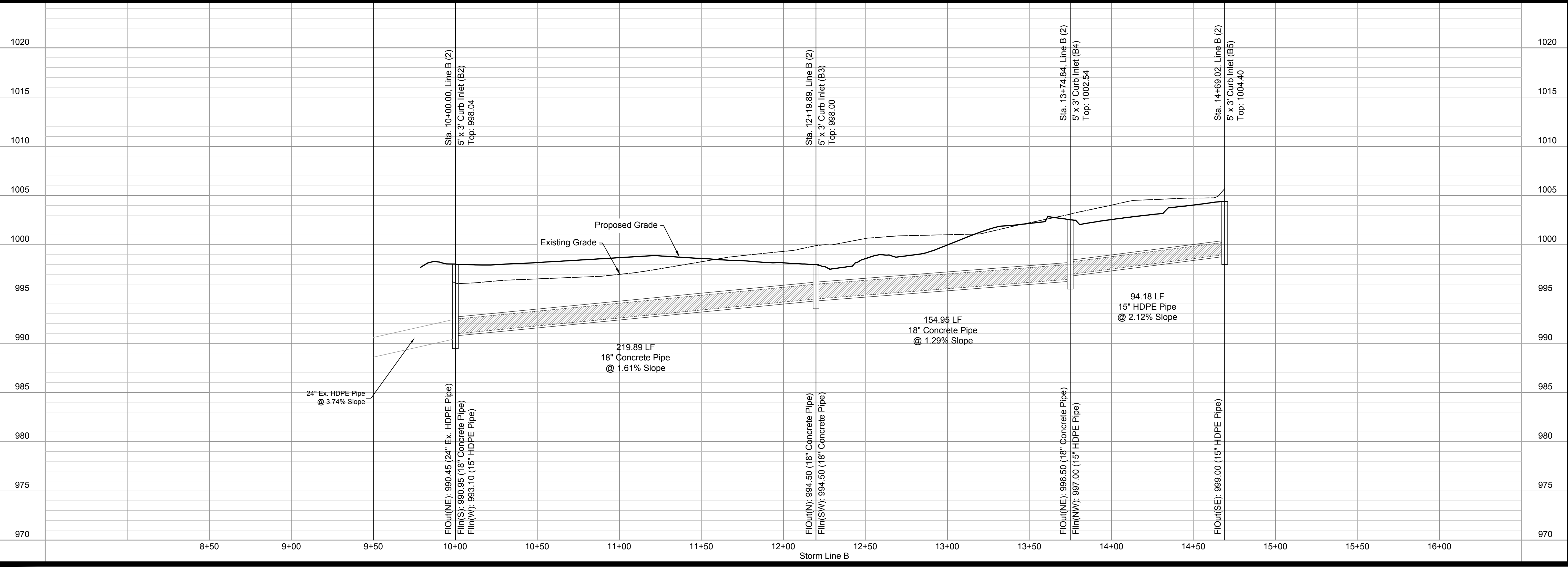
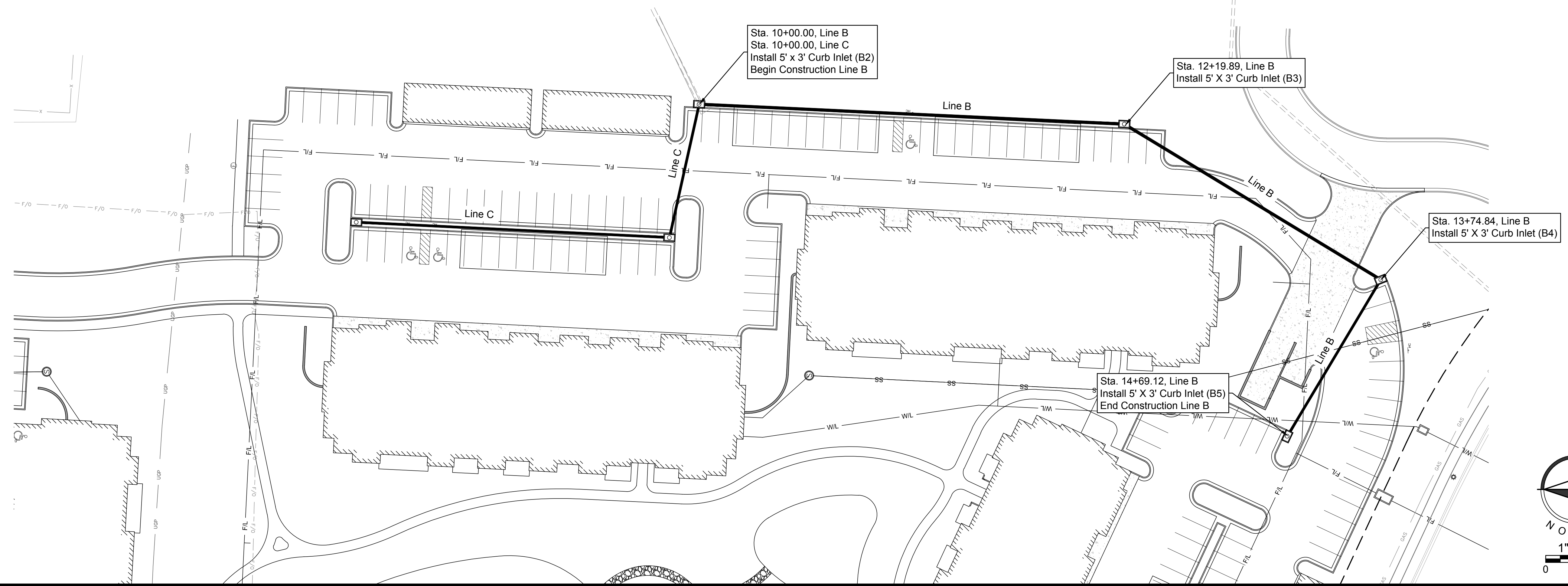
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| 1 | AP7 | MES 04/13/18 | ORIGINAL SUBMITTAL |
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REGISTERED PROFESSIONAL ENGINEER
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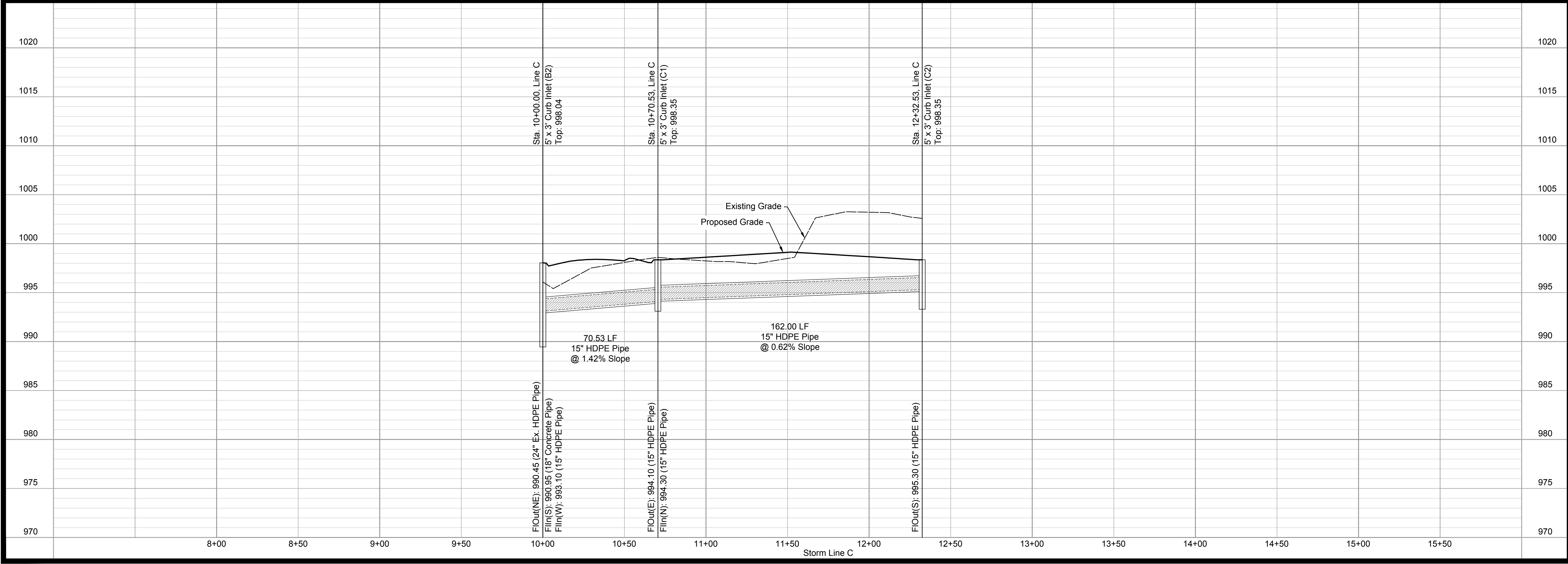
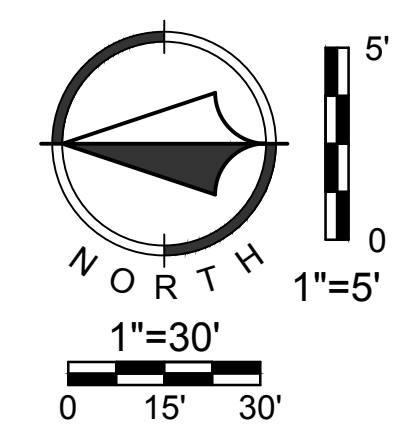
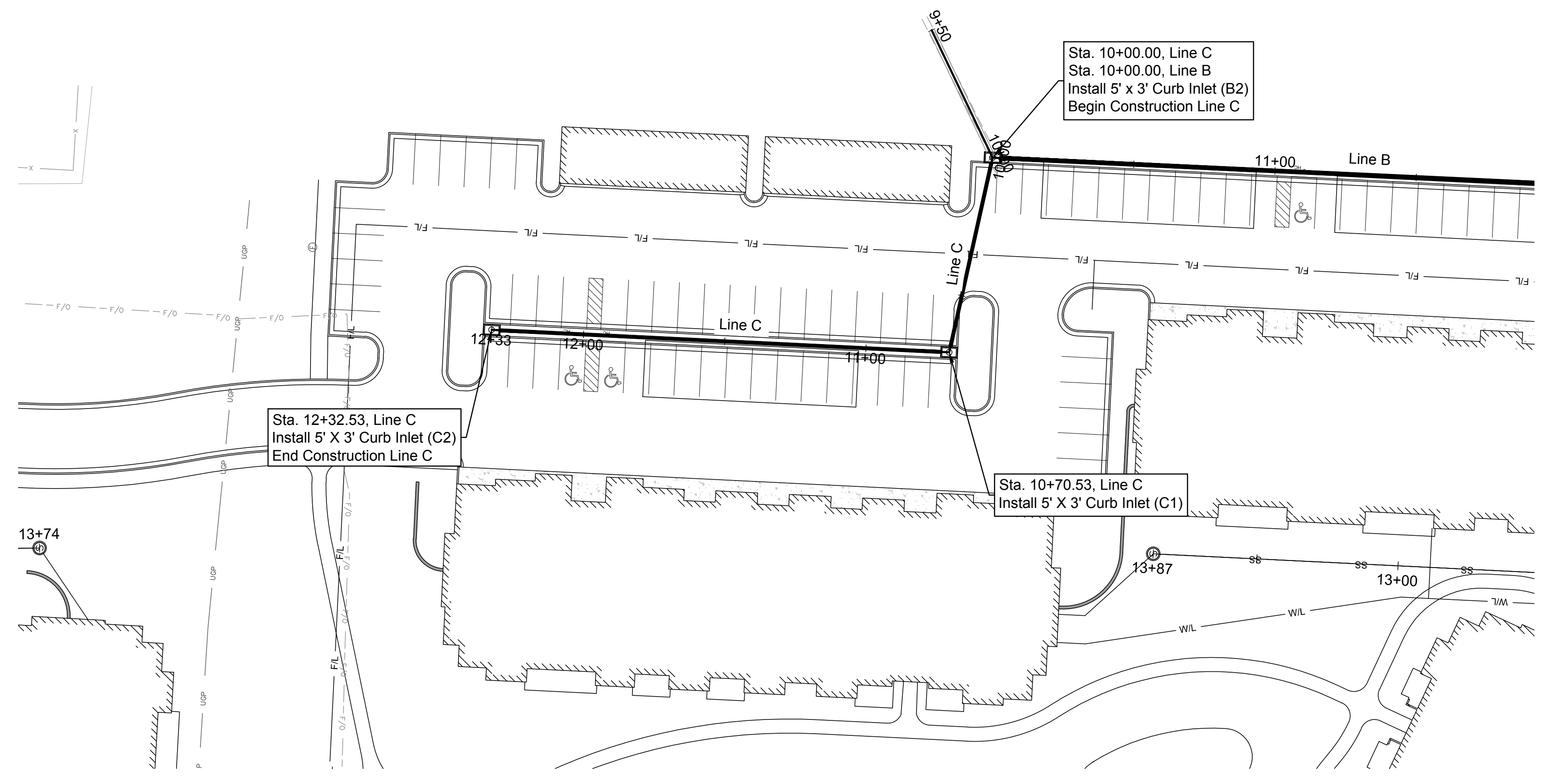


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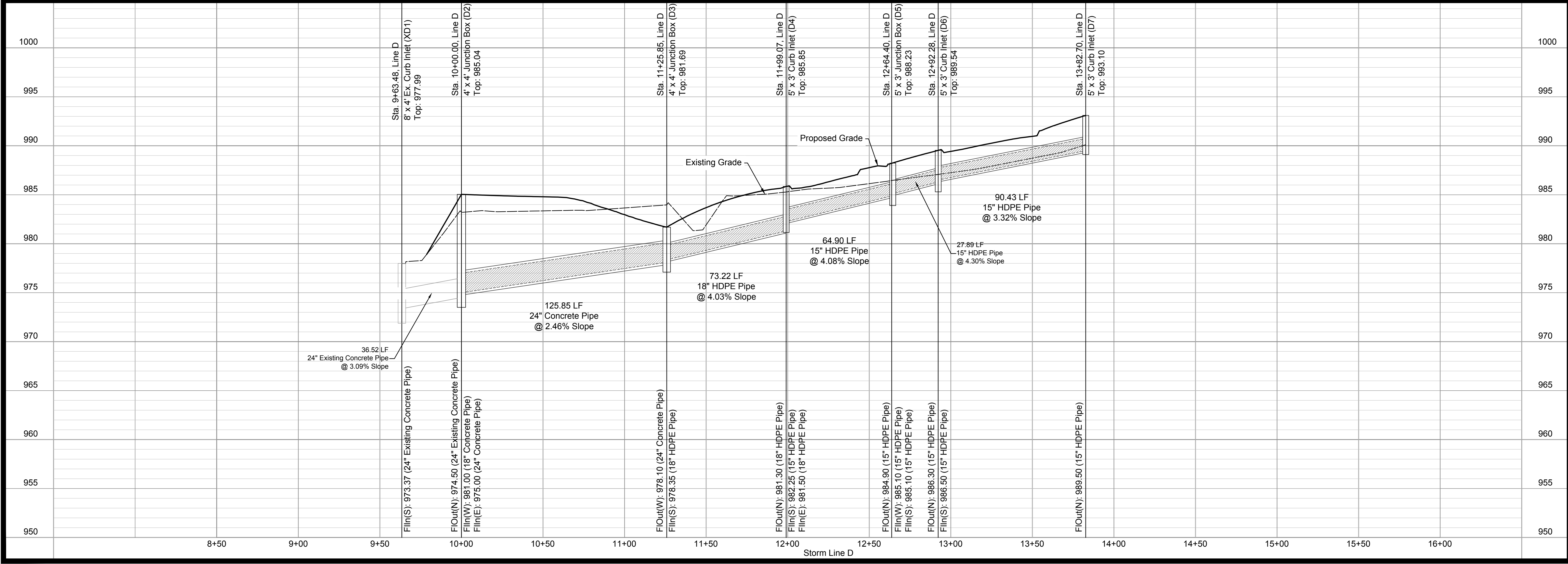
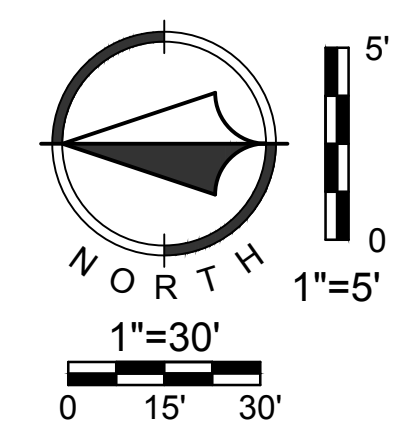
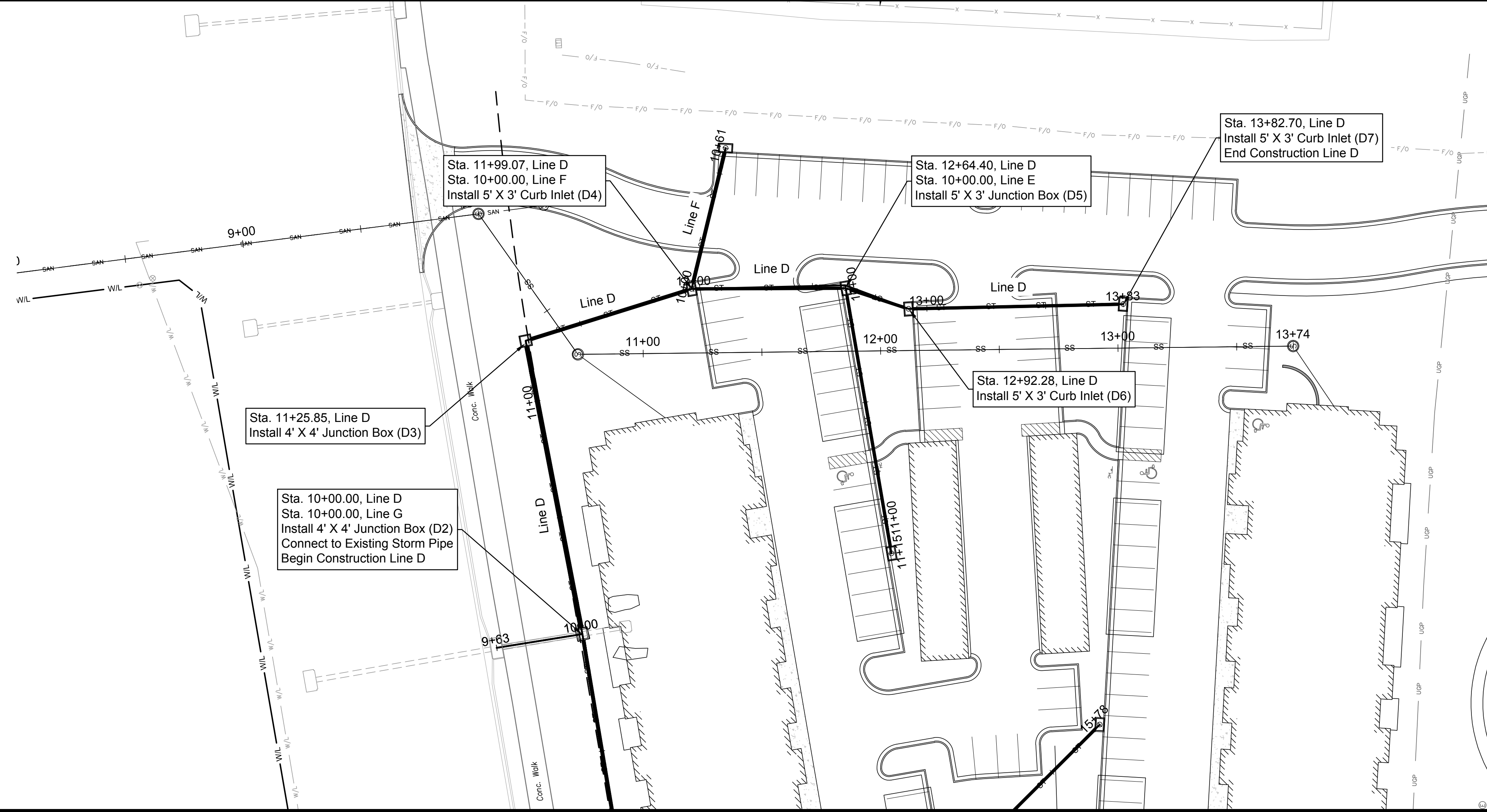
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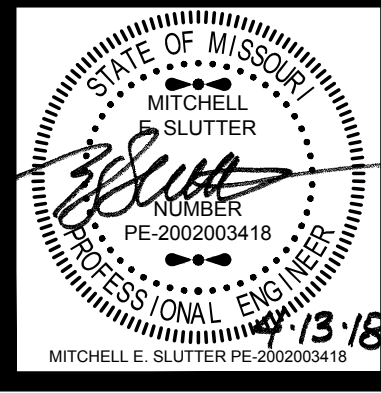
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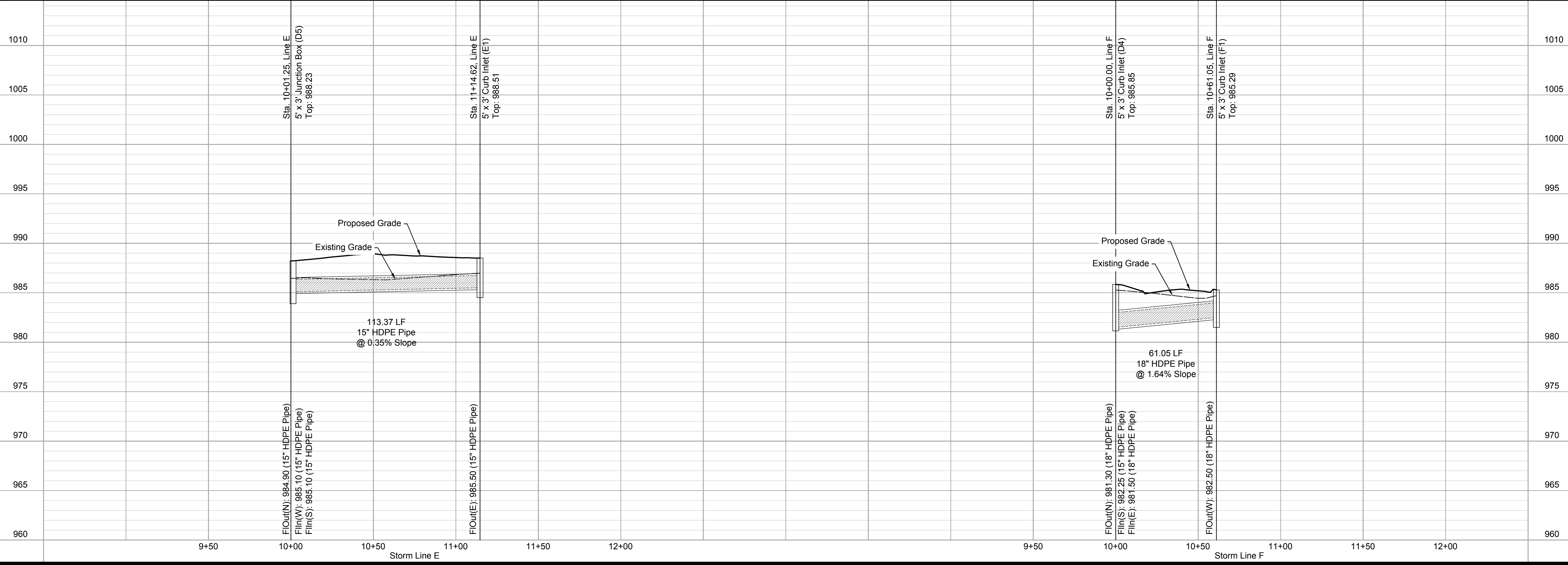
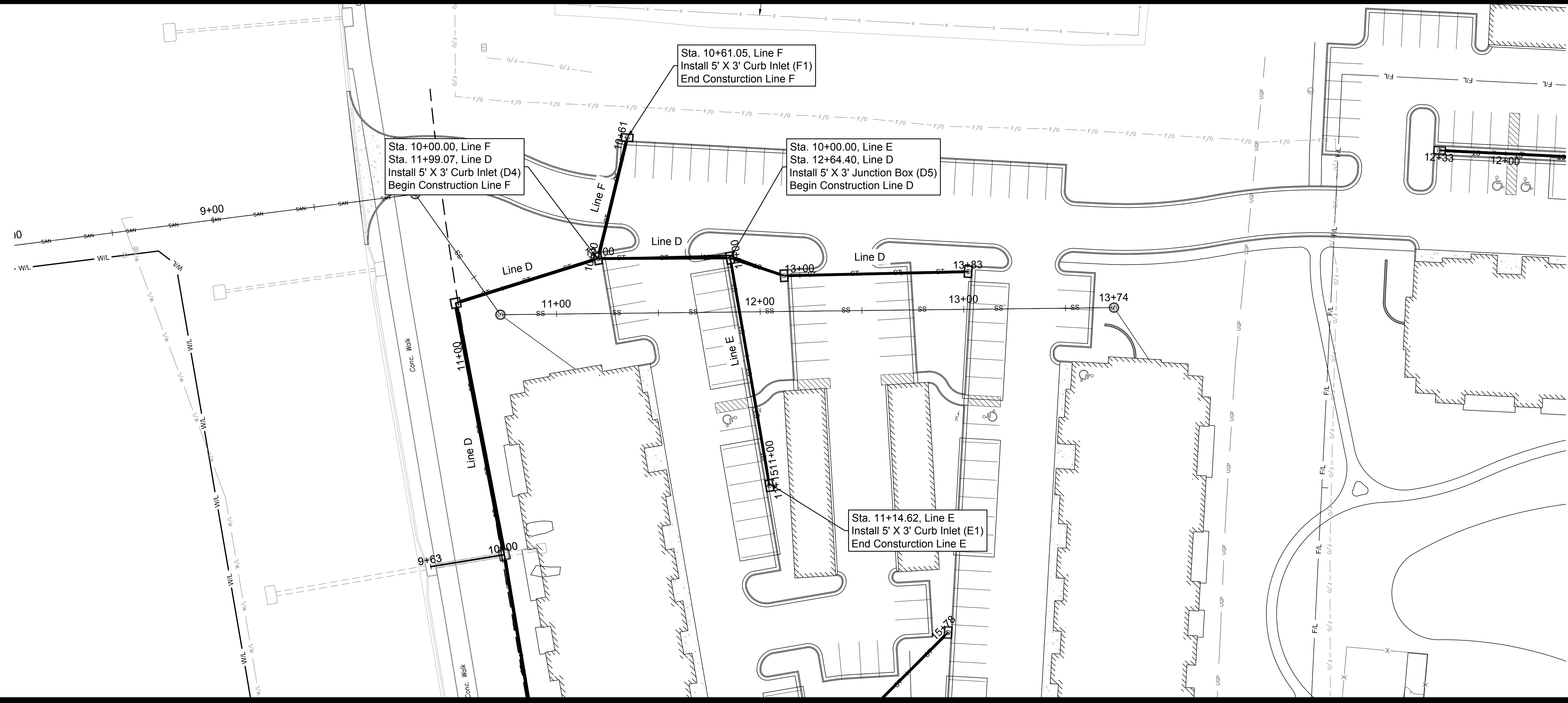


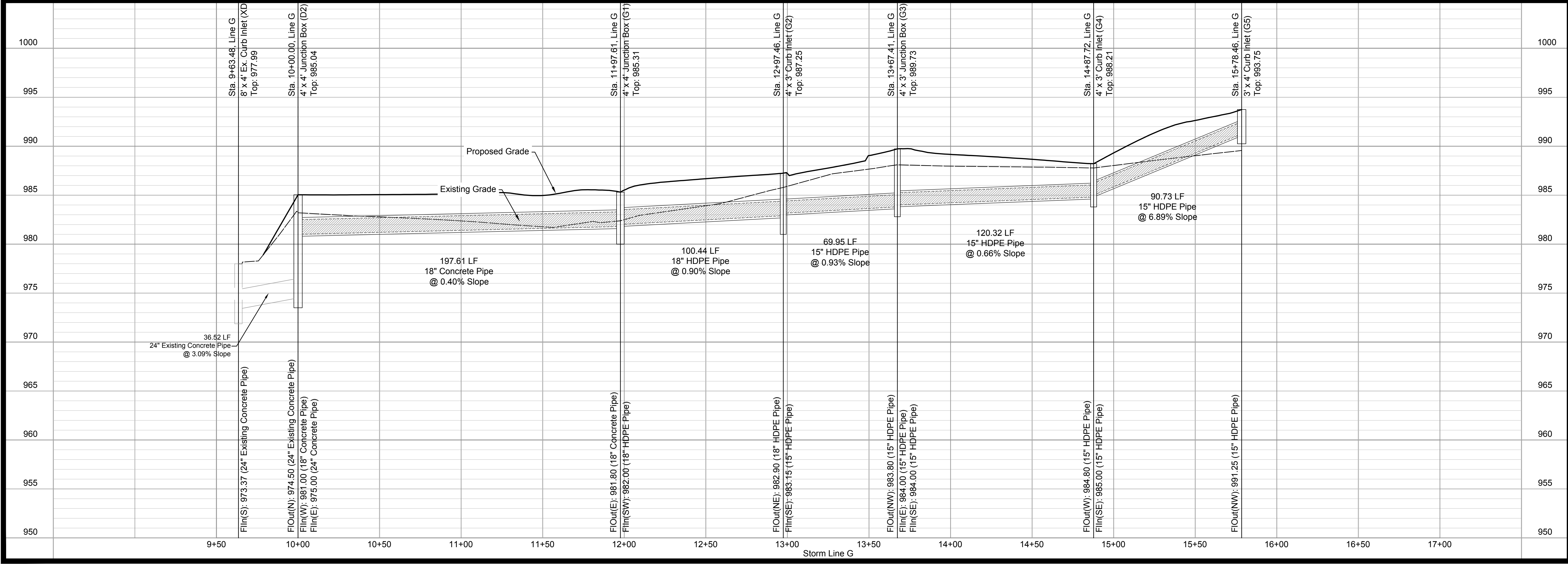
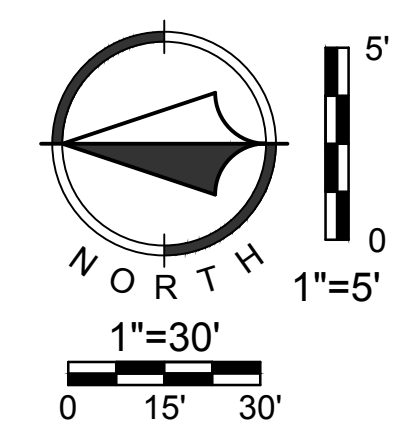
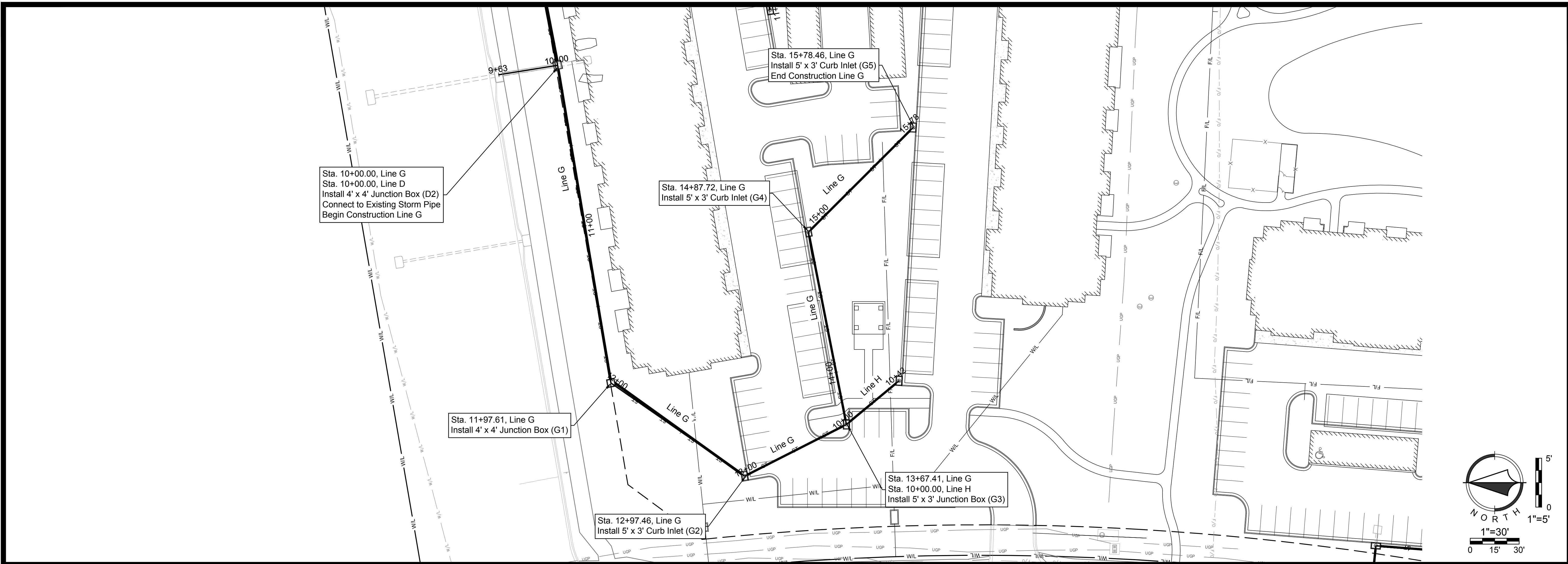
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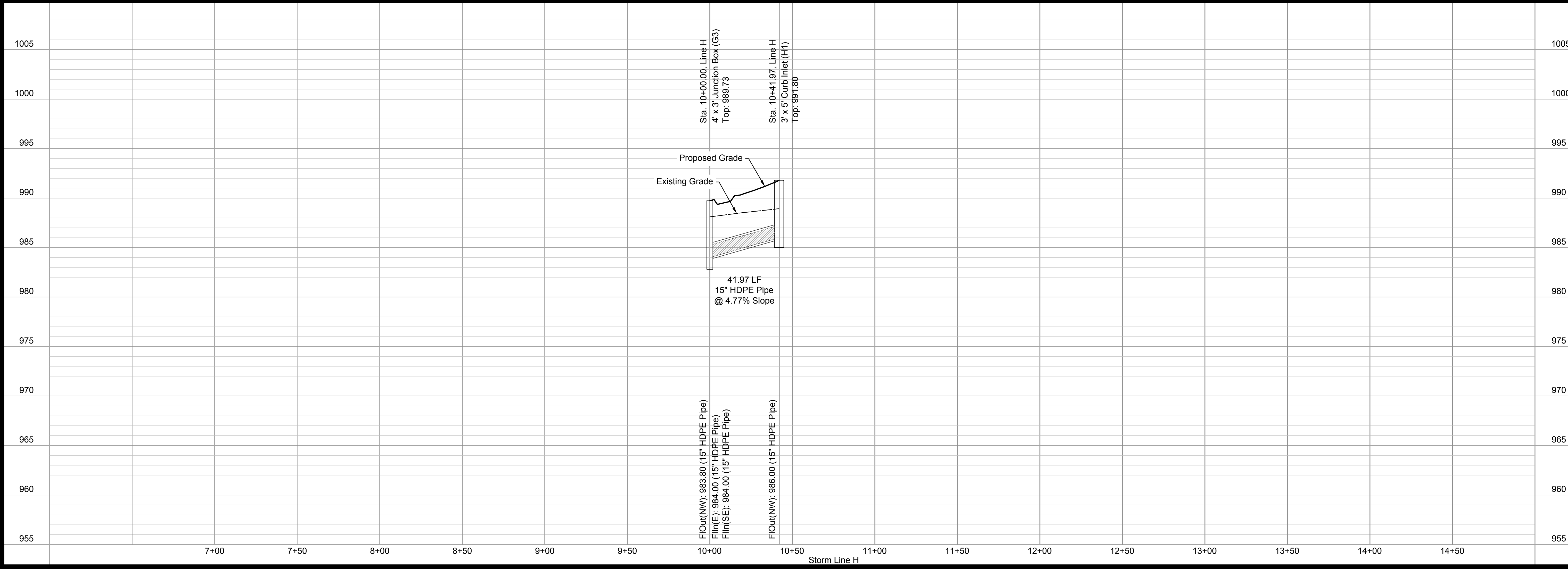
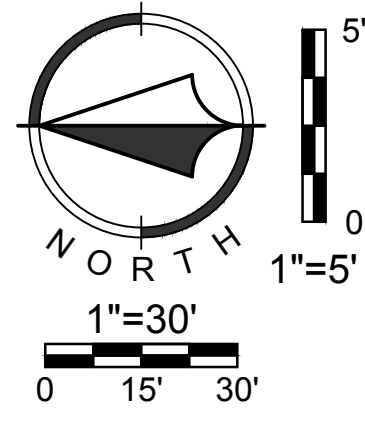
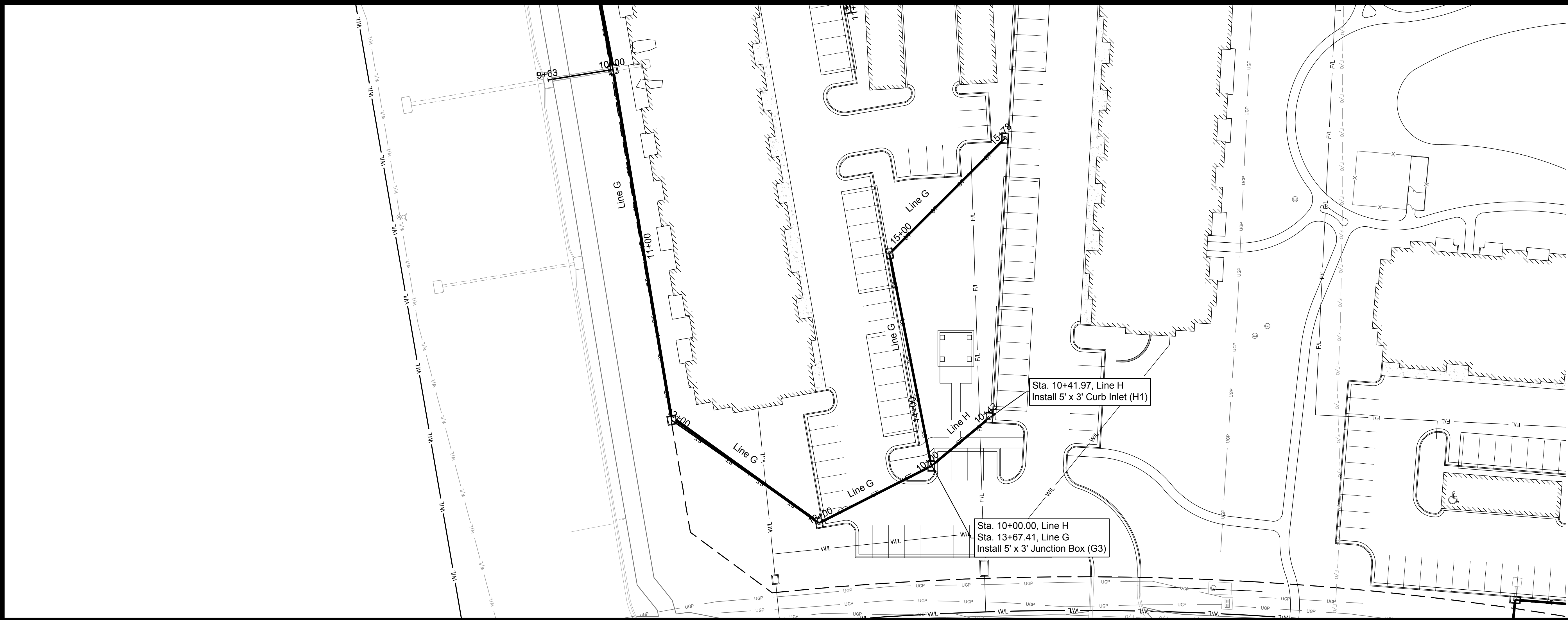
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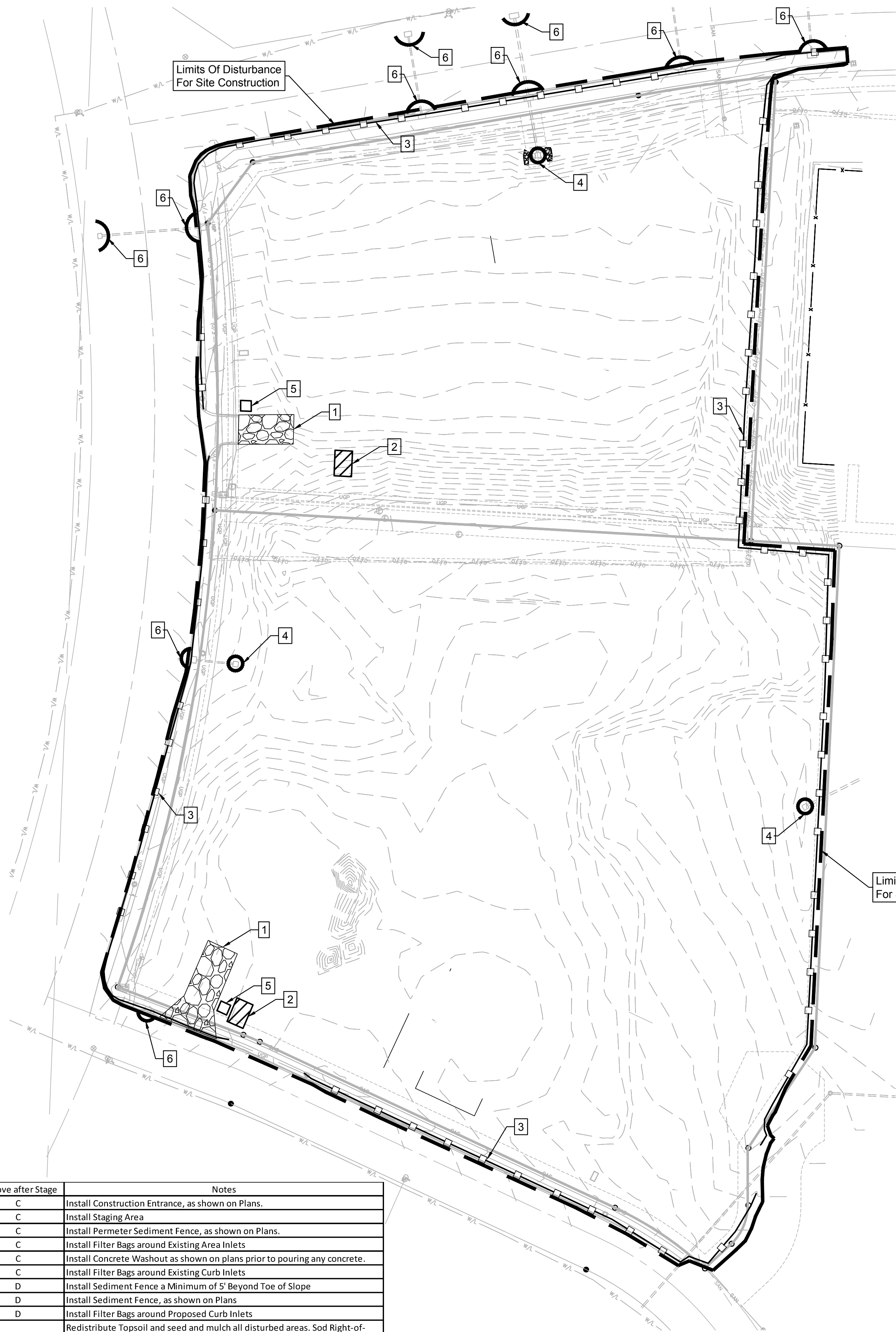
STATE OF MISSOURI
MITCHELL E. SLUTTER
REGISTERED PROFESSIONAL ENGINEER
NUMBER PE-2002003416
EXPIRES 12/31/18

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| Sheet C25 | |
| Final Development Plans 18-0129 Summit Square II Lee's Summit, Jackson County, Missouri | |
| Storm Plan and Profile Line H | |
| | |
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| | ORIGINAL SUBMITTAL |
| | REVISION |
| MISSOURI CERTIFICATE OF AUTHORITY No. 2000035630 | |



WRITTEN SEQUENCING

- Implement Pre-Clearing Plan:**
All temporary structural BMP's shown on the pre-clearing plan must be in place before the general clearing operations. Clearing necessary to place temporary structural BMP's is the minimum required for installation. Coordinate clearing necessary to place temporary structural BMP's with local weather forecast so that clearing and placement may be completed within a forecast dry period. Stabilize all erosion control measures after installation. Temporary Barrier Fence shall be in Place, around areas not to be disturbed, prior to any construction activities. This area includes Stream Corridor.
- Clear and Stabilize Work Areas:**
Grade contractor areas and place all-weather surface on contractor areas.
- Clearing and Grubbing:**
After Phase I BMP's are installed, contractor may clear, grub, and demo required areas as necessary.

EROSION CONTROL NOTES

- Erosion control plan modifications shall be required if the plan fails to substantially control erosion and offsite sedimentation.
- The retention of access controls and sediment controls shall be required for areas where seed has not established 70% cover.
- The contractor shall temporarily seed and mulch all disturbed areas if there has been no construction activity on them for a period of fourteen (14) calendar days.
- Install "J" Hooks on silt fence every 100 LF

| <u>EROSION CONTROL LEGEND</u> | |
|-------------------------------|----------------------------------|
| | Stabilized Construction Entrance |
| | Staging Area |
| | Stockpile Area |
| | Concrete Washout |
| | Limits of Disturbance |
| | Perimeter Silt Fence |
| | Inlet Protection |

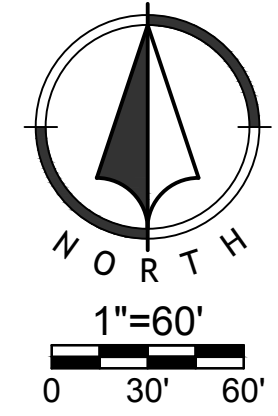
Disturbed Area for Site Improvements : 13.55 Acres

ESTIMATED EARTHWORK

Cut: 15,882 CY
Fill: 30,674 CY

Earthwork calculations are informational only. Contractor shall be responsible for their own earthwork calculations and perform all necessary earthwork shown herein without additional cost to the owner if quantities differ than above. Earthwork numbers are unadjusted.

| Project Stages | BMP Plan Ref. No. | BMP Description | Remove after Stage | Notes |
|--|-------------------|--------------------------------|--------------------|--|
| Phase I A-Prior to Land Disturbance | 1 | Construction Entrance | C | Install Construction Entrance, as shown on Plans. |
| | 2 | Staging Area | C | Install Staging Area |
| | 3 | Perimeter Sediment Fence | C | Install Perimeter Sediment Fence, as shown on Plans. |
| | 4 | Area Inlet Protection | C | Install Filter Bags around Existing Area Inlets |
| | 5 | Concrete Washout | C | Install Concrete Washout as shown on plans prior to pouring any concrete. |
| | 6 | Curb Inlet Protection | C | Install Filter Bags around Existing Curb Inlets |
| Phase II B-Site Grading | 7 | Stockpile Topsoil | D | Install Sediment Fence a Minimum of 5' Beyond Toe of Slope |
| | 8 | Sediment Fence | D | Install Sediment Fence, as shown on Plans |
| Phase III C-Site Construction | 9 | Curb Inlet Protection | D | Install Filter Bags around Proposed Curb Inlets |
| | 10 | Establish Perennial Vegetation | N/A | Redistribute Topsoil and seed and mulch all disturbed areas. Sod Right-of-Way. Stabilization complete when 100% disturbed area is established with perennial vegetation with a density of 70%. |



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Professional Engineer
STATE OF MISSOURI
MITCHELL E. SLUTTER
PE-200003418
13/18



WRITTEN SEQUENCING

- Implement Pre-Clearing Plan:**
All temporary structural BMP's shown on the pre-clearing plan must be in place before the general clearing operations. Clearing necessary to place temporary structural BMP's is the minimum required for installation. Coordinate clearing necessary to place temporary structural BMP's with local weather forecast so that clearing and placement may be completed within a forecast dry period. Stabilize all erosion control measures after installation. Temporary Barrier Fence shall be in Place, around areas not to be disturbed, prior to any construction activities. This area includes Stream Corridor.
- Clear and Stabilize Work Areas:**
Grade contractor areas and place all-weather surface on contractor areas.
- Clearing and Grubbing:**
After Phase I BMP's are installed, contractor may clear, grub, and demo required areas as necessary.

EROSION CONTROL NOTES

- Erosion control plan modifications shall be required if the plan fails to substantially control erosion and offsite sedimentation.
- The retention of access controls and sediment controls shall be required for areas where seed has not established 70% cover.
- The contractor shall temporarily seed and mulch all disturbed areas if there has been no construction activity on them for a period of fourteen (14) calendar days.
- Install 'J' Hooks on silt fence every 100 LF

| EROSION CONTROL LEGEND | |
|------------------------|----------------------------------|
| | Stabilized Construction Entrance |
| | Staging Area |
| | Stockpile Area |
| | Concrete Washout |
| | Limits of Disturbance |
| | Perimeter Silt Fence |
| | Inlet Protection |

Disturbed Area for Site Improvements : 13.55 Acres

ESTIMATED EARTHWORK

Cut: 15,882 CY
Fill: 30,674 CY

Earthwork calculations are informational only. Contractor shall be responsible for their own earthwork calculations and perform all necessary earthwork shown herein without additional cost to the owner if quantities differ than above. Earthwork numbers are unadjusted.

| Project Stages | BMP Plan Ref. No. | BMP Description | Remove after Stage | Notes |
|--|-------------------|--------------------------------|--------------------|---|
| Phase I A-Prior to Land Disturbance | 1 | Construction Entrance | C | Install Construction Entrance, as shown on Plans. |
| | 2 | Staging Area | C | Install Staging Area |
| | 3 | Perimeter Sediment Fence | C | Install Perimeter Sediment Fence, as shown on Plans. |
| | 4 | Area Inlet Protection | C | Install Filter Bags around Existing Area Inlets |
| | 5 | Concrete Washout | C | Install Concrete Washout as shown on plans prior to pouring any concrete. |
| Phase II B-Site Grading | 6 | Curb Inlet Protection | C | Install Filter Bags around Existing Curb Inlets |
| | 7 | Stockpile Topsoil | D | Install Sediment Fence a Minimum of 5' Beyond Toe of Slope |
| Phase II C-Site Construction | 8 | Sediment Fence | D | Install Sediment Fence, as shown on Plans |
| | 9 | Curb Inlet Protection | D | Install Filter Bags around Proposed Curb Inlets |
| Phase III D-Final Stabilization | 10 | Establish Perennial Vegetation | N/A | Redistribute Topsoil and seed and mulch all disturbed areas. Sod Right-of-Way. Stabilization complete when 100% disturbed area is established with perennial vegetation with a density of 70% |

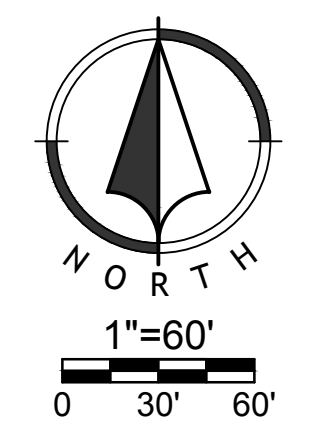
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MISSOURI CERTIFICATE OF AUTHORITY NO. 2010035350

PROFESSIONAL ENGINEER
MITCHELL E. SLUTTER
FE-2002030418
13-18





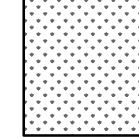

WRITTEN SEQUENCING

1. **Implement Pre-Clearing Plan:**
All temporary structural BMP's shown on the pre-clearing plan must be in place before the general clearing operations. Clearing necessary to place temporary structural BMP's is the minimum required for installation. Coordinate clearing necessary to place temporary structural BMP's with local weather forecast so that clearing and placement may be completed within a forecast dry period. Stabilize all erosion control measures after installation. Temporary Barrier Fence shall be in Place, around areas not to be disturbed, prior to any construction activities. This area includes Stream Corridor.
2. **Clear and Stabilize Work Areas:**
Grade contractor areas and place all-weather surface on contractor areas.
3. **Clearing and Grubbing:**
After Phase I BMP's are installed, contractor may clear, grub, and demo required areas as necessary.

EROSION CONTROL NOTES

1. Erosion control plan modifications shall be required if the plan fails to substantially control erosion and offsite sedimentation.
2. The retention of access controls and sediment controls shall be required for areas where seed has not established 70% cover.
3. The contractor shall temporarily seed and mulch all disturbed areas if there has been no construction activity on them for a period of fourteen (14) calendar days.
4. Install "J" Hooks on silt fence every 100 LF

LEGEND

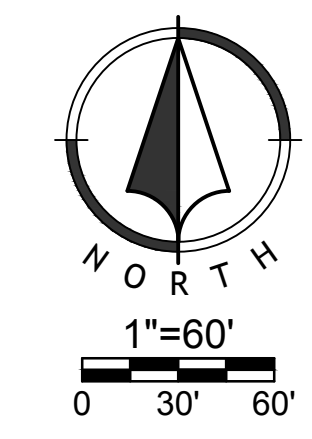
-  Sodded Areas
-  Seeded Areas

Disturbed Area for Site Improvements : 13.55 Acres

ESTIMATED EARTHWORK

Cut: 14,051 CY
Fill: 32,804 CY

Earthwork calculations are informational only. Contractor shall be responsible for their own earthwork calculations and perform all necessary earthwork shown herein without additional cost to the owner if quantities differ than above. Earthwork numbers are unadjusted.



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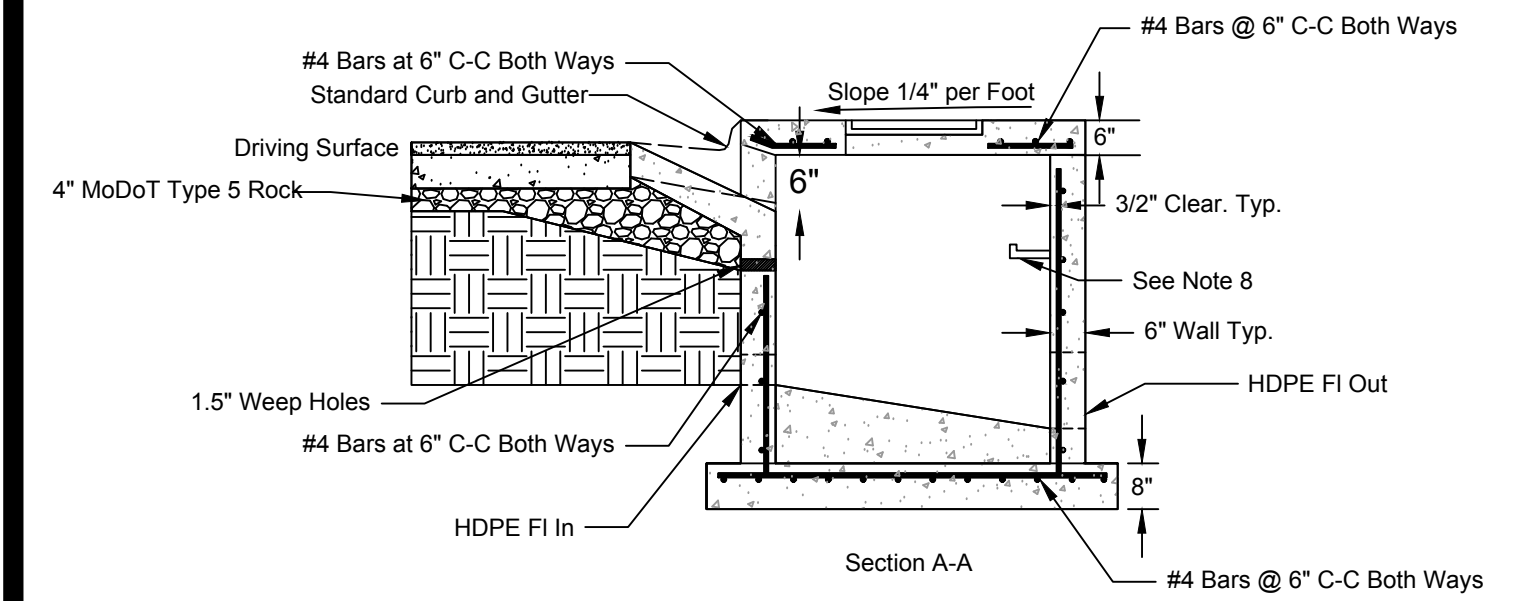
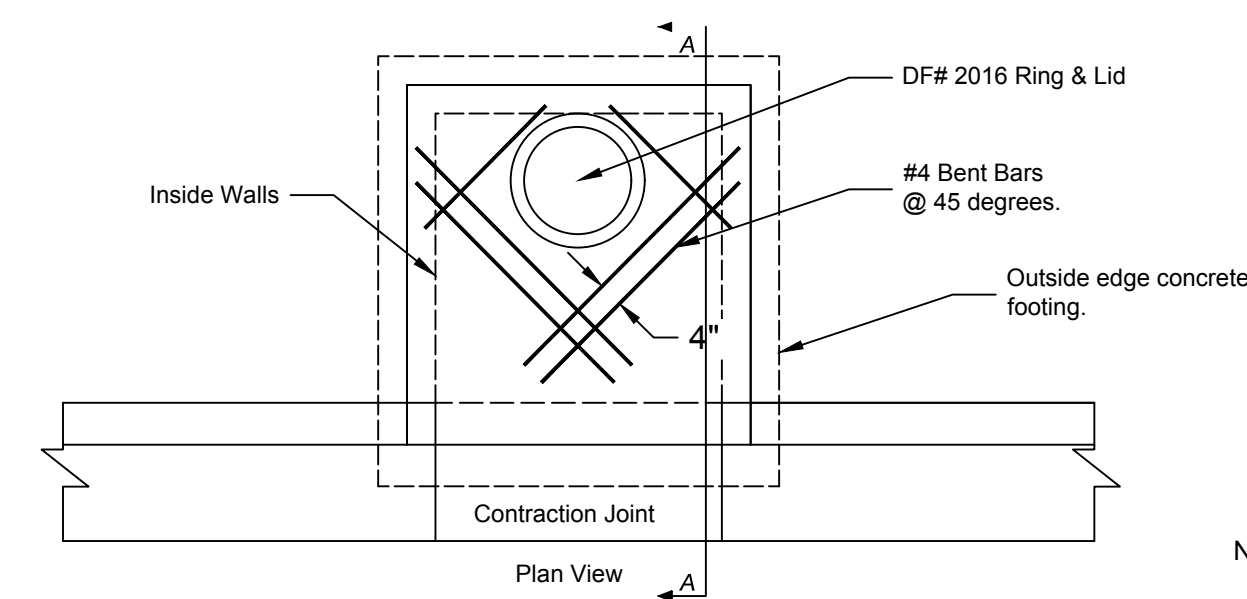
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| 1 | APF | 04/13/18 | ORIGINAL SUBMITTAL |
| | | | REVISION |

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KANSAS CITY, KANSAS 66103
913.317.9500
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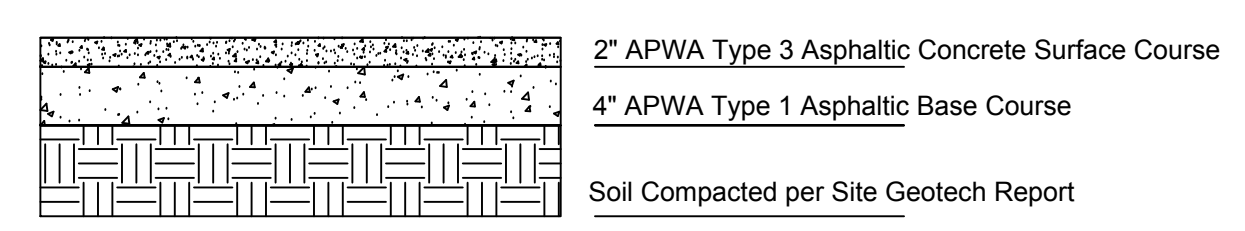
MISSOURI CERTIFICATE OF AUTHORITY NO. 2000035630

APWA KANSAS CITY METROPOLITAN CHAPTER
STANDARD DRAWING NUMBER C-1
ADOPTED: MAY 23, 2001

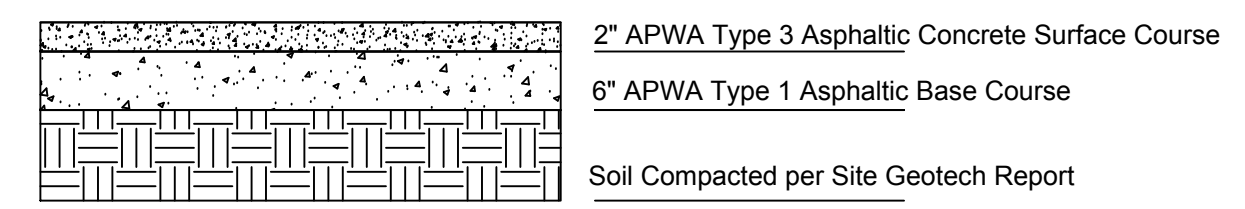


Standard Non-Setback Inlet Detail
NTS

- Notes:
- All Concrete shall be KCMMB-4k.
 - Inlet Construction notes shall list the "L" Dimension first, the "W" dimension second, and the "H" dimension third.
 - Floor of inlets shall have a shaped concrete invert to provide for smooth flow.
 - The minimum dimension between top of pipe and top of box shall be 2' 6" (Typical all walls.)
 - All Inlet inlets shall conform to street grade. All inlets in sump shall be level. Bevel all exposed edges with 3/4" triangular molding.
 - Steps shall be spaced 1'-4" O.C. Vertically.
 - Any inlet, yard inlet, or junction box over 10 ft in length, 8 ft in width, or 12 ft in depth shall be considered non-standard, and a detail shall be shown. Any such detail shall be sealed by a structural engineer.
 - The throat and transition are subsidiary to the structure.
 - Lid shall be set true to line and grade along curb profile.

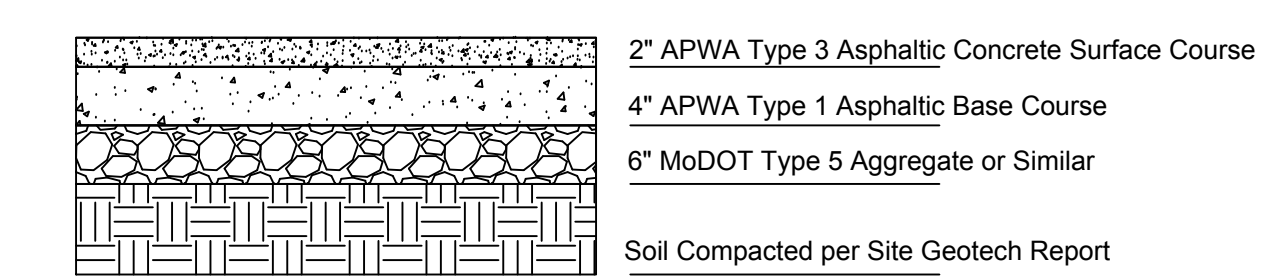


Light Duty Asphalt Pavement Section



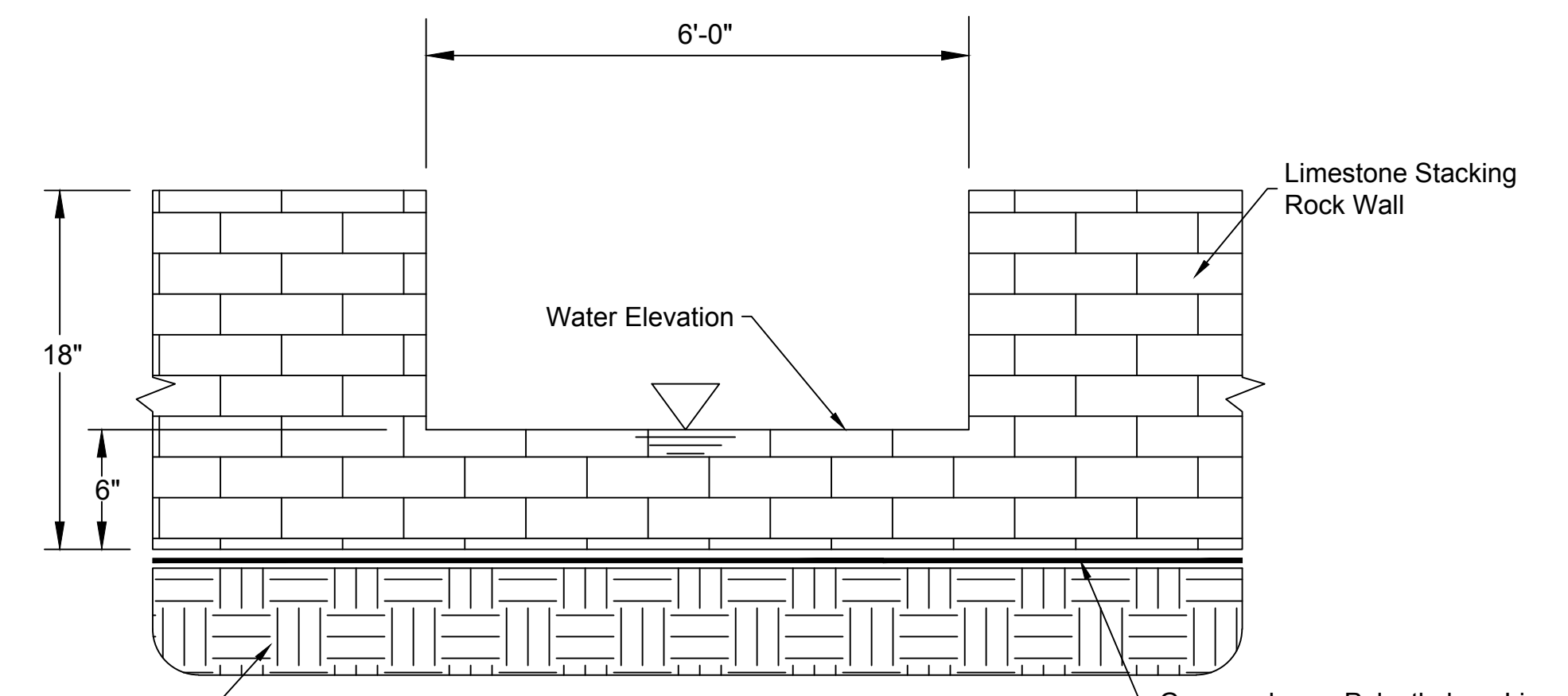
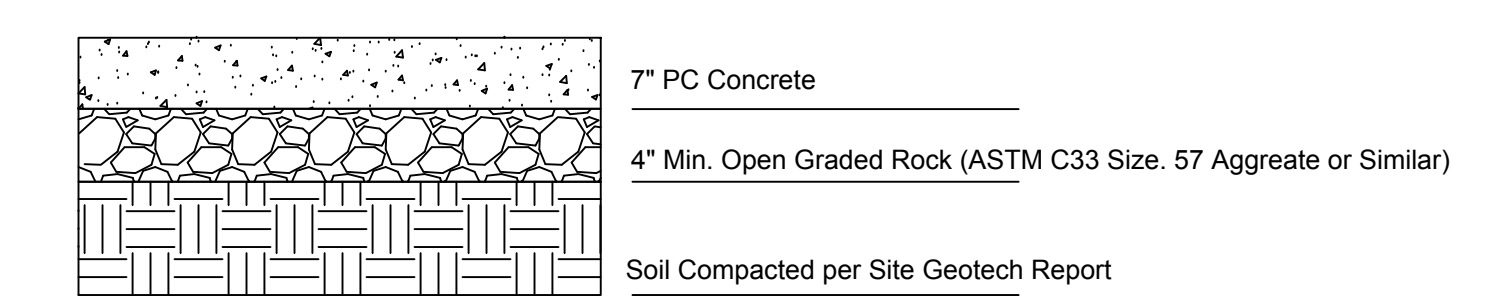
Heavy Duty Asphalt Pavement Section

Option 1 Asphalt Pavement Sections

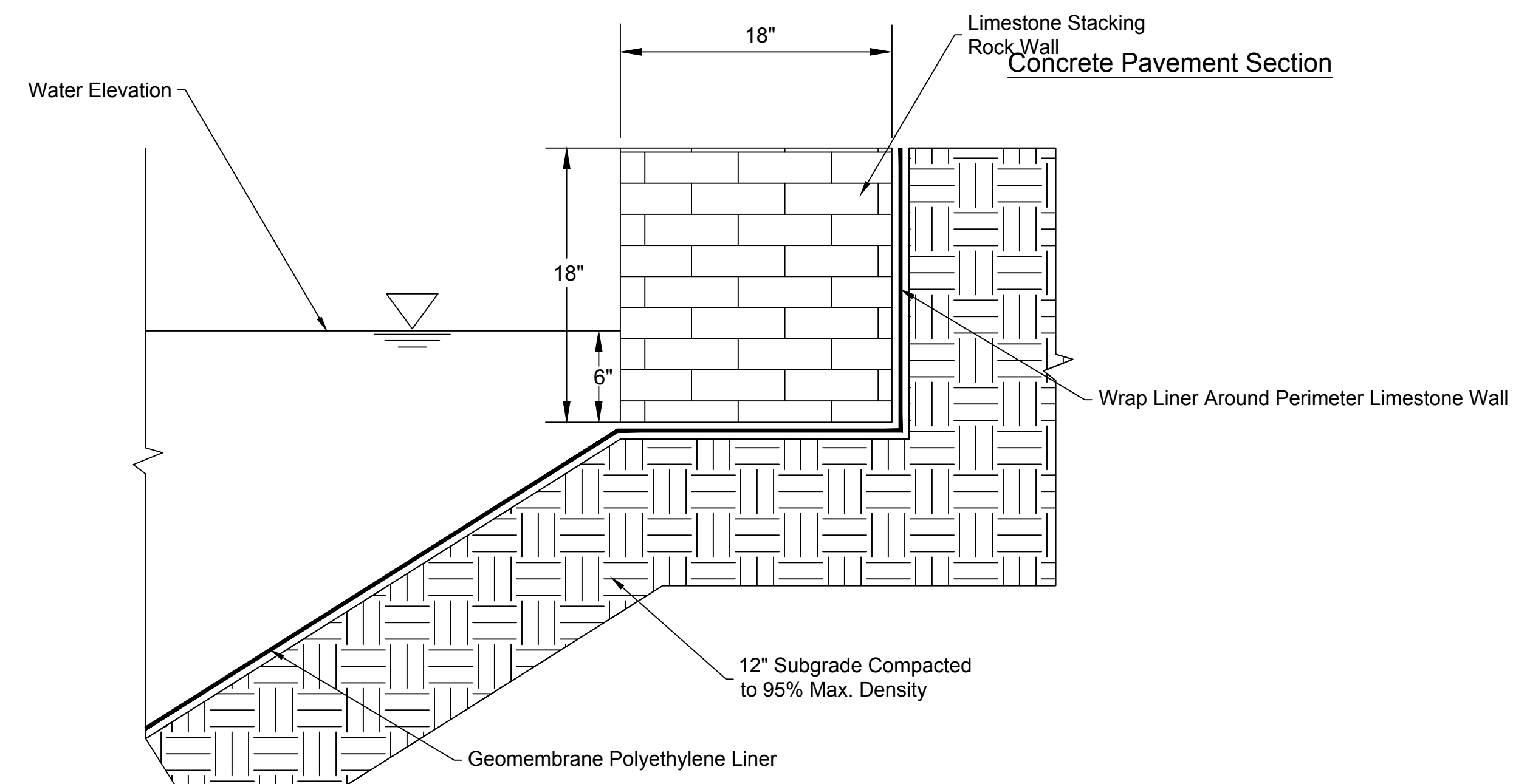


Asphalt Pavement Section

Option 2 Asphalt Pavement Section



North Pool Spillway Section
NTS



Limestone Pond Wall Detail
NTS

GENERAL NOTES:

- 3/4" Isolation Joints with 5/8" dia. x 2" smooth dowels shall be placed at radius points and at 150' intervals. These dowel bars shall be greased and wrapped on one end with expansion tubes.
- 1" deep Contraction Joints shall be installed at approximately 10' intervals. These joints shall pass across the entire curb section.
- Fix dowel bars with bar supports.
- Depth of curb shall be a minimum of 8" through the handicap access ramp.
- Concrete shall conform to Standard Specifications Section 2208.2.B.
- Asphaltic concrete surface course shall conform to Standard Specifications Section 2205.2.

STRAIGHT CURB (TYPE C-1)
DOWELLED CURB (TYPE DC)
STRAIGHT BACK CURB & GUTTER (TYPE CG-1)
ROLL BACK CURB & GUTTER (TYPE CG-2)
STRAIGHT BACK DRY CURB & GUTTER (TYPE CG-1 DRY)
ROLL BACK DRY CURB & GUTTER (TYPE CG-2 DRY)

CURB REPLACEMENT DETAIL

Aggregate leveling course, if used, shall conform to Standard Specifications Section 2202.
The top 6" of subgrade shall conform to Standard Specifications Section 2201.

AMERICAN PUBLIC WORKS ASSOCIATION
KANSAS CITY METROPOLITAN CHAPTER
STANDARD DRAWING NUMBER C-1
ADOPTED: MAY 23, 2001

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KANSAS CITY, KANSAS 66103

MISSOURI CERTIFICATE OF AUTHORITY NO. 2010035350
STATE OF MISSOURI
MITCHELL S. SLUTTER
REGISTERED PROFESSIONAL ENGINEER
NO. 13118
EXPIRES 12/31/18

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

SHALLOW PRECAST MANHOLE – SANITARY SEWER

Date: 02/13
Drawn By: JN
Checked By: DL
FILE: SAN-3
Rev: 1/14

NOTES:
1. PRECAST CONCRETE MANHOLES SHALL CONFORM TO ASTM C478 EXCEPT AS MODIFIED BY THE SPECIFICATIONS.
2. A WALL THICKNESS NOT LESS THAN ONE-TWELFTH (1/12) OF THE INSIDE DIAMETER OR 4", WHICHEVER IS GREATER SHALL BE USED.
3. WATERPROOFING SHALL BE REQUIRED ON THE OUTSIDE OF MANHOLES. THE WATERPROOFING SHALL CONSIST OF A TOTAL DRY FILM THICKNESS OF NOT LESS THAN 14 MILS OF BITUMINOUS COATING.
4. THE FILL CONCRETE FLOW CHANNEL FOR SIDE BRANCHES SHALL BE PLACED TO PROVIDE A SMOOTH TRANSITION INTO THE FLOW LINE.
5. REFER TO THE APPROVED PRODUCTS LIST FOR WATER UTILITIES FOR MANHOLE GASKET MODELS.
6. PROVIDE STEPS AS SHOWN ON THE APPROVED PRODUCTS LIST FOR MANHOLE DEPTHS GREATER THAN 4'.

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

SANITARY PIPE ENCASEMENT

Date: 02/13
Drawn By: JN
Checked By: DL
FILE: SAN-7
Rev: 1/14

NOTES:
1. FOR PIPES LESS THAN 15", T = 6" MIN.
2. FOR PIPES 15" THRU 36", T = 8" MIN.
3. INTERMEDIATE BELLS SHALL BE ENCASED.
4. REINFORCING STEEL SHALL BE #4 @ 12" O.C. EACH WAY WITH A MINIMUM REBAR LAP OF 12".

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

CASING PIPE DETAIL

Date: 02/13
Drawn By: JN
Checked By: DL
FILE: SAN-6
Rev: 1/14

NOTE:
IF WOOD SKIDS ARE USED, ANNULAR SPACE BETWEEN CASING PIPE AND CARRIER PIPE SHALL BE FILLED WITH SAND.

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

BUILDING SEWER STUB AND RISER

Date: 12/13
Drawn By: SC
Checked By: DL
FILE: SAN-1
Rev: 10/15
Rev: 12/15

NOTES:
1. ALL SEWER STUBS SHALL BE CONSTRUCTED TO PROPERTY LINE OR 10' MINIMUM FROM THE MAIN, WHERE SIDEWALKS ARE PRESENT, CONTRACTOR SHALL EXTEND SERVICE LINE UNDER EXISTING SIDEWALK TO TWO FEET BEYOND.
2. IMPERVIOUS TRENCH CHECKS SHALL BE PLACED ON BUILDING SEWER STUBS (AT LEAST 5' AWAY FROM THE SANITARY SEWER MAIN).
3. TRENCH CHECKS ON THE BUILDING SEWER STUBS SHALL EXTEND 6" BELOW THE BOTTOM OF THE PIPE. LENGTH SHALL BE A MINIMUM OF 12". THE HEIGHT OF THE TRENCH CHECK SHALL EXTEND 12" ABOVE THE TOP OF THE PIPE. THE WIDTH OF THE TRENCH CHECK SHALL BE THE WIDTH OF THE TRENCH.
4. SEE SPECIFICATION SECTION 2100 FOR SEWER MAIN BEDDING AND BACKFILL.
5. #12 GAUGE GREEN INSULATED COPPER TRACER WIRE SHALL BE INSTALLED. TRACER WIRE TERMINAL BOXES SHALL BE INSTALLED DIRECTLY ABOVE THE SEWER SERVICE OR AS DETERMINED BY THE ENGINEER.
6. FOR SERVICES, TRACER WIRE SHALL RUN FROM THE WYE AND TERMINATE IN A FLUSH MOUNTED TRACER BOX WITH A GREEN CAST IRON LOCKABLE TOP. WIRE SHALL BE TAPED OR TIED TO THE PIPE AT 5' INTERVALS.
7. TRACER WIRE BOX SHALL BE INSTALLED WITHIN 1' OF PROPERTY LINE.
8. THE TRACER WIRE SHALL REMAIN CONTINUOUS TO THE GREATEST EXTENT POSSIBLE. SPICES IN THE TRACER WIRE SHOULD BE MADE WITH SPLIT BOLT CONNECTORS. WIRE NUTS SHALL NOT BE USED. A WATER-PROOF CONNECTION IS NECESSARY TO PREVENT CORROSION.

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

MANHOLE WALL CONNECTIONS

Date: 02/13
Drawn By: JN
Checked By: DL
FILE: SAN-5
Rev: 1/14

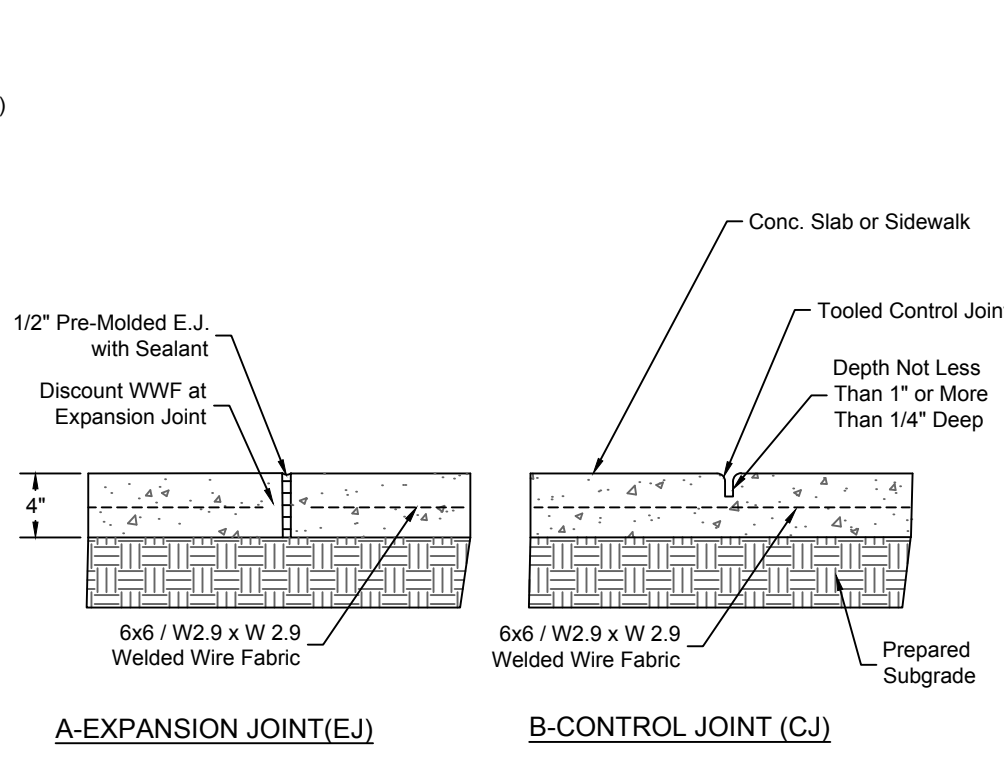
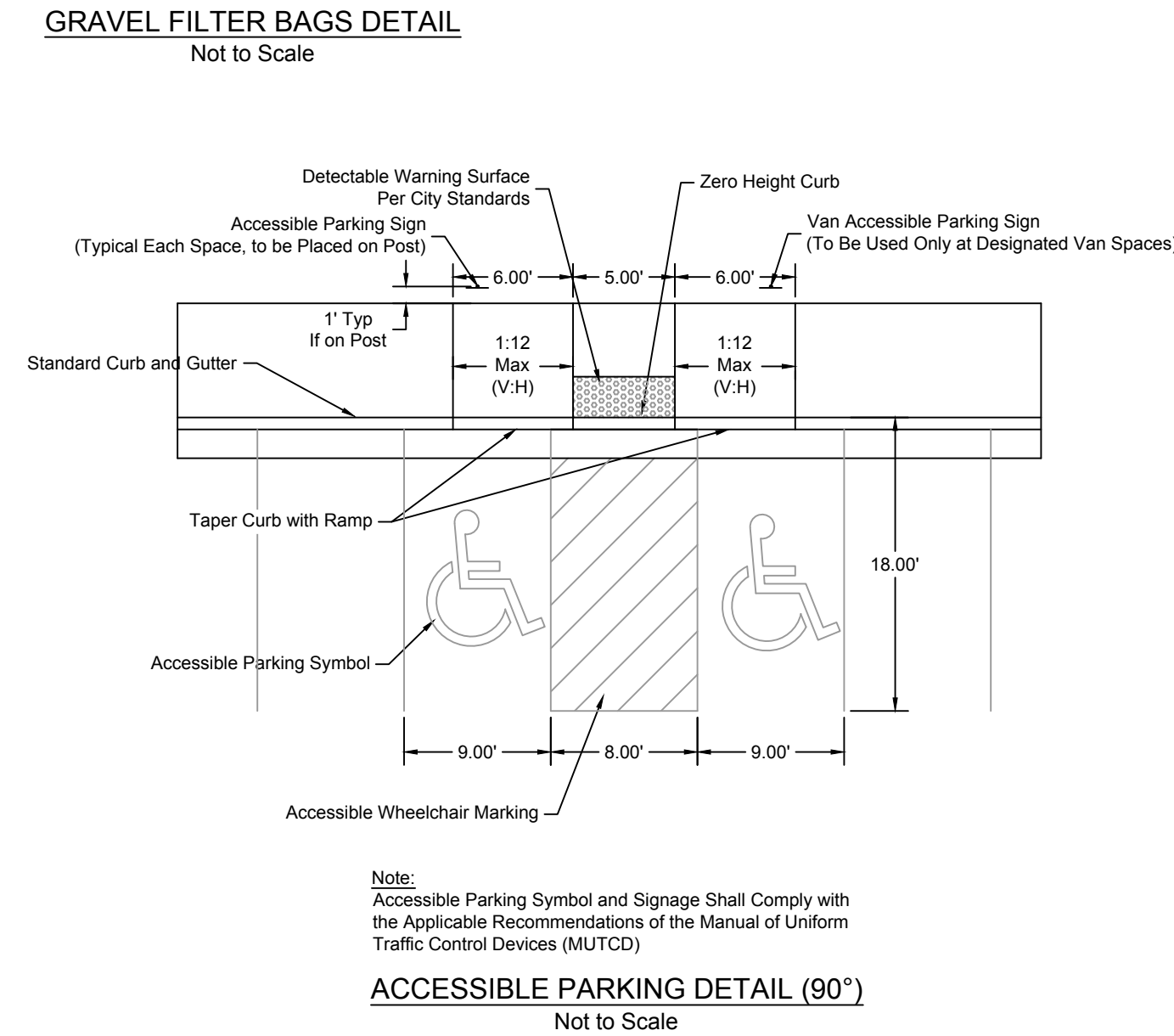
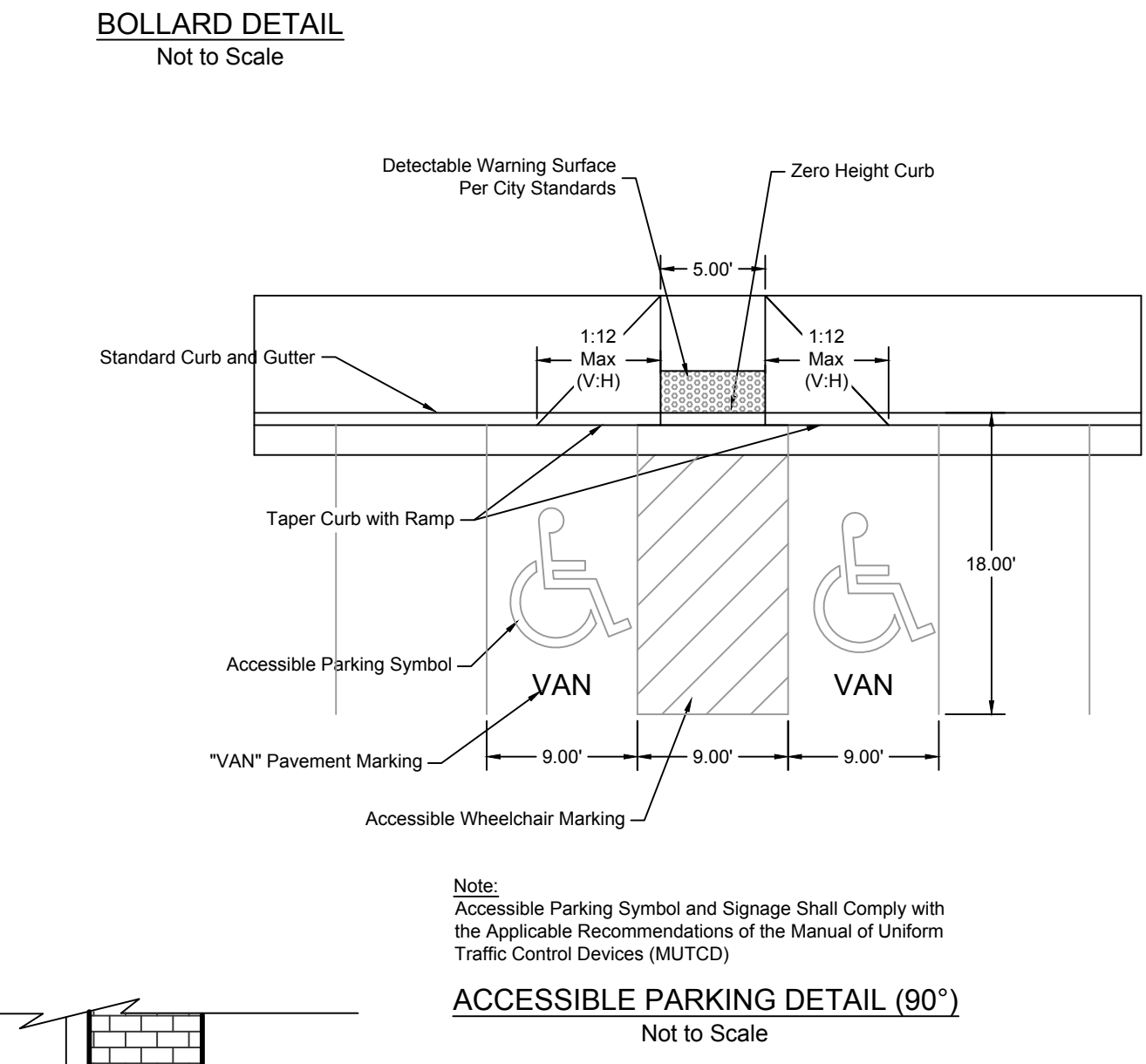
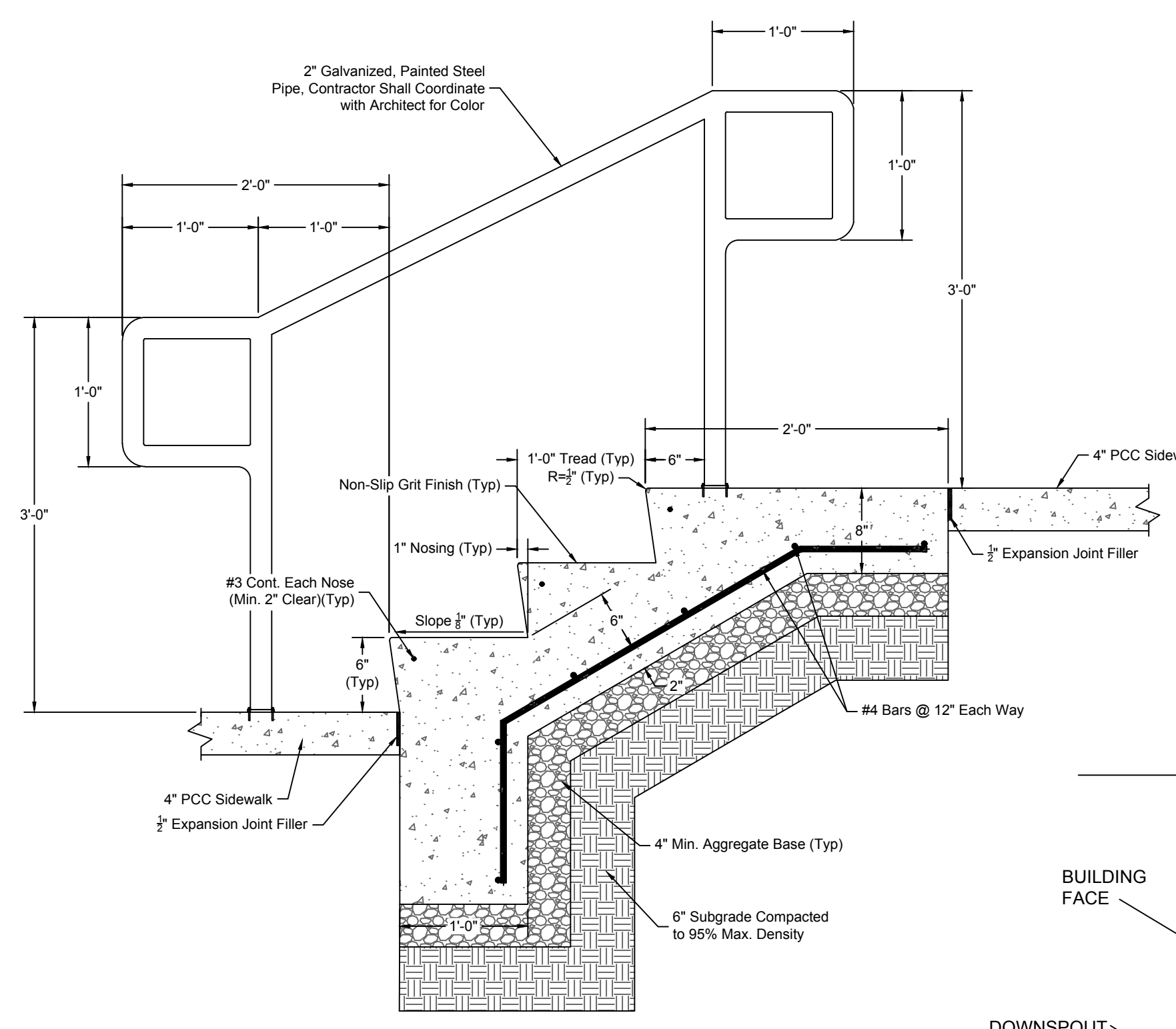
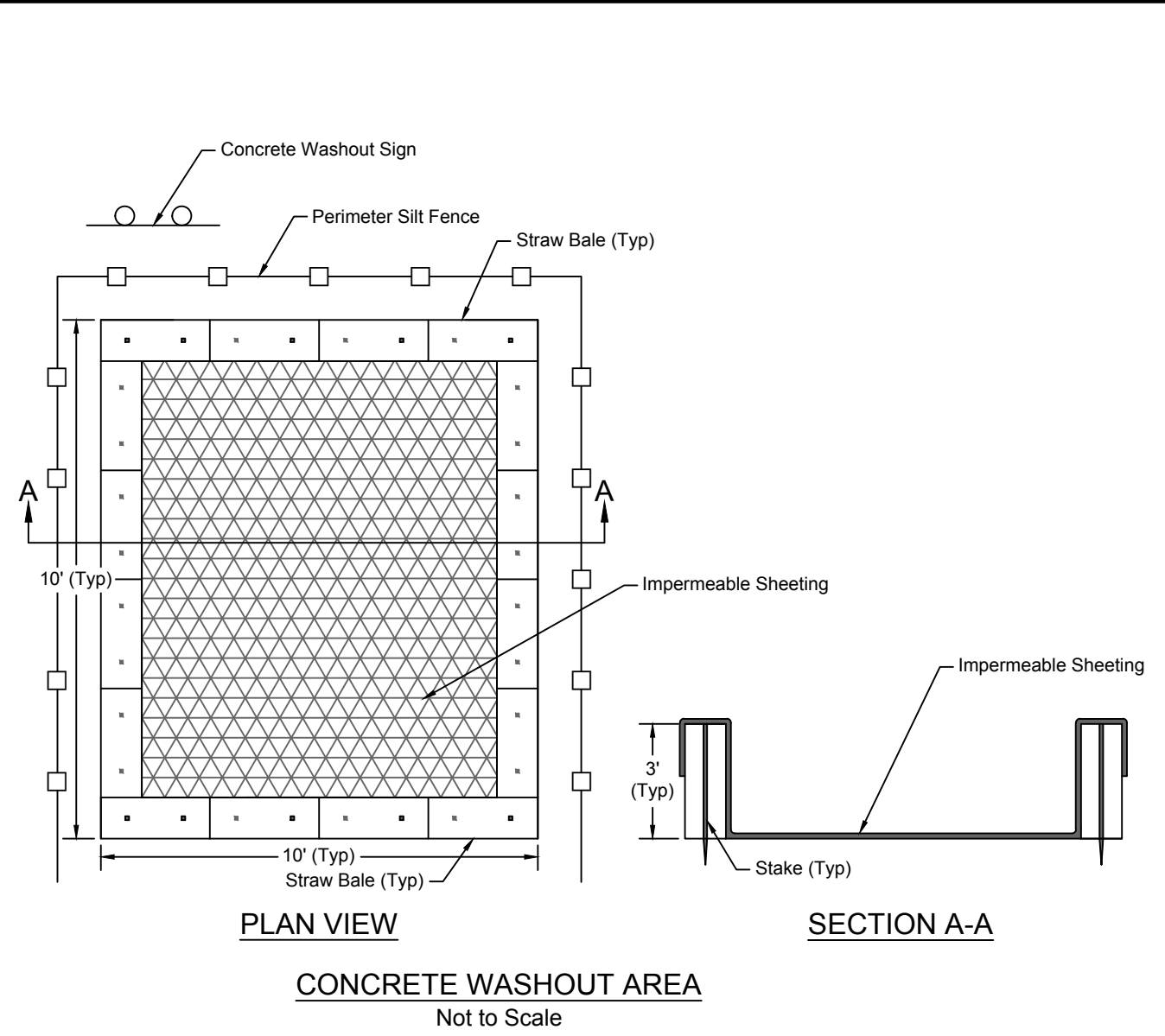
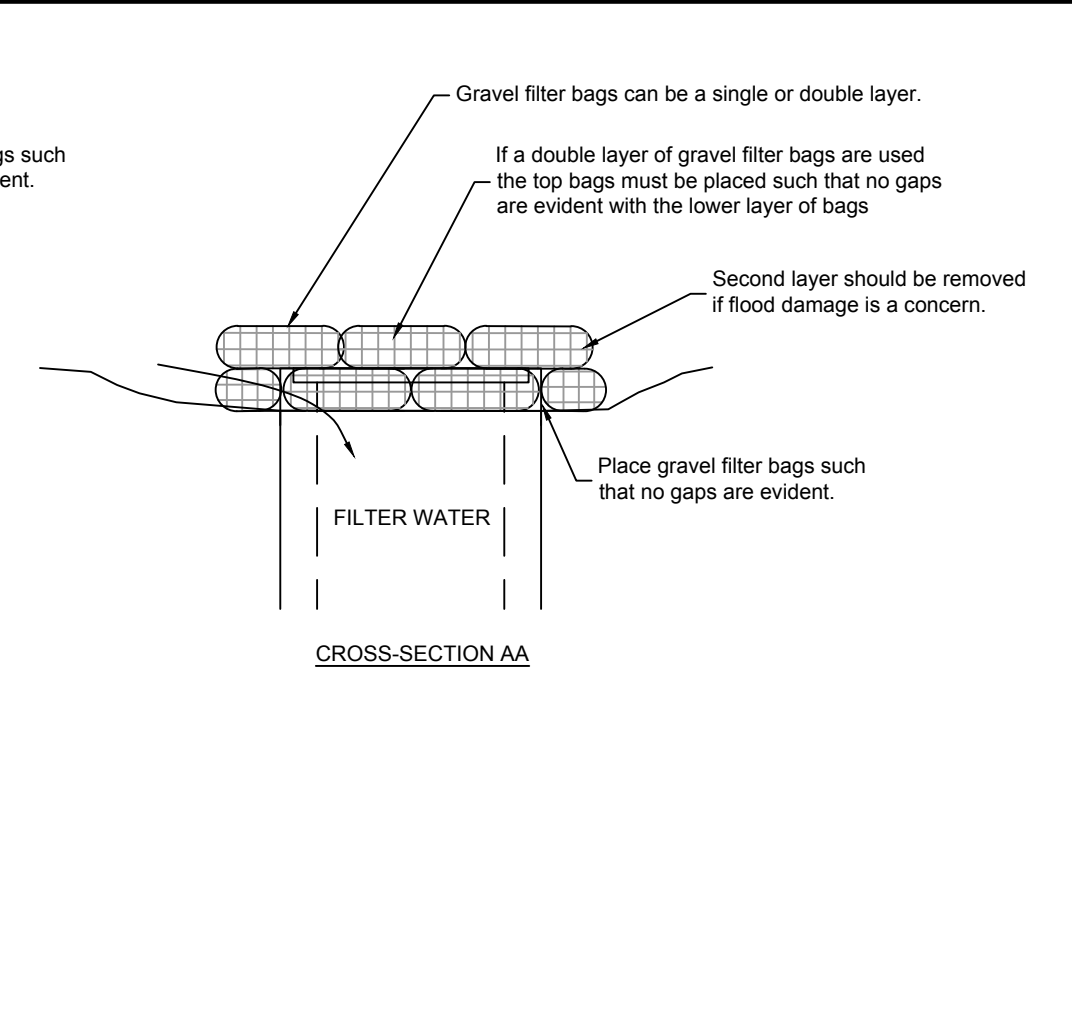
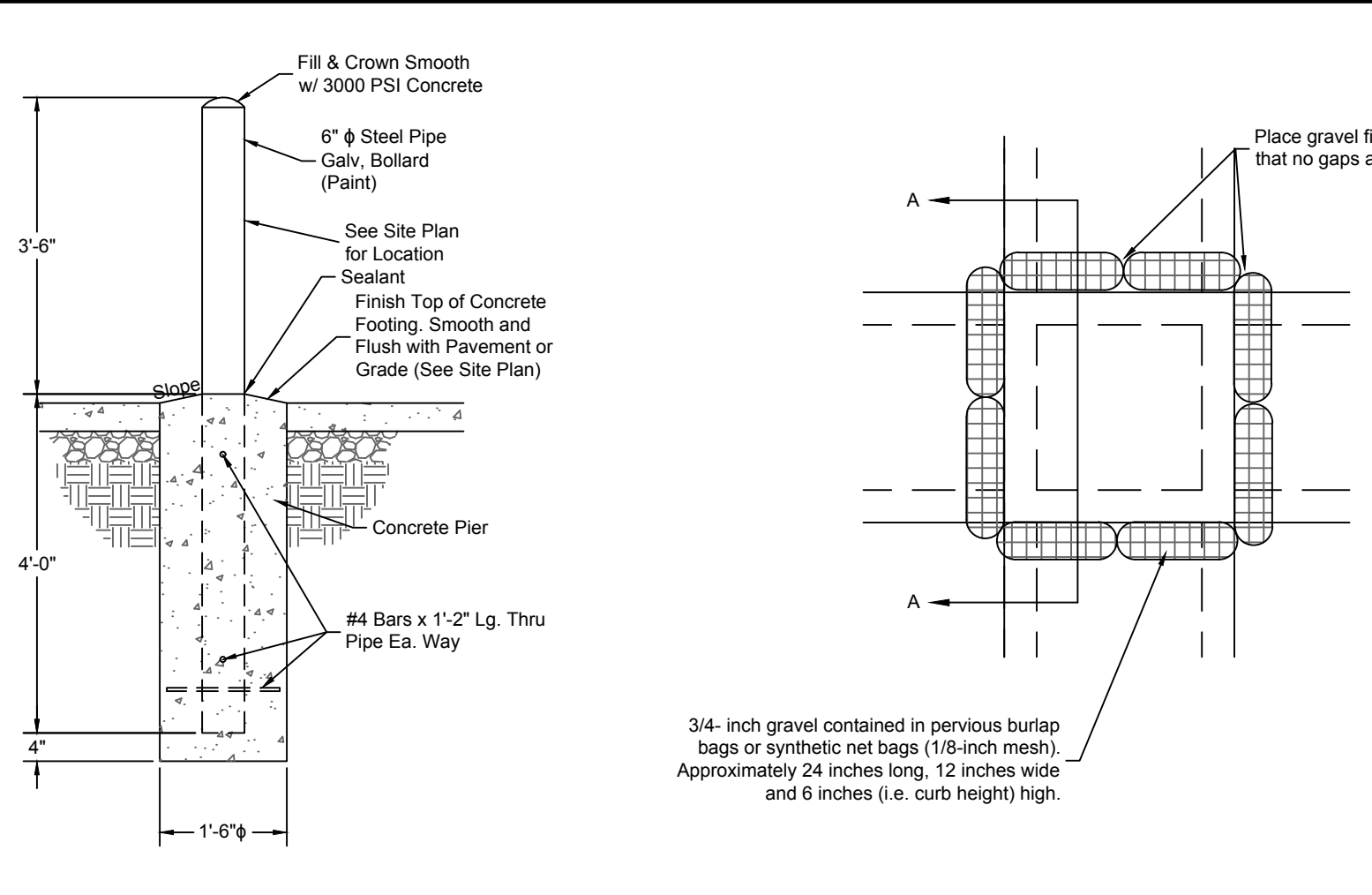
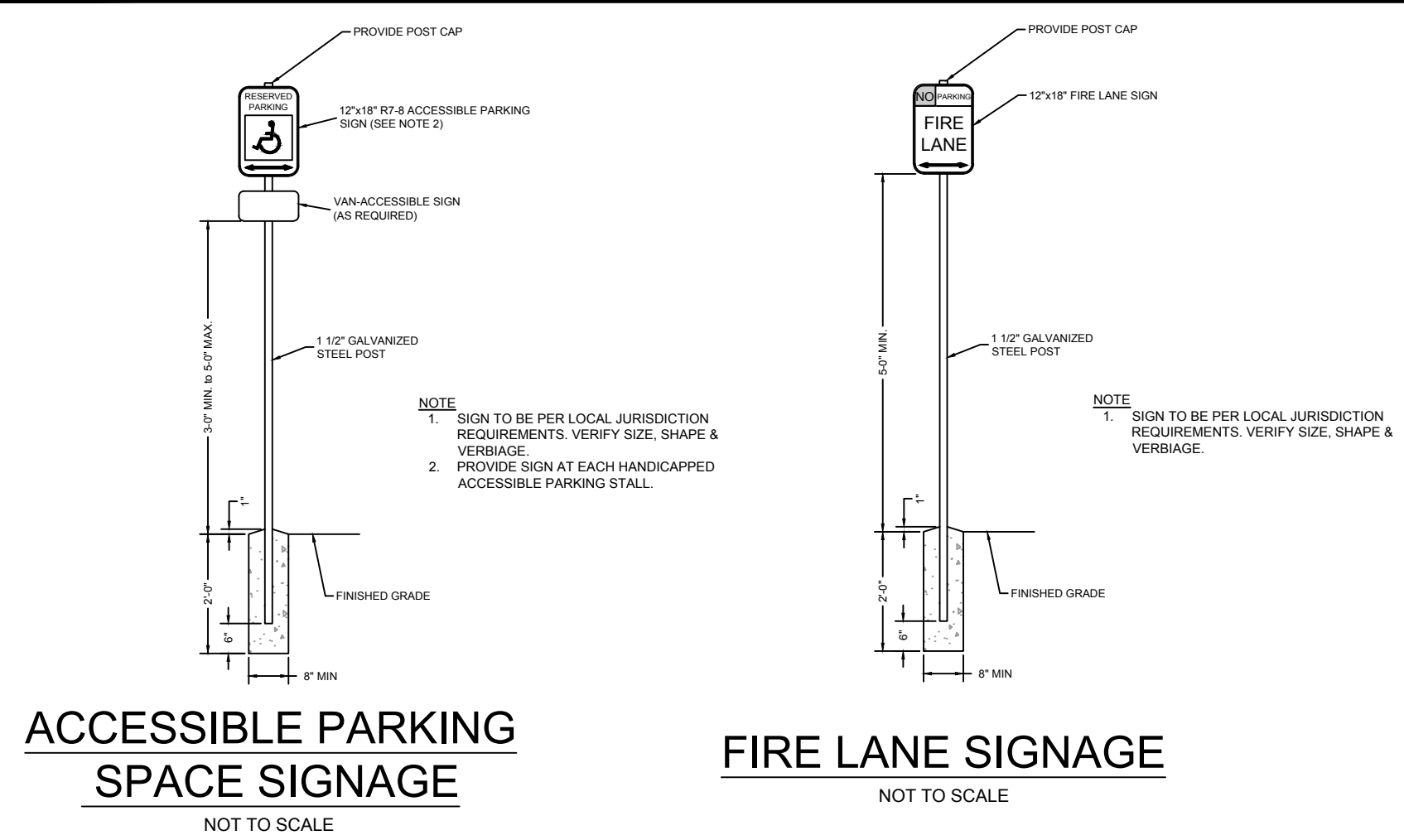
LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

STANDARD PRECAST MANHOLE – SANITARY SEWER

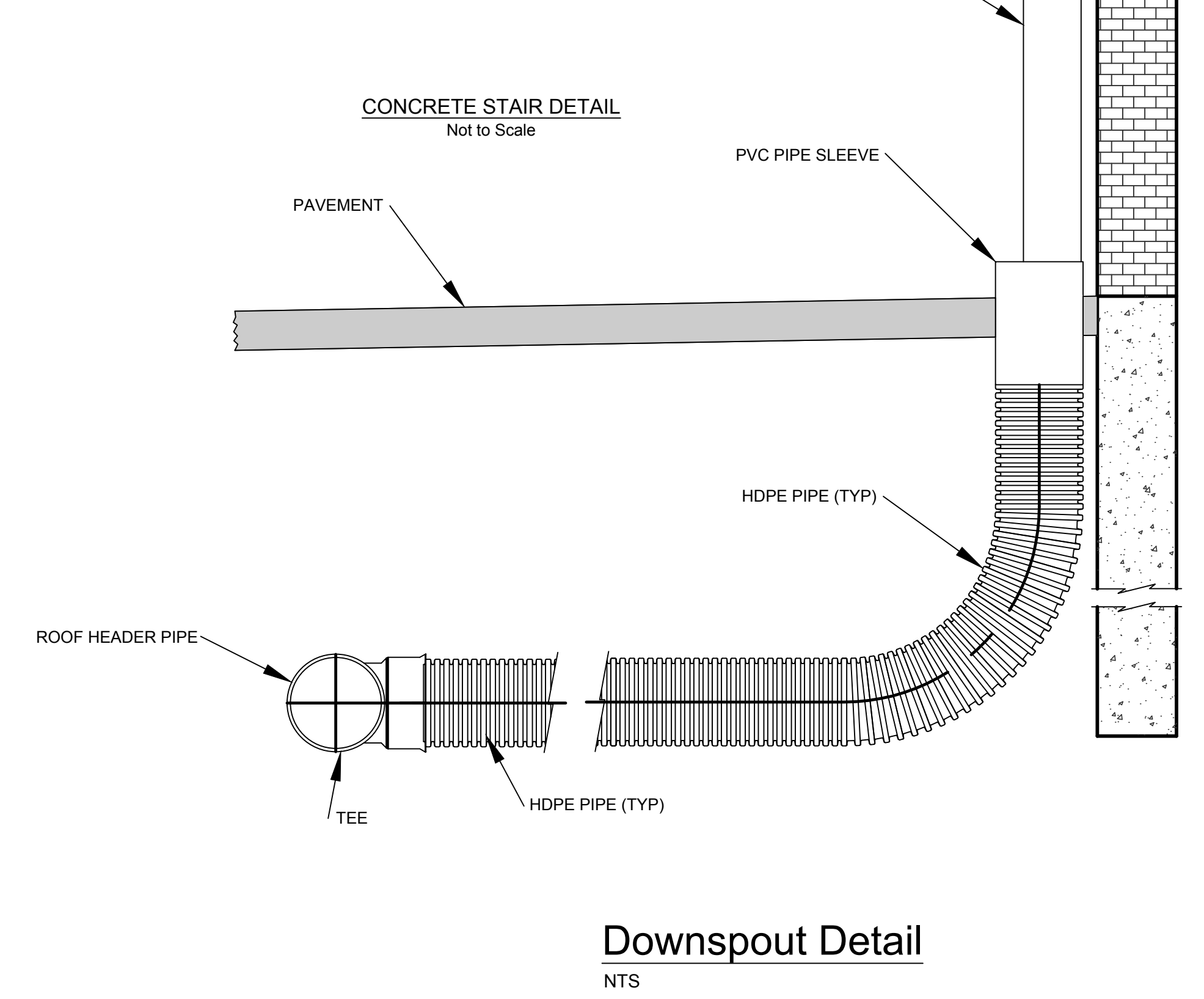
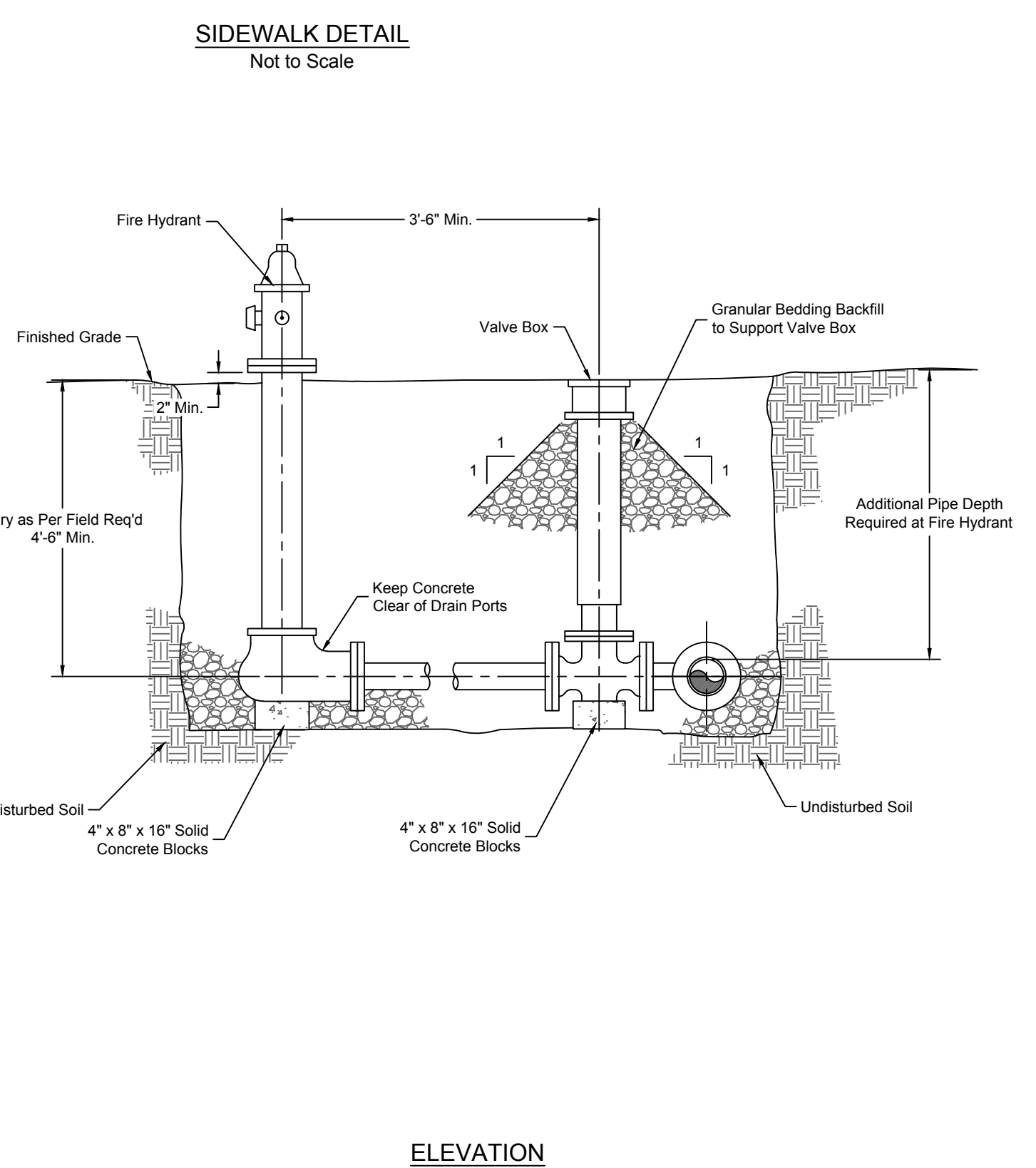
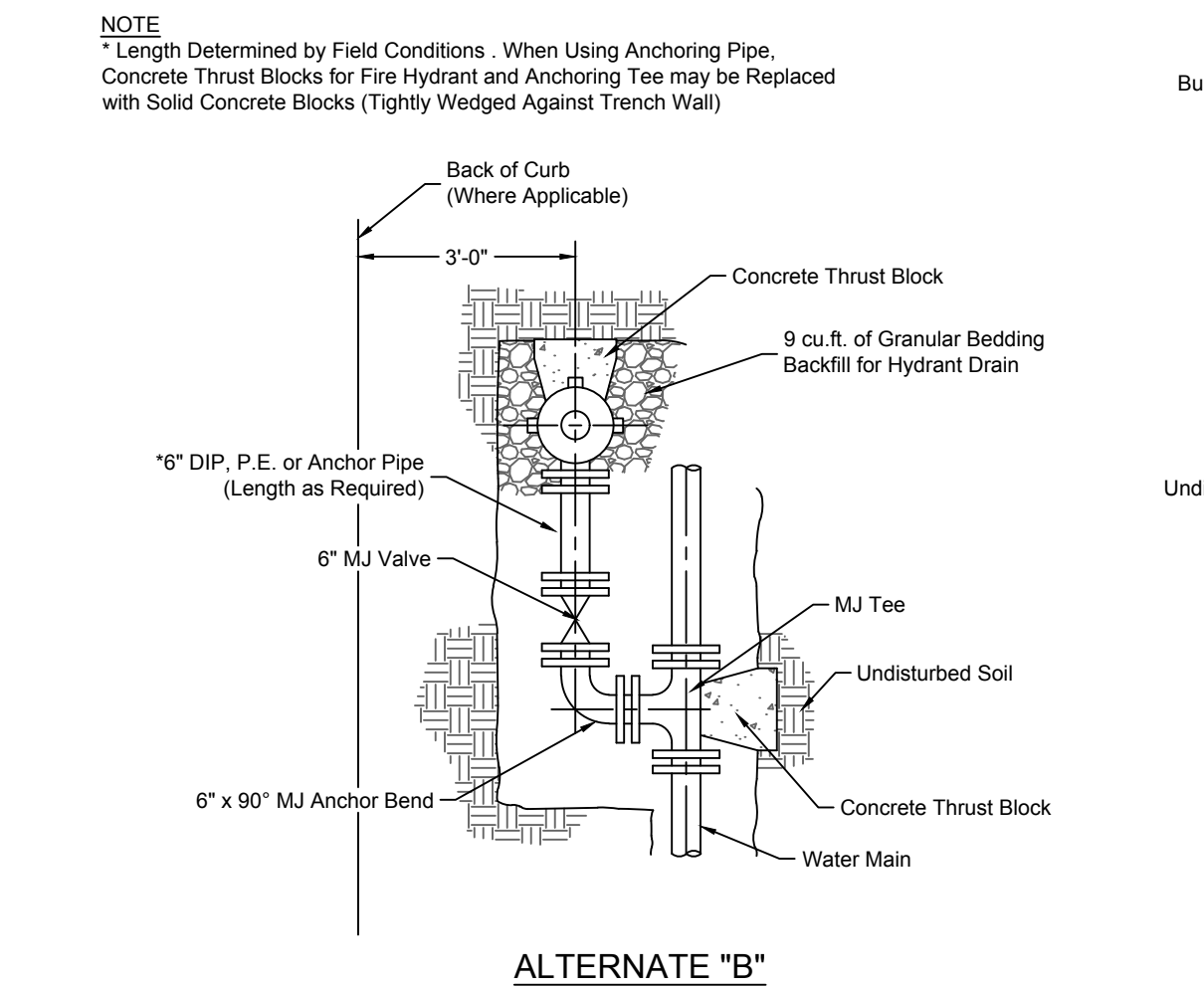
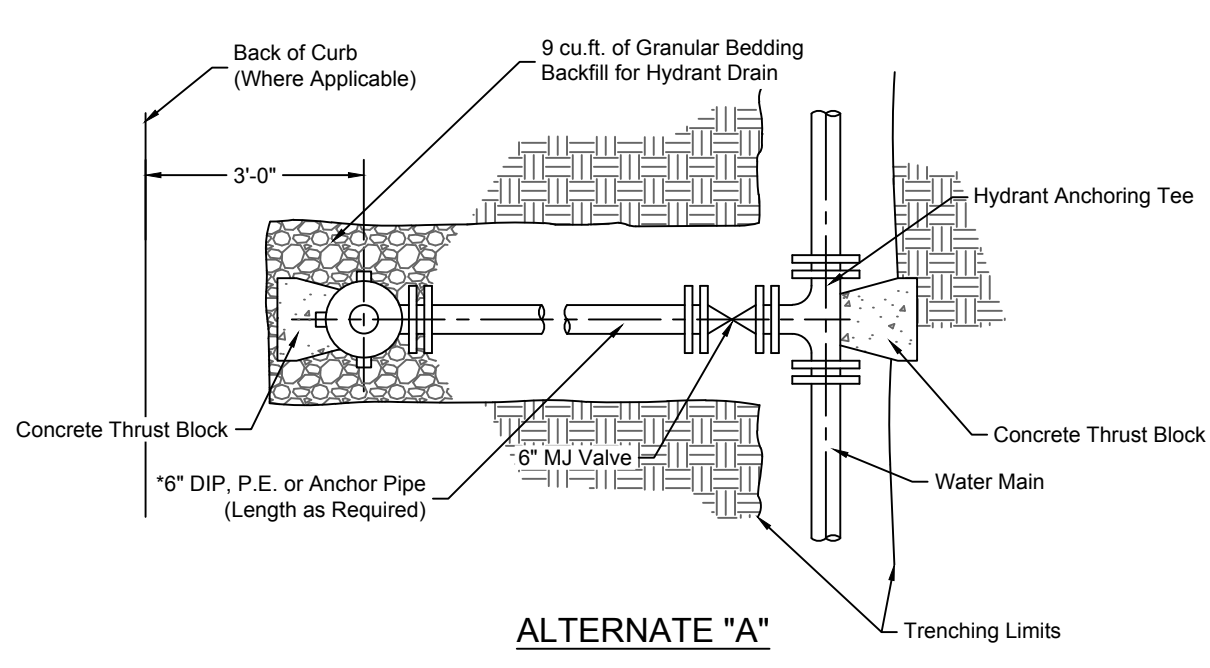
Date: 02/13
Drawn By: JN
Checked By: DL
FILE: SAN-2
Rev: 1/14

NOTES:
1. PRECAST CONCRETE MANHOLES SHALL CONFORM TO ASTM C478 EXCEPT AS MODIFIED BY THE SPECIFICATIONS.
2. A WALL THICKNESS NOT LESS THAN ONE-TWELFTH (1/12) OF THE INSIDE DIAMETER OR 4", WHICHEVER IS GREATER, SHALL BE USED WHEN THE MANHOLE DEPTH IS LESS THAN 15'.
3. WATERPROOFING SHALL BE REQUIRED ON THE OUTSIDE OF MANHOLES. THE WATERPROOFING SHALL CONSIST OF A TOTAL DRY FILM THICKNESS OF NOT LESS THAN 14 MILS OF BITUMINOUS COATING.
4. ONLY ECCENTRIC MANHOLE CONES WILL BE ALLOWED UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
5. THE FILL CONCRETE FLOW CHANNEL FOR SIDE BRANCHES SHALL BE PLACED TO PROVIDE A SMOOTH TRANSITION INTO THE FLOW LINE.
6. REFER TO THE APPROVED PRODUCTS LIST FOR WATER UTILITIES FOR APPROVED MANHOLE GASKET MODELS.
7. REFER TO THE APPROVED PRODUCTS LIST FOR APPROVED STEPS.

Apr 13, 2018 - 10:43am
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- SIDEWALK NOTES**
- 1/2" Pre-Molded Expansion Joints shall be Placed as Shown or not to Exceed 20' or When Abutting Existing Concrete.
 - 1/2" Control Joints Shall be Placed as Shown on the Drawings or at 5' Max.
 - Key All Construction Joints.
 - Prepared Subgrade Shall be Compacted and (2" in Cut Areas, 20" in Fill Areas Minimum. Any Project Geotech. Report shall Supersede these Minimums.



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KANSAS CITY, KANSAS 66103

MISSOURI CERTIFICATE OF AUTHORITY NO. 2000035630
STATE OF MISSOURI
MITCHELL S. SLUTTER
Professional Engineer
No. 0000035630
Exp. 08/31/18

Sidewalk Ramp Notes:

- Sidewalk ramp location determined from the intersection of the extension of back of sidewalk and back of curb & gutter.
- Plan drawings shall include a table of elevations for all points labeled as (Elev).
- Key all construction joints or use tie bars #4 epoxy coated @ 12" max.
- Longitudinal joint spacing to match width of sidewalk.
- Isolation joints shall be placed where walk abuts driveway and similar structures, and 25' centers max.
- Sidewalk Ramps shall be reinforced to provide ADA compliance slope = 2%.
- ADA maximum cross slope = 1/4".
- ADA maximum cross slope = 2%.
- Detectable warnings to comply with ADA requirements.
- Landing for Type C ramp along the entire curb return is preferred, but may be shortened to minimum ADA compliant dimension.

Legend:

- Ramp
- Landing
- 1/4" Detectable Warning
- Transition

Section A-A Type A & B Sidewalk Ramp
Scale: 1/2"=1'-0"

Section B-B Type A & B Sidewalk Ramp
Scale: 1/2"=1'-0"

Section C-C Type A & B Sidewalk Ramp
Scale: 1/2"=1'-0"

Section A-A Type C Sidewalk Ramp
Scale: 1/2"=1'-0"

Section B-B Type C Sidewalk Ramp
Scale: 1/2"=1'-0"

Section C-C Type C Sidewalk Ramp
Scale: 1/2"=1'-0"

Ramp Curb Detail
Scale: 1 1/2" = 1'-0"

Use With Type CG-2 Curb
Scale: 1"=1'-0"

Use With Type CG-1 Curb
Scale: 1"=1'-0"

Street Curb Detail at Ramp
Scale: 1"=1'-0"

Isolation Joint
Scale: 1"=1'-0"

Detectable Warning Dome Spacing and Section
Not to Scale

AMERICAN PUBLIC WORKS ASSOCIATION
KANSAS CITY
METROPOLITAN CHAPTER
STANDARD DRAWING NUMBER SW-1
ADOPTED: DECEMBER 18, 2002

SLAB TOP ALTERNATE FOR JUNCTION BOX (SHALLOW) CORNER DETAIL

NOTE: Ring & Cover to be Neenah R-1537, Clay & Bailey #200, Dealer #1315, or approved equal. (Casting may vary by municipality, refer to plans & contract documents.)

GENERAL NOTES:

- Locate ring and cover over outlet.
- All work and materials shall conform to Section 2600 APWA.
- Use 3/4" Chamfer strip or 1/2" R edge tool on all exposed concrete corners.
- Steps required at 16" O.C. when depth from top of casting to invert exceeds 4'.
- Boxouts will not be allowed to project through the corners of the structure and the minimum distance between boxouts is 8" with 1 corner bar.
- The minimum reinforcing shall be 1 H-Bar over a cast-in place pipe and 2 W-Bars over a precast boxout.
- Limit opening height to 6" with No. 5 galvanized bars extending to corner rears.
- Show field inlet orientation on plans plus number and size of openings locating point at center of structure.
- O.R. = one half outside pipe diameter (O.D.).
- Reinforcing of covers & streets requires special design.
- Ring & Cover to be Neenah R-1736, Clay & Bailey #200, Dealer #1315, or approved equal. (Casting may vary by municipality, refer to plans & contract documents.)

| REINFORCING | BAR SIZE | SPACING (in) |
|-------------|----------|--------------|
| H | 4 | 12 |
| V | 4 | 12 |
| L | 5 | 6 |
| W | 5 | 6 |

AMERICAN PUBLIC WORKS ASSOCIATION
KANSAS CITY
METROPOLITAN CHAPTER
STANDARD DRAWING NUMBER JB-1
ADOPTED: APRIL 17, 1996

GENERAL NOTES:

- The first dimension listed in the Construction Notes is the "L" dimension. The second dimension is the "M" dimension. "L" is listed on the project plans as listed at the inside face of the wall.
- Floor of inlet shall be shaped with invert to provide smooth flow.
- Locate MH ring and cover over outlet.
- Cast iron steps shall be spaced at 1'-4" O.C. vertically.
- Bevel all exposed edges with 3/4" chamfer or 1/2" tool ed edge.
- On-grade inlets shall conform to the street grade and sump inlets shall be level.
- The sums of "L" & "M" shall not exceed 14' without special design. (See project plans for details.)
- Ring & Cover to be Neenah R-1537, Clay & Bailey #200, Dealer #1315, or approved equal. (Casting may vary by municipality, refer to plans & contract documents.)

PLAN

SECTION G-G

FRONT ELEV.

AMERICAN PUBLIC WORKS ASSOCIATION
KANSAS CITY
METROPOLITAN CHAPTER
STANDARD DRAWING NUMBER CI-3
ADOPTED: APRIL 17, 1996

STANDARD PRECAST MANHOLE (CONCENTRIC CONE)
(See Eccentric Cone For Other Details)

STANDARD PRECAST MANHOLE (SHALLOW TYPE)
(See Eccentric Cone For Other Details)

GENERAL NOTES:

- All manholes are to be precast concrete and of Eccentric Cone type unless otherwise specified.
- Manhole top adjustments shall be accomplished by the use of concrete adjustment rings.
- Top of manhole casting shall be set flush and on same slope as finished surface or as directed by the Engineer.
- Reinforcement in all sections shall equal or exceed A.S.T.M. C-478 specifications.
- The engineer shall designate modifications for manholes with special designs.
- The inside diameter of the manhole shall be 4'-0" for pipe diameters from 12" thru 24", 5'-0" for pipe diameters from 27" thru 36", and 6'-0" for pipe diameters 42" thru 48".
- Clearance Tolerance of Pipe Openings: The Maximum Allowable Pipe Opening on a Horizontal Axis Shall be the Outside Diameter of the Pipe Plus 12". The Maximum Allowable Pipe Opening on a Vertical Axis Shall be the Outside Diameter Plus 8". The Minimum Clearance Between the Outside Surface of an Installed pipe and the Concrete of the Manhole Shall be 2".
- Installation of Pipe Openings: All required pipe openings shall be plant cast in manhole units. Field alterations of openings will be permitted provided walls are scored with a masonry saw to a depth sufficient to sever reinforcing steel. A chipping hammer may then be used to remove the concrete. Minimum distance between any two adjacent pipes shall be 4".
- No direct payment for shaping floor or connecting pipes as shown on plans.
- Ring & Cover to be Neenah R-1736, Clay & Bailey #200, Dealer #1315, or approved equal. (Casting may vary by municipality, refer to plans & contract documents.)
- Sanitary Sewers shall be coated and conform to Section 2600.

AMERICAN PUBLIC WORKS ASSOCIATION
KANSAS CITY
METROPOLITAN CHAPTER
STANDARD DRAWING NUMBER MH-1
ADOPTED: APRIL 17, 1996

Apr 13, 2018 10:43am
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MISSOURI CERTIFICATE OF AUTHORITY NO. 2000035350

Renaissance Infrastructure Consulting

STATE OF MISSOURI
PROFESSIONAL ENGINEER
MITCHELL SLUTTER
NUMBER
PE-2000035350
13/18