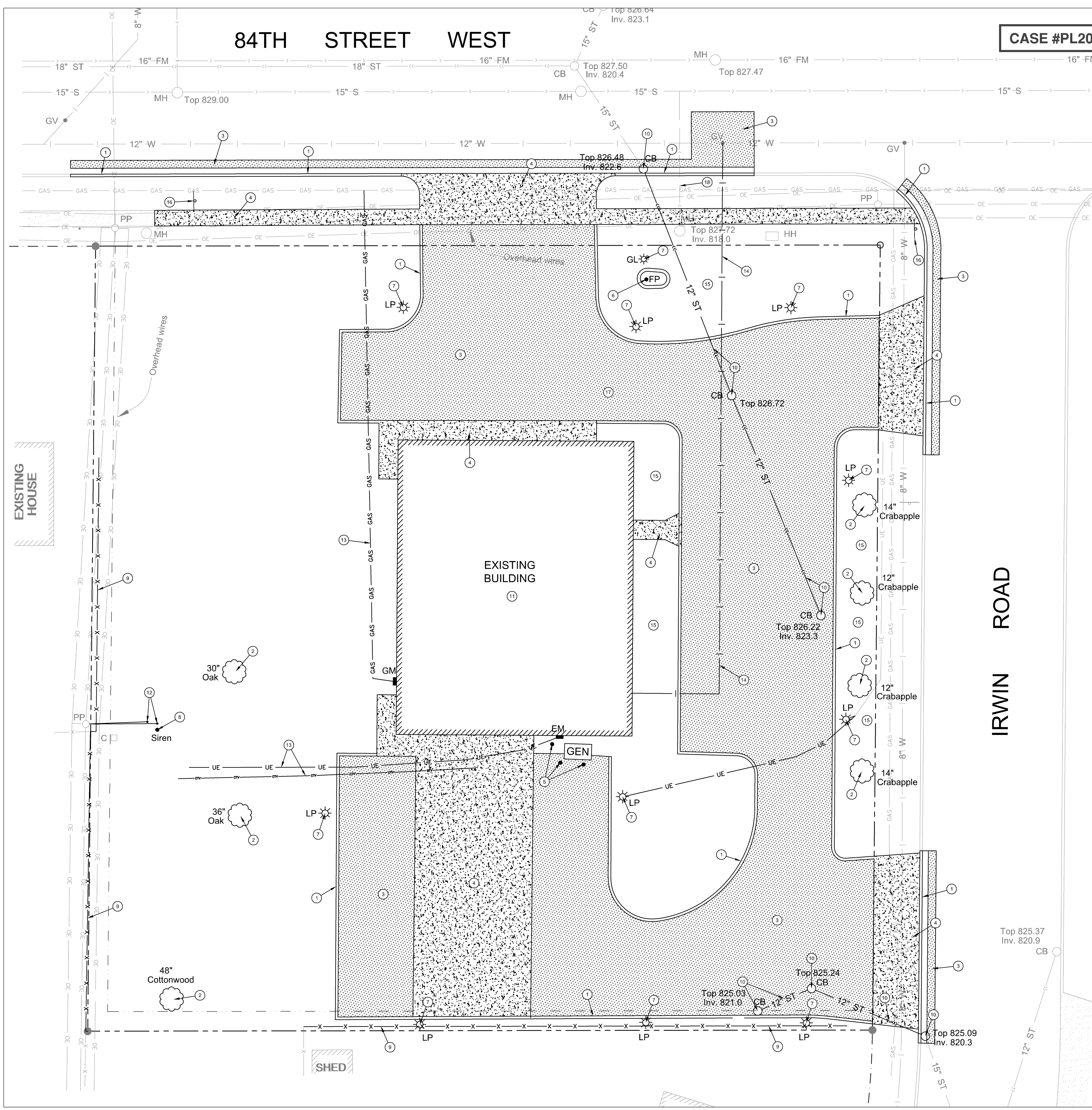
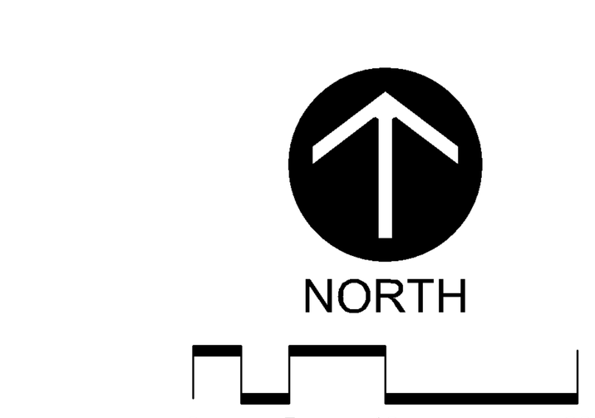
CASE #PL2021-186





SYMBOL LEGEND

- REMOVE AND DISPOSE OF EXISTING BITUMINOUS PAVEMENT SECTION
- REMOVE AND DISPOSE OF EXISTING CONCRETE PAVEMENT SECTION

KEY NOTES

1. SAWCUT, REMOVE, AND DISPOSE OF EXISTING CONCRETE CURB AND GUTTER.
2. REMOVE AND DISPOSE OF EXISTING TREE AND STUMP. SEE LANDSCAPE PLANS.
3. SAWCUT, REMOVE, AND DISPOSE OF EXISTING BITUMINOUS PAVEMENT.
4. SAWCUT, REMOVE, AND DISPOSE OF EXISTING CONCRETE PAVEMENT.
5. REMOVE AND DISPOSE OF EXISTING CONCRETE BOLLARD.
6. REMOVE AND DISPOSE OF EXISTING FLAG POLE.
7. REMOVE AND DISPOSE OF EXISTING LIGHT, POLE AND FOOTING.
8. REMOVE AND SALVAGE EXISTING EMERGENCY SIREN. COORDINATE RELOCATION WITH OWNER.
9. REMOVE AND DISPOSE OF EXISTING FENCE.
10. REMOVE AND DISPOSE OF EXISTING STORM SEWER PIPE AND/OR STRUCTURE.
11. REMOVE AND DISPOSE OF EXISTING BUILDING AND ALL APPURTENANCES IN ACCORDANCE WITH LOCAL CODES.
12. COORDINATE RELOCATION OF GUY WIRES WITH UTILITY OWNER.
13. REMOVE OR RELOCATE EXISTING SMALL UTILITY. COORDINATE WITH UTILITY OWNER.
14. REMOVE OR ABANDON EXISTING WATER SERVICE AT THE MAIN. LOCATION SHOWN IS APPROXIMATE.
15. REMOVE AND DISPOSE OF EXISTING LANDSCAPING (ROCK, FABRIC, EDGING, SHRUBS, ETC.)
16. REMOVE AND SALVAGE SIGN FOR REINSTALLATION.
17. REMOVE AND DISPOSE OF EXISTING SEWER (LOCATION UNKNOWN)
18. VIDEO INSPECT 6" VCP SANITARY SEWER LINE WITH CCTV TO VERIFY ADEQUATE CONDITION.

DEMOLITION NOTES

1. Verify all existing utility locations.
2. It is the responsibility of the Contractor to perform or coordinate all necessary utility demolitions and relocations from existing utility locations to all onsite amenities and buildings. These connections include, but are not limited to, water, sanitary sewer, cable tv, telephone, gas, electric, site lighting, etc.
3. Prior to beginning work, contact Gopher State Onecall (651-454-0002) to locate utilities throughout the area under construction. The Contractor shall retain the services of a private utility locator to locate the private utilities.
4. Sawcut along edges of pavements, sidewalks, and curbs to remain.
5. All construction shall be performed in accordance with state and local standard specifications for construction.
6. Erosion and sediment controls must be in place prior to beginning demolition.
7. If lane closures are needed on W 84th street or Irwin for the site demolition, a ROW construction permit will be needed with an approved traffic control plan.
8. Stage the sidewalk removal along W 84th Street to minimize the duration of sidewalk closure and pedestrian detour. If sidewalk is removed with an early stage, a temporary sidewalk surface will need to be provided and made available to pedestrians during all phases of the project where it would not pose a safety concern for pedestrians to be in the public right-of-way. During all sidewalk closure phases, a marked and signed pedestrian detour will need to be provided and if the closure duration exceeds two weeks, a temporary enhanced crosswalk may need to be provided at Johnson Avenue.
9. (2) All construction and post-construction parking and storage of equipment and materials must be on-site. Use of public streets for private construction parking, loading/unloading, and storage will not be allowed.

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I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: T.J. Rose, P.E.
SIGNATURE:
DATE:
LIC. NO.:

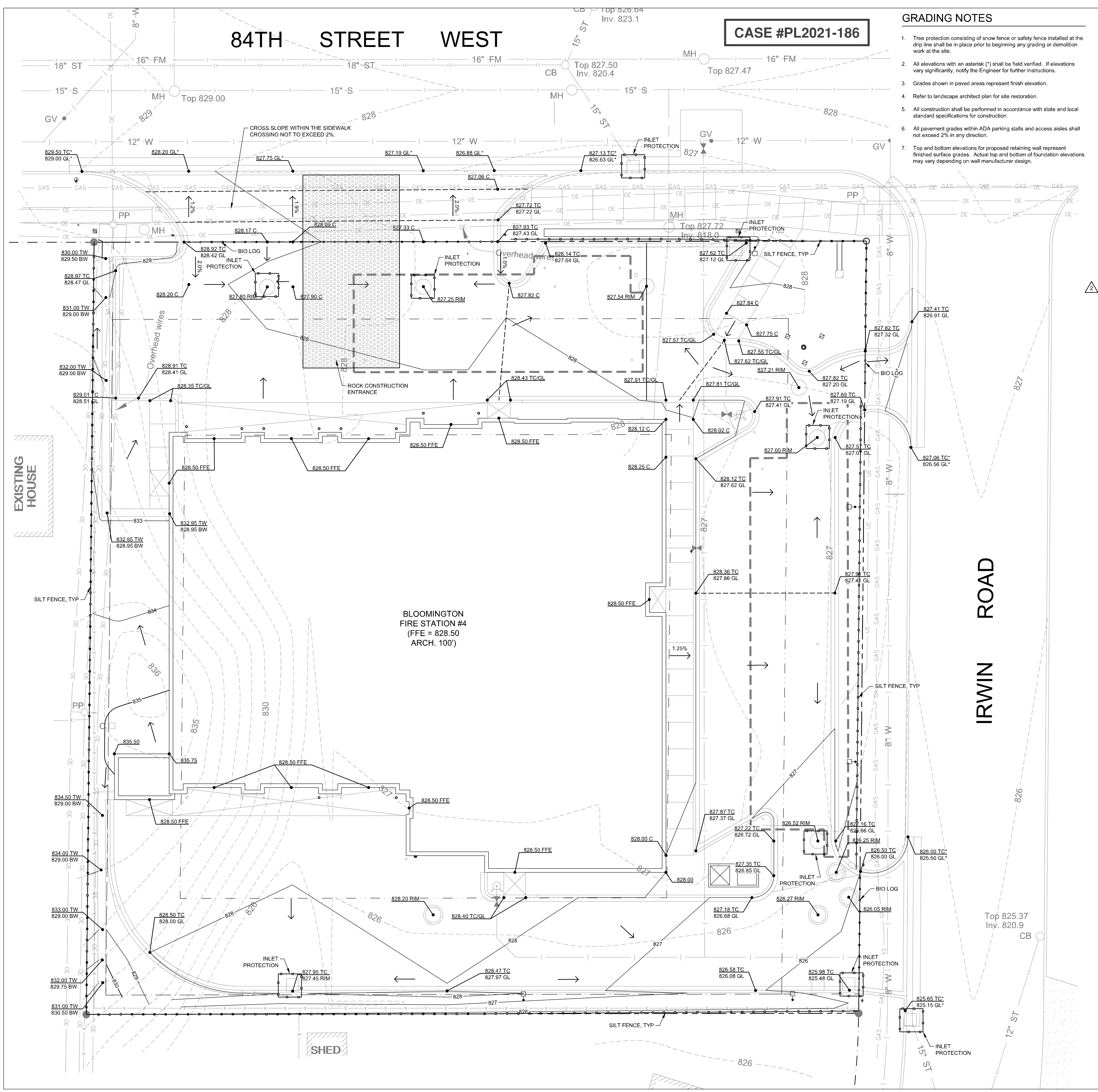
CITY OF BLOOMINGTON MINNESOTA

Bloomington Fire Station #4
4201 West 84th Street
Bloomington, MN 55437

REVISIONS:
1/4/2022: Addendum #2
(2) 3/1/2022: PR-C-1

CNH NO.: 19116
DATE: 11/22/21
DEMOLITION PLAN

C100



GRADING NOTES

1. Tree protection consisting of snow fence or safety fence installed at the drip line shall be in place prior to beginning any grading or demolition work at the site.
2. All elevations with an asterisk (*) shall be field verified. If elevations vary significantly, notify the Engineer for further instructions.
3. Grades shown in paved areas represent finish elevation.
4. Refer to landscape architect plan for site restoration.
5. All construction shall be performed in accordance with state and local standard specifications for construction.
6. All pavement grades within ADA parking stalls and access aisles shall not exceed 2% in any direction.
7. Top and bottom elevations for proposed retaining wall represent finished surface grades. Actual top and bottom of foundation elevations may vary depending on wall manufacturer design.

LEGEND

950	EXISTING CONTOURS
950	PROPOSED CONTOURS - MAJOR INTERVAL
949	PROPOSED CONTOURS - MINOR INTERVAL
	GRADE BREAK LINE
2.0%	GRADE SLOPE
	SILT FENCE
	BIO LOG
	RIP-RAP / ROCK CONST. ENTRANCE (ADDITIONAL ENTRANCES TO BE DETERMINED BY CONTRACTOR, AS NEEDED.)
	EROSION CONTROL BLANKET
	INLET PROTECTION
	CONCRETE WASHOUT STATION TO BE LOCATED BY CONTRACTOR, AS NECESSARY

SPOT ABBREVIATIONS:

950.00 TC
949.50 GL

TC - TOP OF CURB
GL - GUTTER LINE
B - BITUMINOUS
C - CONCRETE
EO - EMERGENCY OVERFLOW
TW - TOP OF WALL
BW - BOTTOM OF WALL (F/G)
(*) - EXISTING TO BE VERIFIED

EROSION CONTROL NOTES

2

1. Install temporary erosion control measures (inlet protection, silt fence, and rock construction entrances) prior to beginning any excavation or demolition work at the site.
2. Erosion control measures shown on the erosion control plan are the absolute minimum. The contractor shall install temporary earth dikes, sediment traps or basins, additional siltation fencing, and/or disk the soil parallel to the contours as deemed necessary to further control erosion.
3. All construction site entrances shall be surfaced with crushed rock across the entire width of the entrance and from the entrance to a point 50' into the construction zone.
4. The toe of the silt fence shall be trenched in a minimum of 6". The trench backfill shall be compacted with a vibratory plate compactor.
5. All grading operations shall be conducted in a manner to minimize the potential for site erosion. Sediment control practices must be established on all down gradient perimeters before any up gradient land disturbing activities begin.
6. All exposed soil areas must be stabilized as soon as possible to limit soil erosion but in no case later than 7 days after the construction activity in that portion of the site has temporarily or permanently ceased. Temporary stockpiles without significant silt, clay or organic components (e.g., clean aggregate stockpiles, demolition concrete stockpiles, sand stockpiles) and the constructed base components of roads, parking lots and similar surfaces are exempt from this requirement.
7. The normal wetted perimeter of any temporary or permanent drainage ditch or swale that drains water from any portion of the construction site, or diverts water around the site, must be stabilized within 200 lineal feet from the property edge, or from the point of discharge into any surface water. Stabilization of the last 200 lineal feet must be completed within 24 hours after connecting to a surface water. Stabilization of the remaining portions of any temporary or permanent ditches or swales must be complete within 7 days after connecting to a surface water and construction in that portion of the ditch has temporarily or permanently ceased.
8. All storm sewer catch basins not needed for site drainage during construction shall be covered to prevent runoff from entering the storm sewer system. Catch basins necessary for site drainage during construction shall be provided with inlet protection.
9. In areas where concentrated flows occur (such as swales and areas in front of storm catch basins and intakes) the erosion control facilities shall be backed by stabilization structure to protect those facilities from the concentrated flows.
10. Inspect the construction site once every seven days during active construction and within 24 hours after a rainfall event greater than 0.5 inches in 24 hours.
11. All BMPs must be repaired, replaced, or supplemented when they become nonfunctional or the sediment reaches 1/3 of the capacity of the BMP. These repairs must be made within 24 hours of discovery, or as soon as field conditions allow access.
12. If sediment escapes the construction site, off-site accumulations of sediment must be removed in a manner and at a frequency sufficient to minimize off-site impacts.
13. All soils tracked onto pavement shall be removed daily.
14. All filtration areas must be inspected to ensure that no sediment from ongoing construction activity is reaching the filtration area and these areas are protected from compaction due to construction equipment driving across the filtration area.
15. Temporary soil stockpiles must have silt fence or other effective sediment controls, and cannot be placed in surface waters, including stormwater conveyances such as curb and gutter systems, or conduits and ditches unless there is a bypass in place for the stormwater.
16. Collected sediment, asphalt and concrete millings, floating debris, paper, plastic, fabric, construction and demolition debris and other wastes must be disposed of properly and must comply with MPCA disposal requirements.
17. Oil, gasoline, paint and any hazardous substances must be properly stored, including secondary containment, to prevent spills, leaks or other discharge. Restricted access to storage areas must be provided to prevent vandalism. Storage and disposal of hazardous waste must be in compliance with MPCA regulations.
18. External washing of trucks and other construction vehicles must be limited to a defined area of the site. Runoff must be contained and waste properly disposed of. No engine degreasing is allowed onsite.
19. All liquid and solid wastes generated by concrete washout operations must be contained in a leak-proof containment facility or impermeable liner. A compacted clay liner that does not allow washout liquids to enter ground water is considered an impermeable liner. The liquid and solid wastes must not contact the ground, and there must not be runoff from the concrete washout operations or areas. Liquid and solid wastes must be disposed of properly and in compliance with MPCA regulations. A sign must be installed adjacent to each washout facility to inform concrete equipment operators to utilize the proper facilities.
20. Upon completion of the project and stabilization of all graded areas, all temporary erosion control facilities (silt fences, hay bales, etc.) shall be removed from the site.

ENGINEERING DIVISION
Approved By: Julie Long, PE
03/08/2022 3:34:13 PM

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PRINT NAME: T.J. Rose, P.E.
SIGNATURE: T.J. Rose
DATE: 1/28/2022 LIC. NO.: 53681

CITY OF BLOOMINGTON MINNESOTA

Bloomington Fire Station #4

4201 West 84th Street
Bloomington, MN 55437

REVISIONS:
1/4/2022: Addendum #2
2 3/1/2022: PR-C-1

CNH NO.: 19116
DATE: 11/22/21

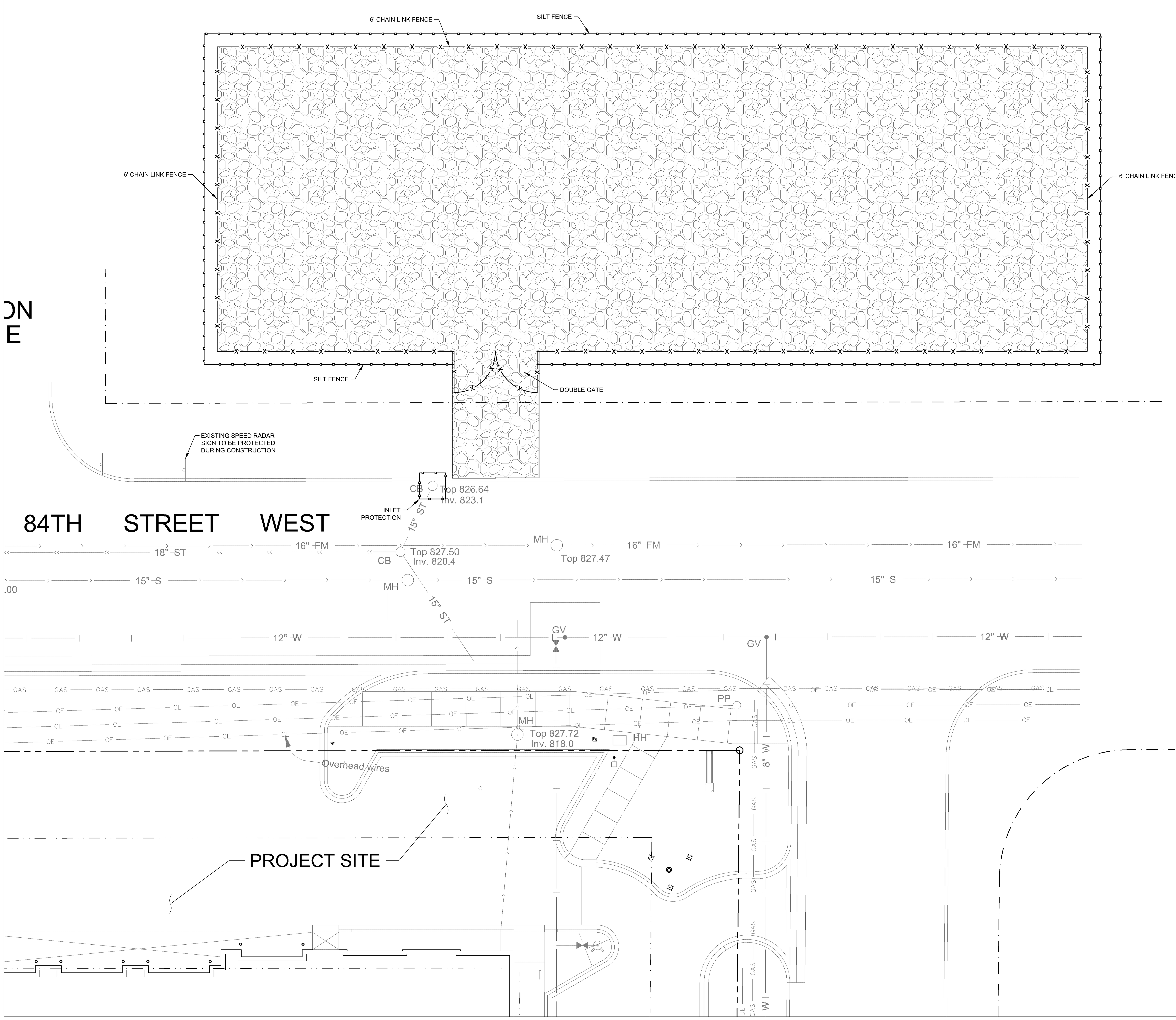
GRADING AND EROSION CONTROL PLAN

C300

CASE #PL2021-186

LEGEND

- SILT FENCE
- 6" AGGREGATE OVER GEOTEXTILE FABRIC
- INLET PROTECTION



SITE RESTORATION NOTES

1. At the completion of the project, aggregate and geotextile to be removed and disposed of by contractor.
2. Entire disturbed area to be de-compacted to a minimum depth of 18".
3. Restore all disturbed areas with 6" of good quality topsoil and seed.

EROSION CONTROL NOTES

(2)

1. Install temporary erosion control measures (inlet protection, silt fence, and rock construction entrances) prior to beginning any excavation or demolition work at the site.
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20. Upon completion of the project and stabilization of all graded areas, all temporary erosion control facilities (silt fences, hay bales, etc.) shall be removed from the site.

ENGINEERING DIVISION
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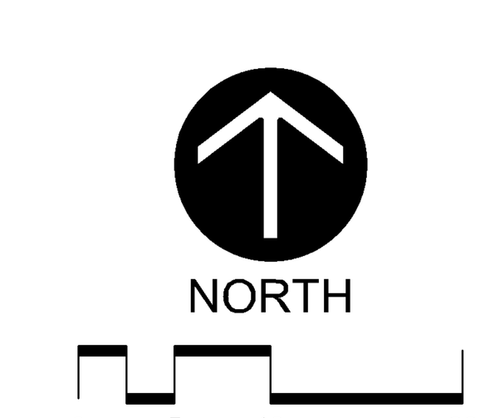

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PRINT NAME: T.J. Ross, P.E.
SIGNATURE:
DATE: 1/26/2022 LIC. NO.: 53681

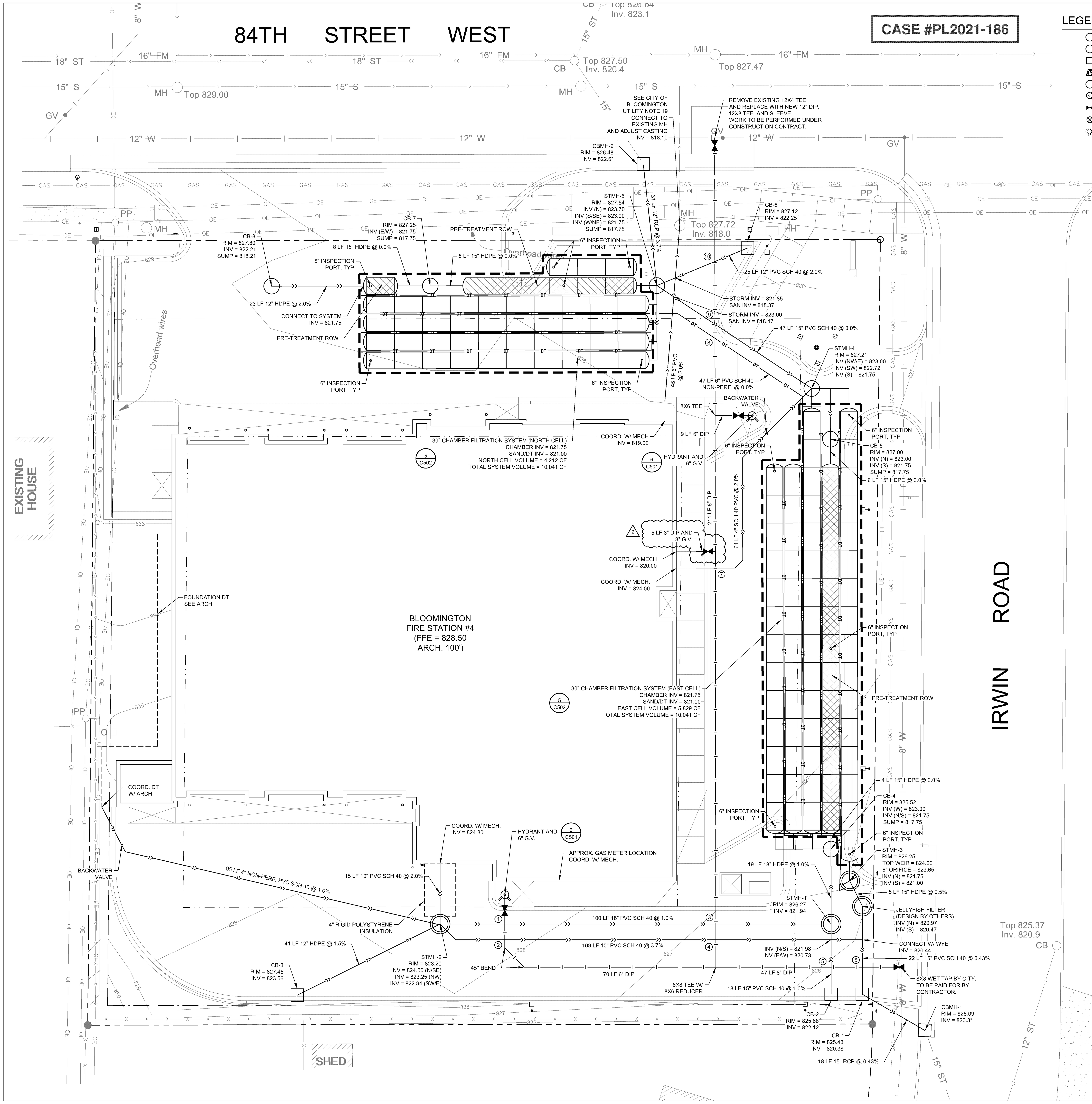
CITY OF BLOOMINGTON MINNESOTA

Bloomington Fire Station #4
4201 West 84th Street
Bloomington, MN 55437

REVISIONS:
1/4/2022: Addendum #2
(2) 3/1/2022: PR-C-1

CNH NO.: 19116
DATE: 11/22/21
CONSTRUCTION STAGING AREA

C301



LEGEND

- STORM MANHOLE
- CATCH BASIN
- CURB INLET
- FLARED END
- SANITARY MANHOLE
- HYDRANT
- GATE VALVE & BOX
- WATER SHUTOFF
- LIGHT POLE
- CABLE UNDERGROUND LINE
- ELECTRIC OVERHEAD LINE
- ELECTRIC UNDERGROUND LINE
- FIBER OPTIC UNDERGROUND LINE
- NATURAL GAS UNDERGROUND LINE
- SANITARY SEWER PIPE
- STORM SEWER PIPE
- TELEPHONE UNDERGROUND LINE
- WATERMAIN PIPE
- DRAINTILE PIPE

UTILITY NOTES

1. It is the responsibility of the contractor to perform or coordinate all necessary utility connections and relocations from existing utility locations to the proposed building, as well as to all onsite amenities. These connections include but are not limited to water, sanitary sewer, cable TV, telephone, gas, electric, site lighting, etc.
2. All service connections shall be performed in accordance with state and local standard specifications for construction.
3. The contractor shall verify the elevations at proposed connections to existing utilities prior to any demolition or excavation.
4. The contractor shall notify all appropriate engineering departments and utility companies 72 hours prior to construction. All necessary precautions shall be made to avoid damage to existing utilities.
5. Storm sewer requires testing in accordance with Minnesota plumbing code 4714.1109 where located within 10 feet of waterlines or the building.
6. All RCP pipe shown on the plans shall be MN/DOT class 3.
7. See Project Specifications for bedding requirements.
8. Pressure test and disinfect all new watermains in accordance with state and local requirements.

CITY OF BLOOMINGTON UTILITY NOTES

1. Utility permits are required for connections to the public storm, sanitary, and water system. Contact Utilities (952-563-8777) for permit information.
2. All components of the water system, up to the water meter or fire service equipment must utilize protective internal coatings meeting current ANSI/AWWA standards for cement mortar lining or special coatings. The use of unlined or uncoated pipe is not allowed.
3. Provide a minimum of 8-feet and a maximum of 10-feet of cover over all water lines, valves, services, etc.
4. Utility and mechanical contractors must coordinate the installation of all water and sewer service pipes into the building to accommodate city inspection and testing. For building permit water meter must be within 10' of entering building and within 4' of floor drain.
5. Utility as-builts must be provided prior to issuance of Certificate of Occupancy.
6. A minimum 10-foot horizontal separation and 18-inch vertical separation is required between watermain and sewers.
7. Use Class 52 DIP water main for pipe 12-inches in diameter and smaller. A minimum 8 mil polywrap is required on all DIP. See current 2021 Construction specifications for zinc coated WM and V-Bio based poly encasement.
8. Combination fire and domestic services must terminate with a thread on flange or an MJ to flange adapter.
9. Install interior chimney seals on all sanitary sewer manholes.
10. Use updated city standard details for driveways, utilities, erosion control, etc. found on the website at www.bloomingtonmn.gov/information-sheets-and-handouts-engineering-division.
11. Sanitary sewer mainline, clean-outs, manholes, and services must be designed with adequate depth of cover or install high-density polystyrene insulation to prevent freezing.
12. Use standard short cone manholes without steps.
13. Utility permits are required for connections to the public storm, sanitary, and water system. Contact Utilities (952-563-8777) for permit information.
14. Contractor shall obtain a Public Works permit for underground work within the right-of-way. Permit is required prior to removals or installation. Contact Utilities (952-563-4568) for permit information.
15. Use schedule 40, SDR 26, or better for PVC sewer services.
16. Utility and mechanical contractors must coordinate the installation of all water and sewer service pipes into the building to accommodate city inspection and testing.
17. All components of the water system, up to the water meter or fire service equipment must utilize protective internal coatings meeting current ANSI/AWWA standards for cement mortar lining or special coatings. The use of unlined or uncoated pipe is not allowed.
18. Taps of live water mains are done by City forces and paid for and coordinated with the Contractor.
19. Video inspect 6" VCP sanitary sewer service with CCTV to verify adequate condition.

Crossing #	Top of Water Pipe Elev.*	Crossing Utility Invert	Separation
1	820.25	822.78	2.53'
2	820.11	823.83	3.72'
3	818.91	822.24	3.33'
4	818.80	821.84	3.04'
5	817.94	822.05	4.11'
6	817.77	820.41	2.64'
7	819.81	823.90	4.09'
8	819.49	821.00	1.51'
9	819.51	823.00	3.49'
10	819.29	822.07	2.78'

*Pipe cover assumed to be 8' below finished grade

ENGINEERING DIVISION
Approved By: Julie Long, PE
03/08/2022 3:34:45 PM

NORTH

0 5 10 20

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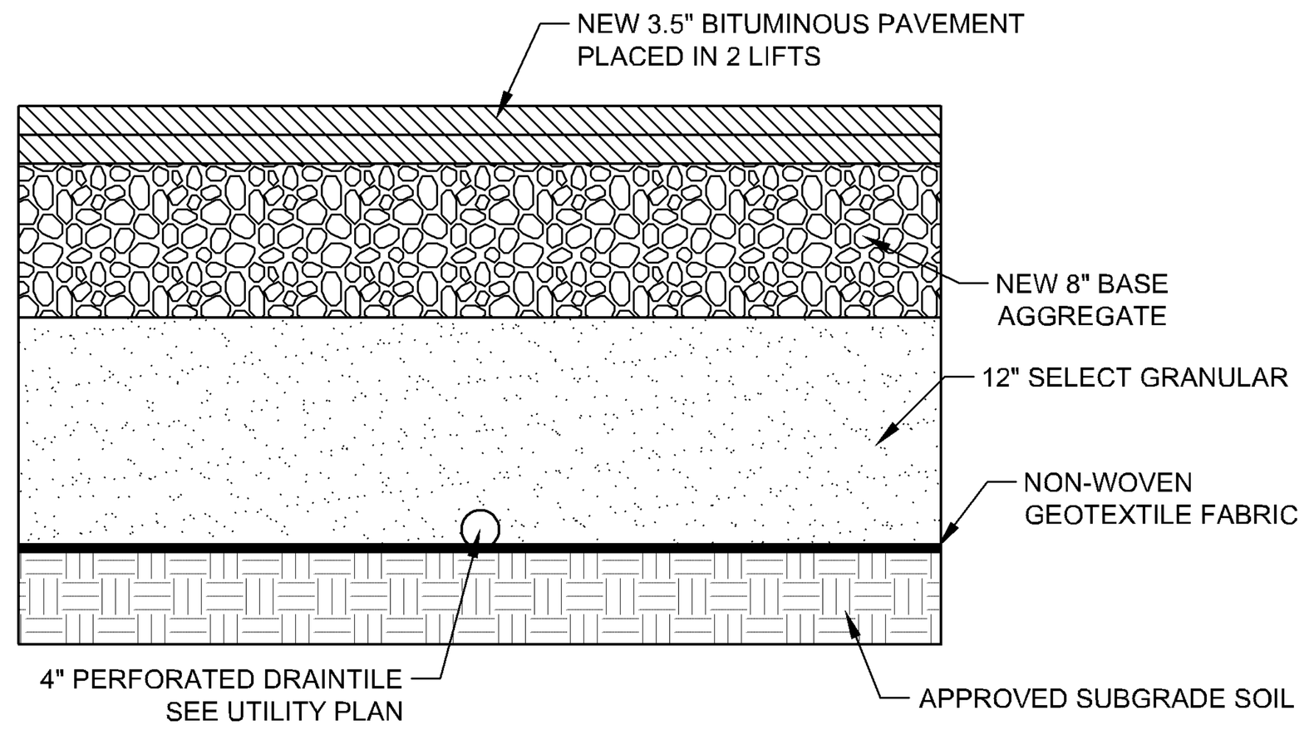
DATE: 11/22/21
UTILITY PLAN

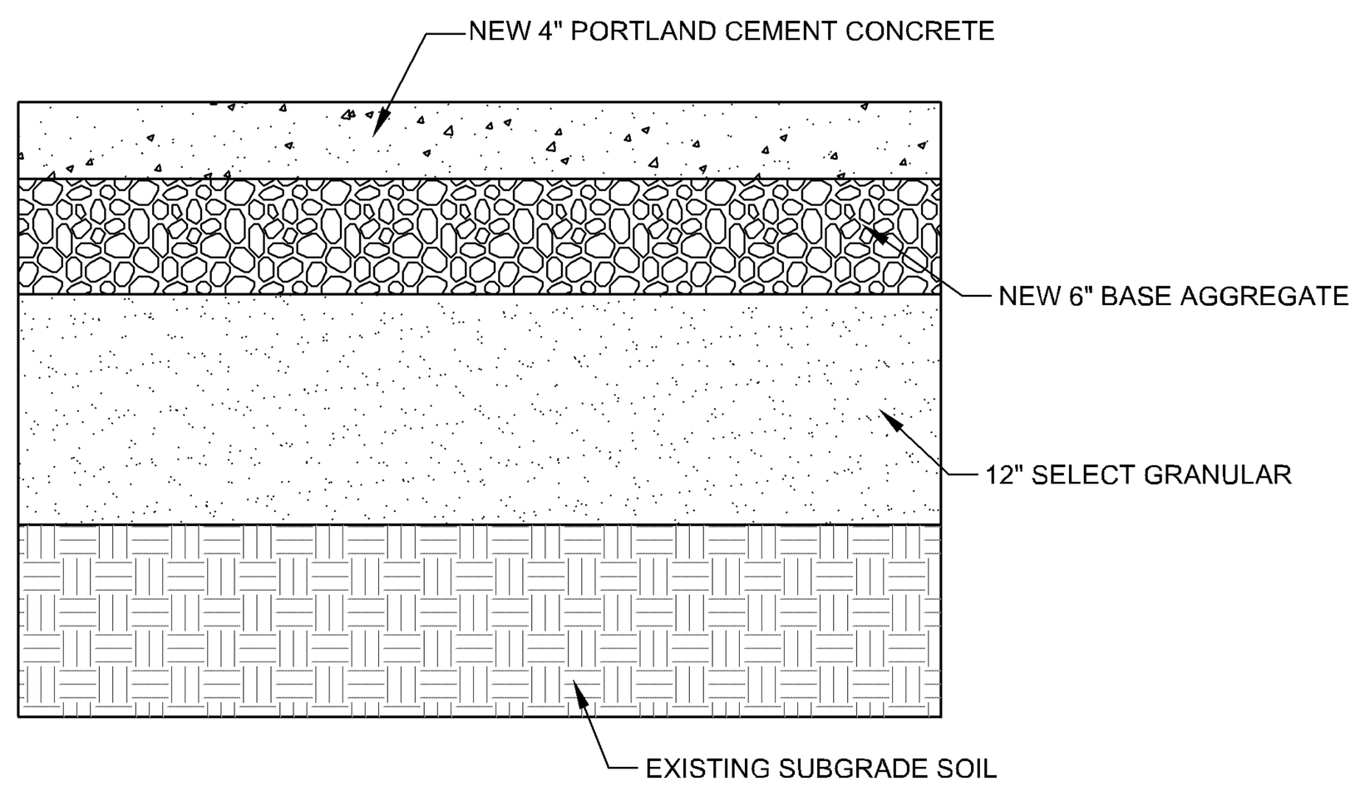
C400

CASE #PL2021-186



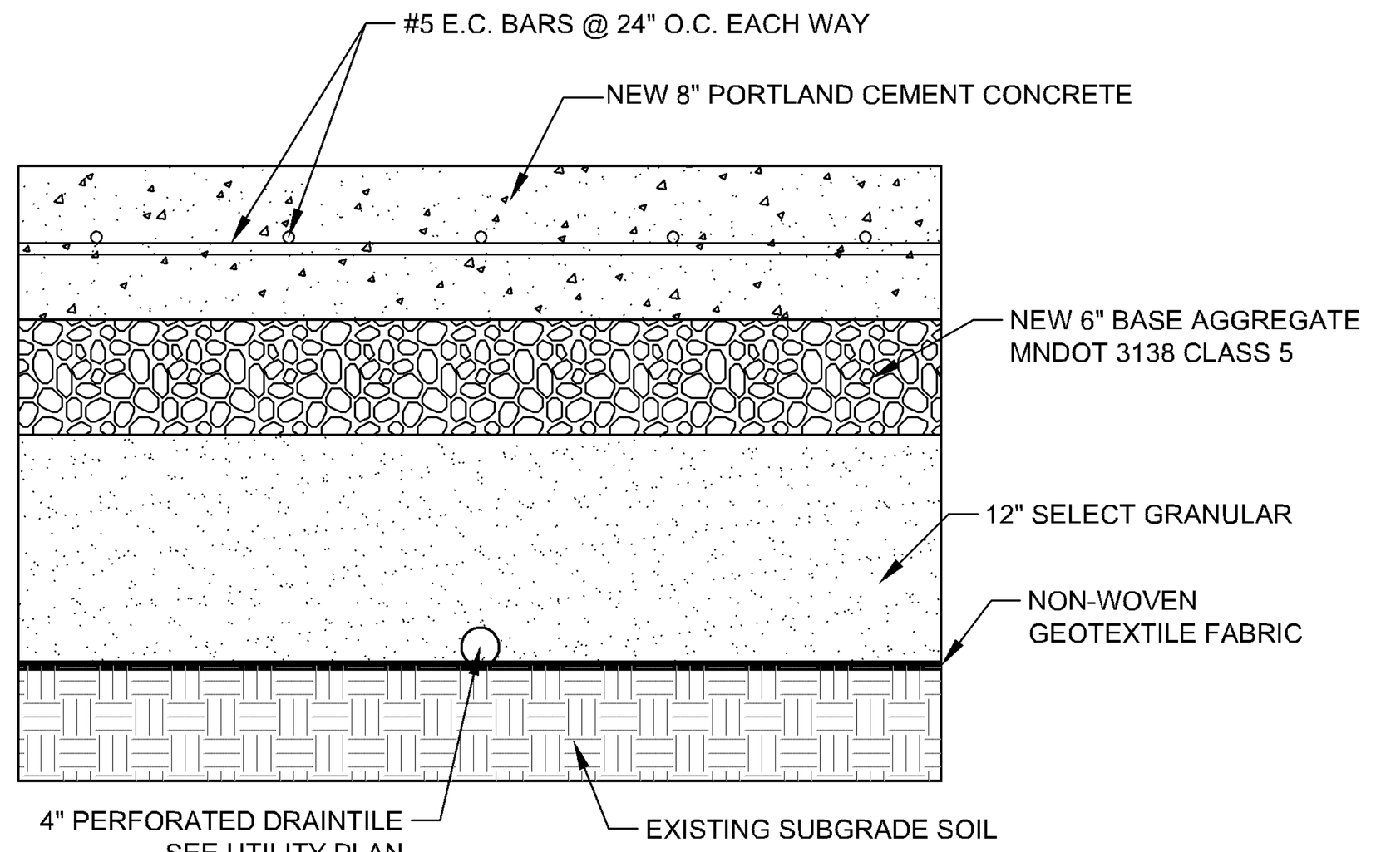
1 C500 LIGHT-DUTY BITUMINOUS CONSTRUCTION DETAIL

NOT TO SCALE



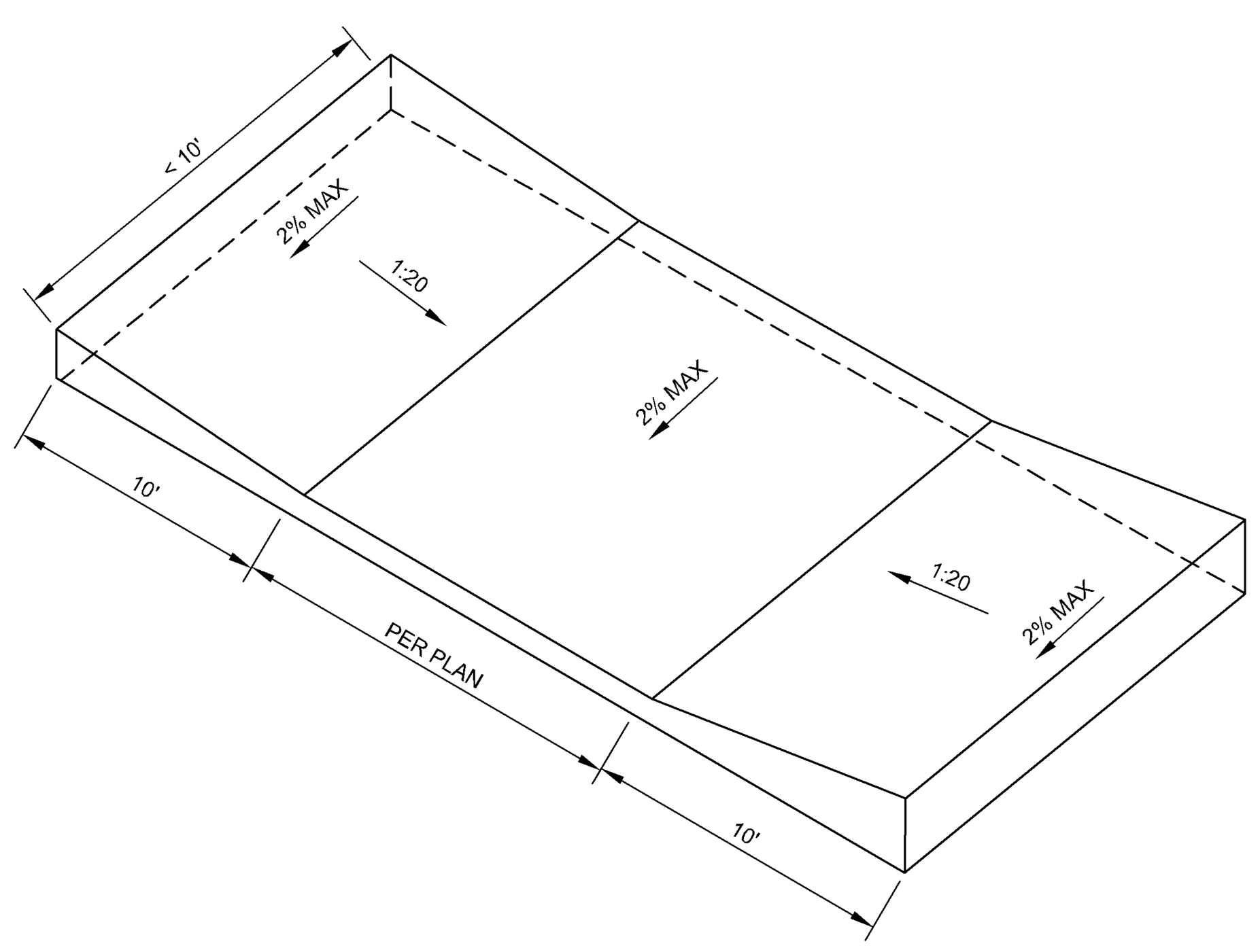
2 C500 CONCRETE SIDEWALK CONSTRUCTION DETAIL

NOT TO SCALE



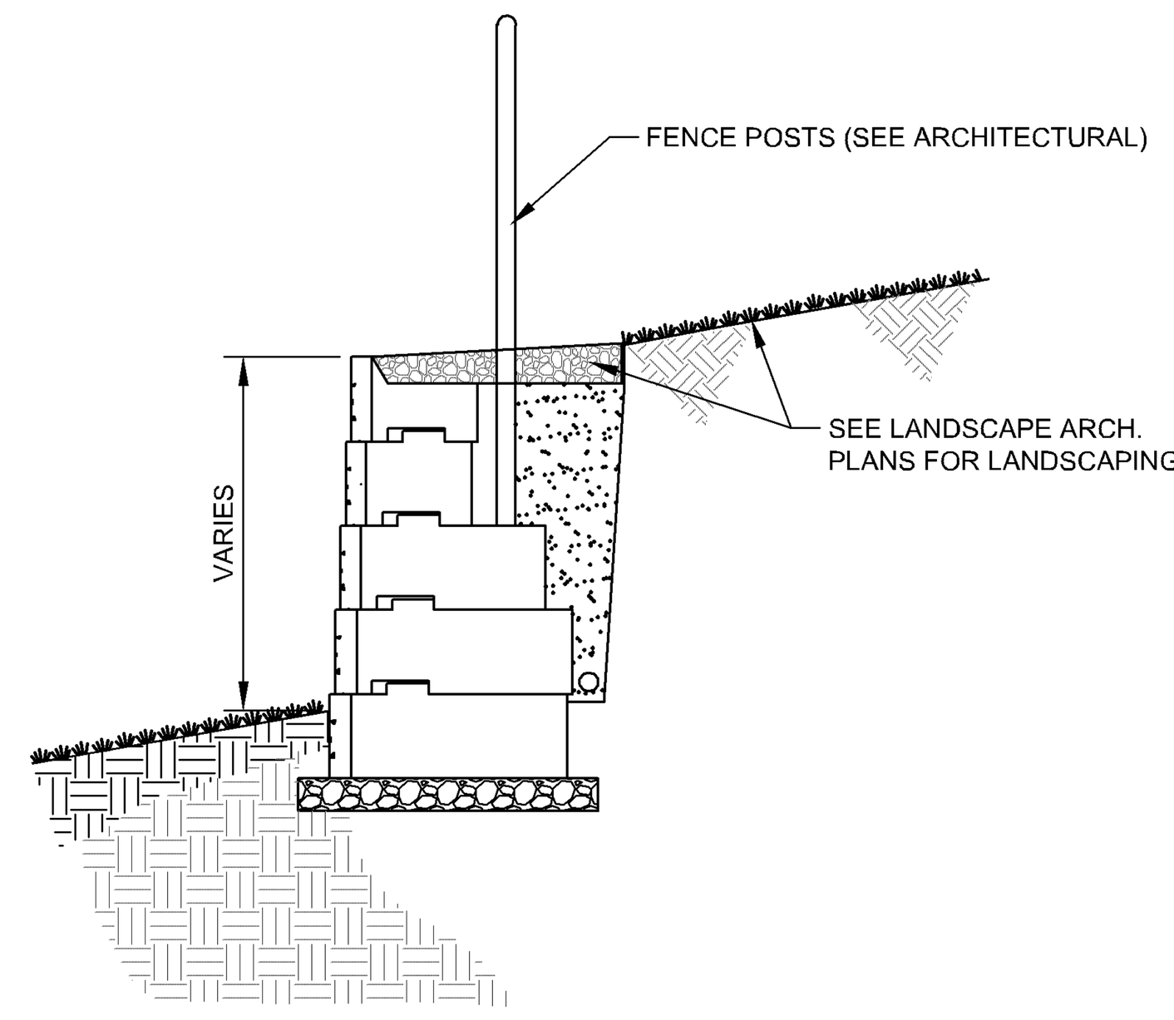
3 C500 HEAVY-DUTY CONCRETE PAVEMENT SECTION

NOT TO SCALE



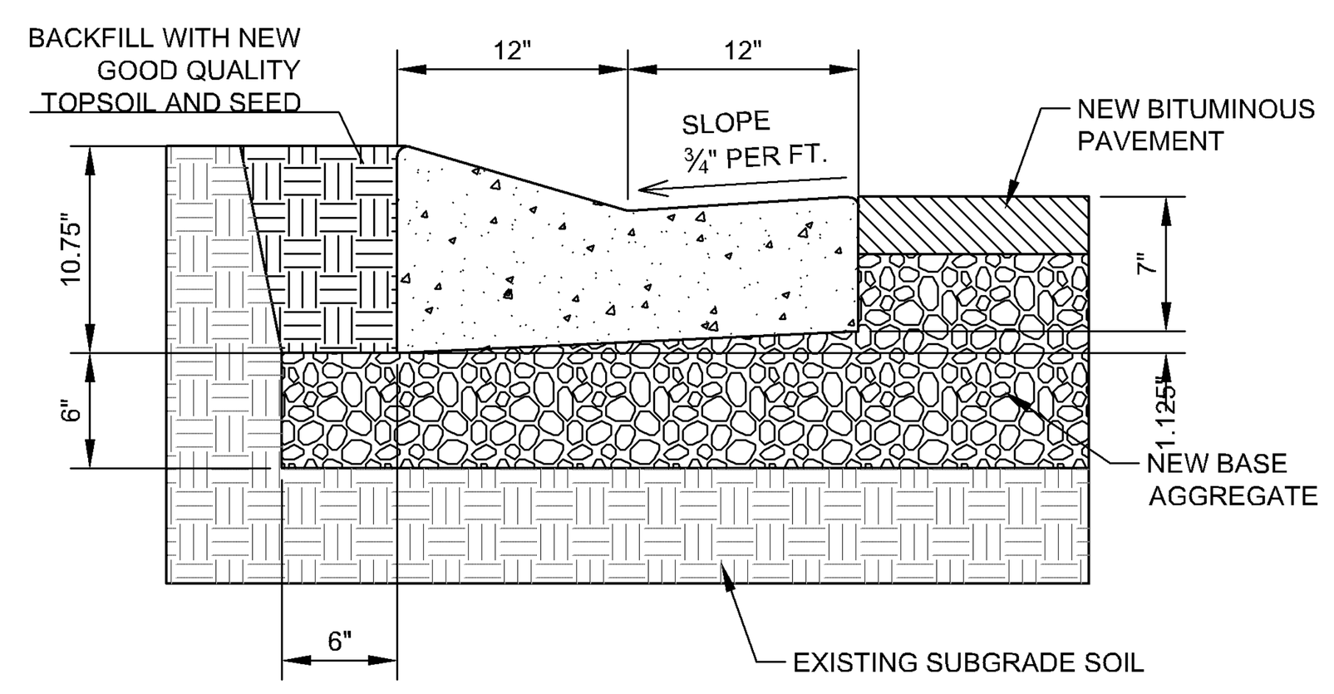
4 C500 ACCESSIBLE RAMP DETAIL

NOT TO SCALE



5 C500 RETAINING WALL DETAIL

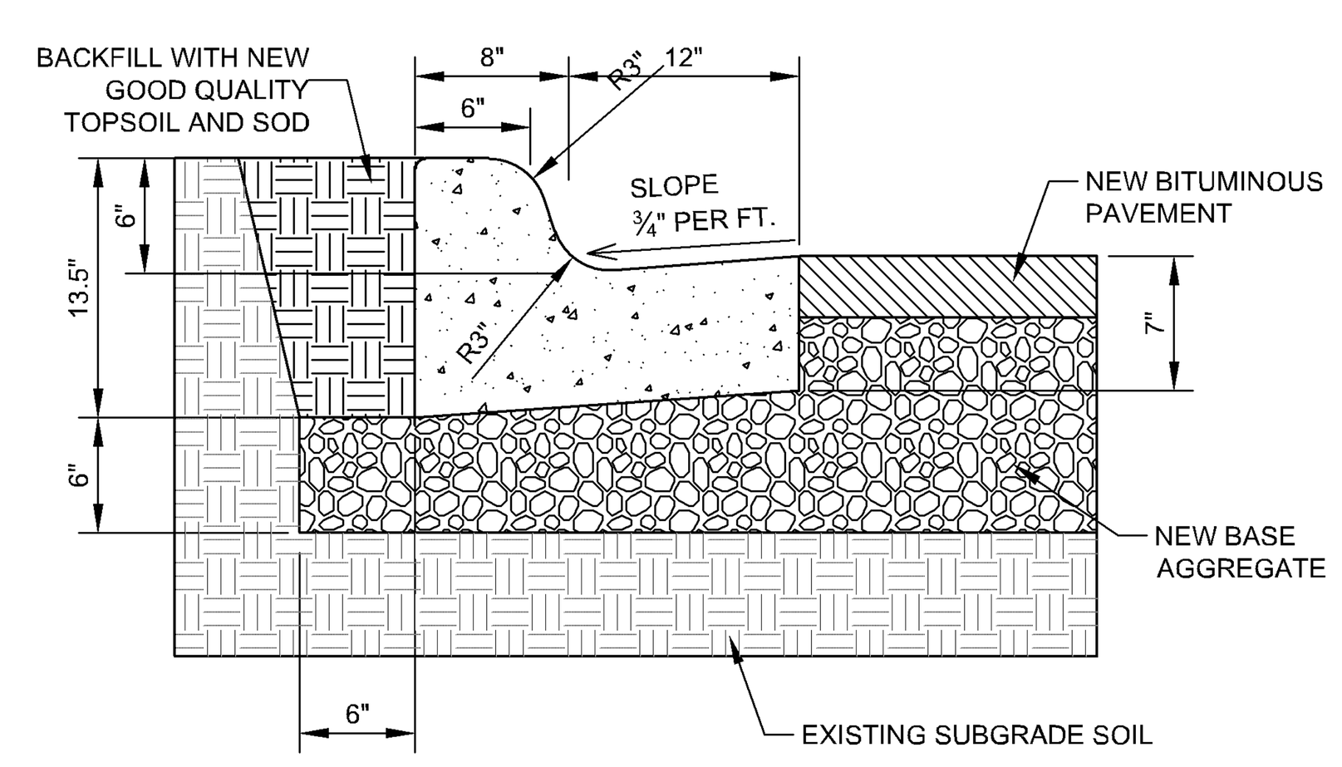
NOT TO SCALE



NOTE: TIP CURB OUT WHERE REQUIRED FOR PROPER DRAINAGE.

6 C500 SURMOUNTABLE CURB & GUTTER DETAIL

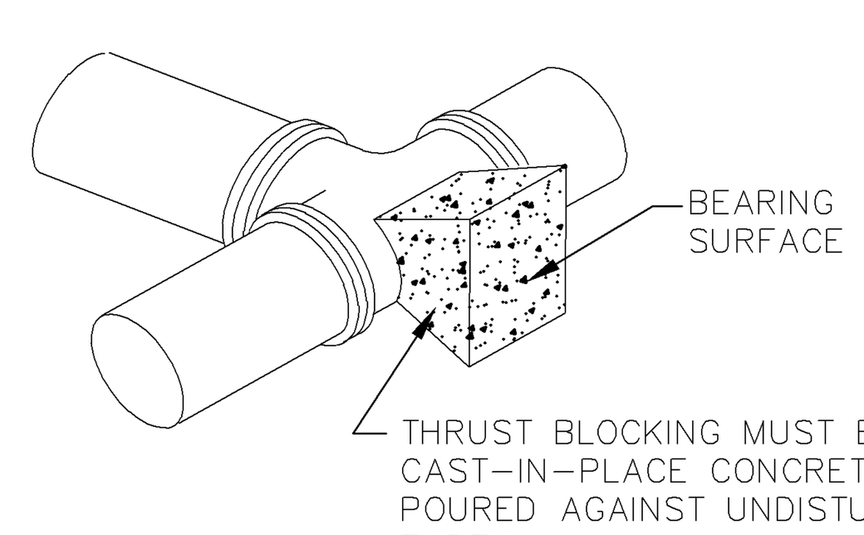
NOT TO SCALE



NOTE: TIP CURB OUT WHERE REQUIRED FOR PROPER DRAINAGE.

7 C500 B612 CONCRETE CURB & GUTTER DETAIL

NOT TO SCALE



PIPE SIZE	BEARING AREA
6"	2.25 SF
8"	4 SF

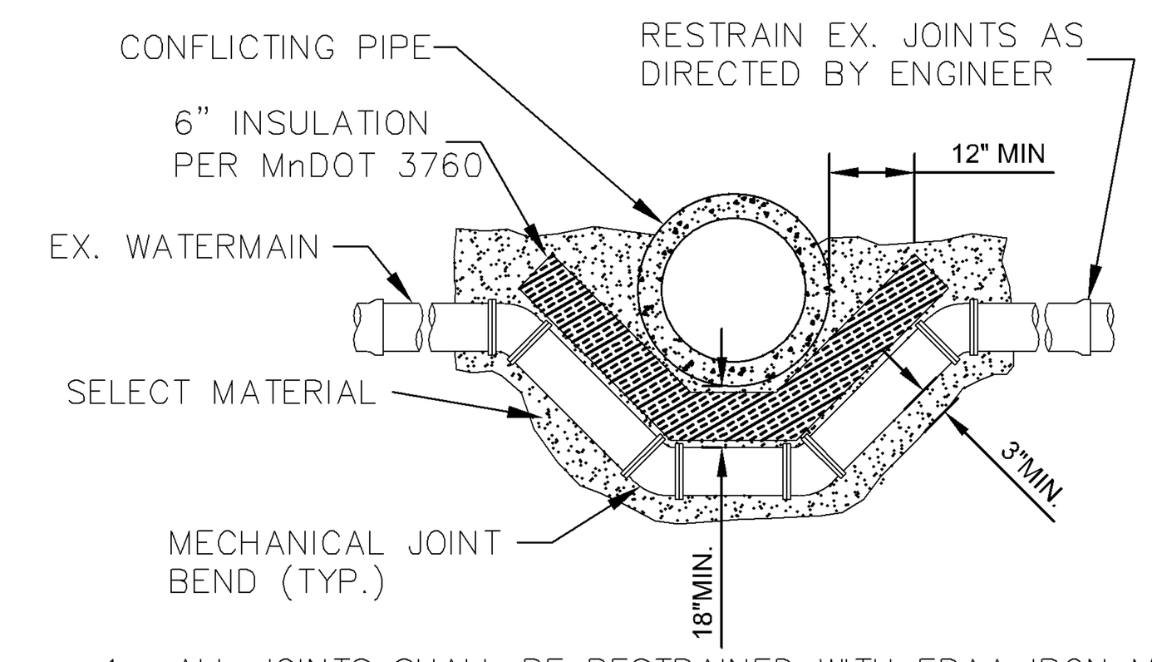
NOTES:

1. THRUST BLOCKS TO BE USED FOR BENDS 22 1/2° AND OVER, INCLUDING HYDRANTS AND HYDRANT TEES.
2. THRUST BLOCKS ARE REQUIRED REGARDLESS OF ANY OTHER RESTRAINT METHODS USED ON WATERMAIN LESS THAN 12" IN DIA.
3. RESTRAINT METHODS ON WATERMAIN LARGER THAN 12" SHALL BE MEGALUGS, LOCKING GASKETS OR OTHER APPROVED EQUAL. THE LENGTH OF RESTRAINT SHALL BE AS COMPUTED BY DIPRA.

310 – STANDARD THRUST BLOCK
310 – Thrust Blk (Std).dwg 6/2015

10 C500 THRUST BLOCK DETAIL

NOT TO SCALE

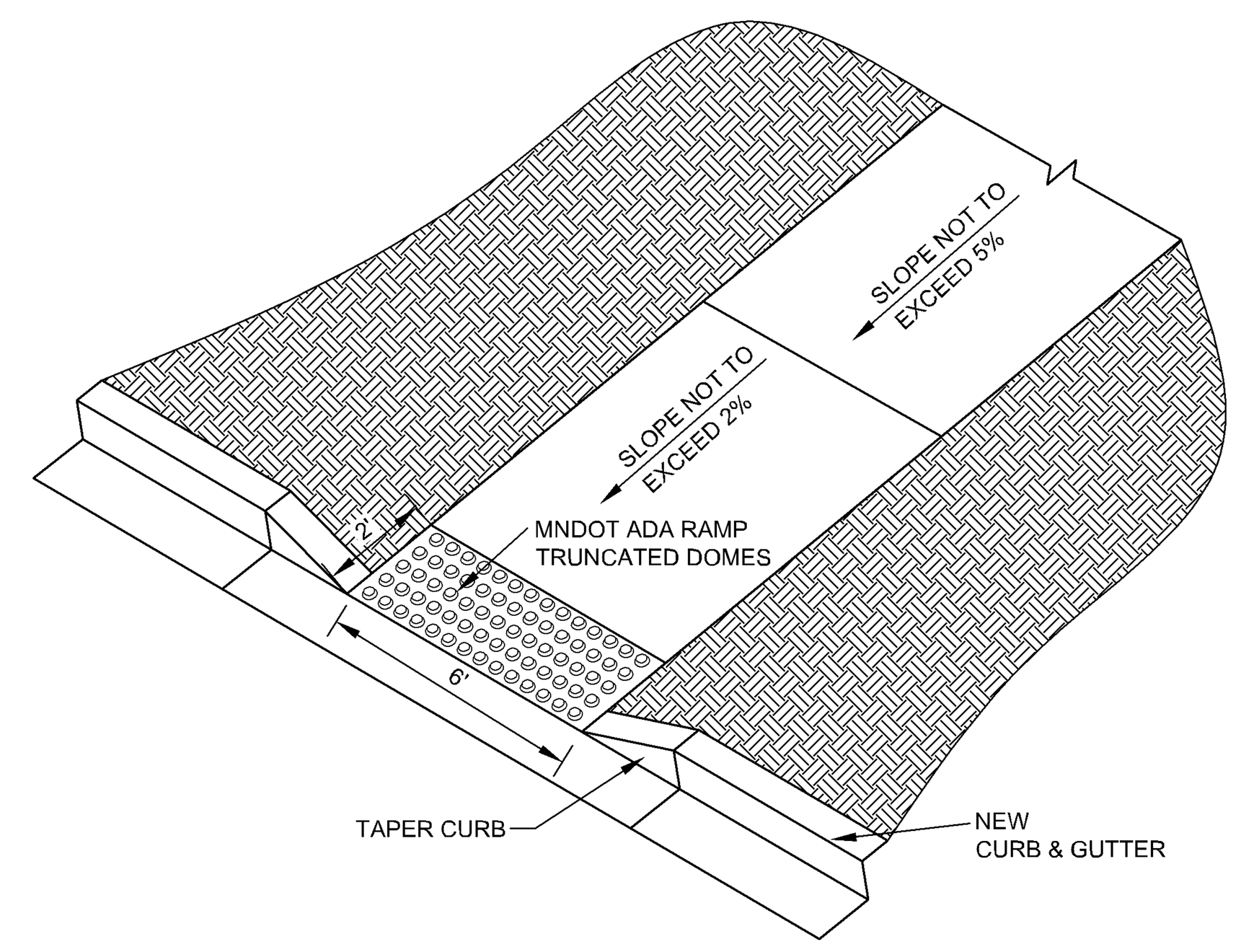


1. ALL JOINTS SHALL BE RESTRAINED WITH EBAA IRON MEGALUG, STAR D-SLDE, SIGMA ONE-LOK SLDE OR APPROVED EQUAL.
2. NO WATERMAIN SHALL BE RODDED UNDER ANY CIRCUMSTANCE.
3. ALL EXPOSED WATERMAIN SHALL BE WRAPPED WITH POLYETHYLENE IN ACCORDANCE WITH AWWA C-105.
4. INSULATION AND FOUNDATION MATERIAL SHALL EXTEND IN BOTH DIRECTIONS A MIN. OF 3' BEYOND THE STORM SEWER & WATERMAIN.
5. MECHANICAL JOINT OFFSET MAY BE USED IF AMOUNT OF OFFSET IS 18" OR LESS.
6. CONDUCTIVITY ACROSS JOINTS IS REQUIRED.
7. INSTALL INSULATION WITH OVERLAPPING JOINTS.
8. LENGTH OF JOINT RESTRAINT TO CONFORM TO DIPRA REQUIREMENTS CONCRETE ANCHOR BLOCKS MAY BE REQUIRED AT VERTICAL BENDS.

316 – WM ALTERATION 1
316 – WM ALTERATION 1.DWG 5/2017

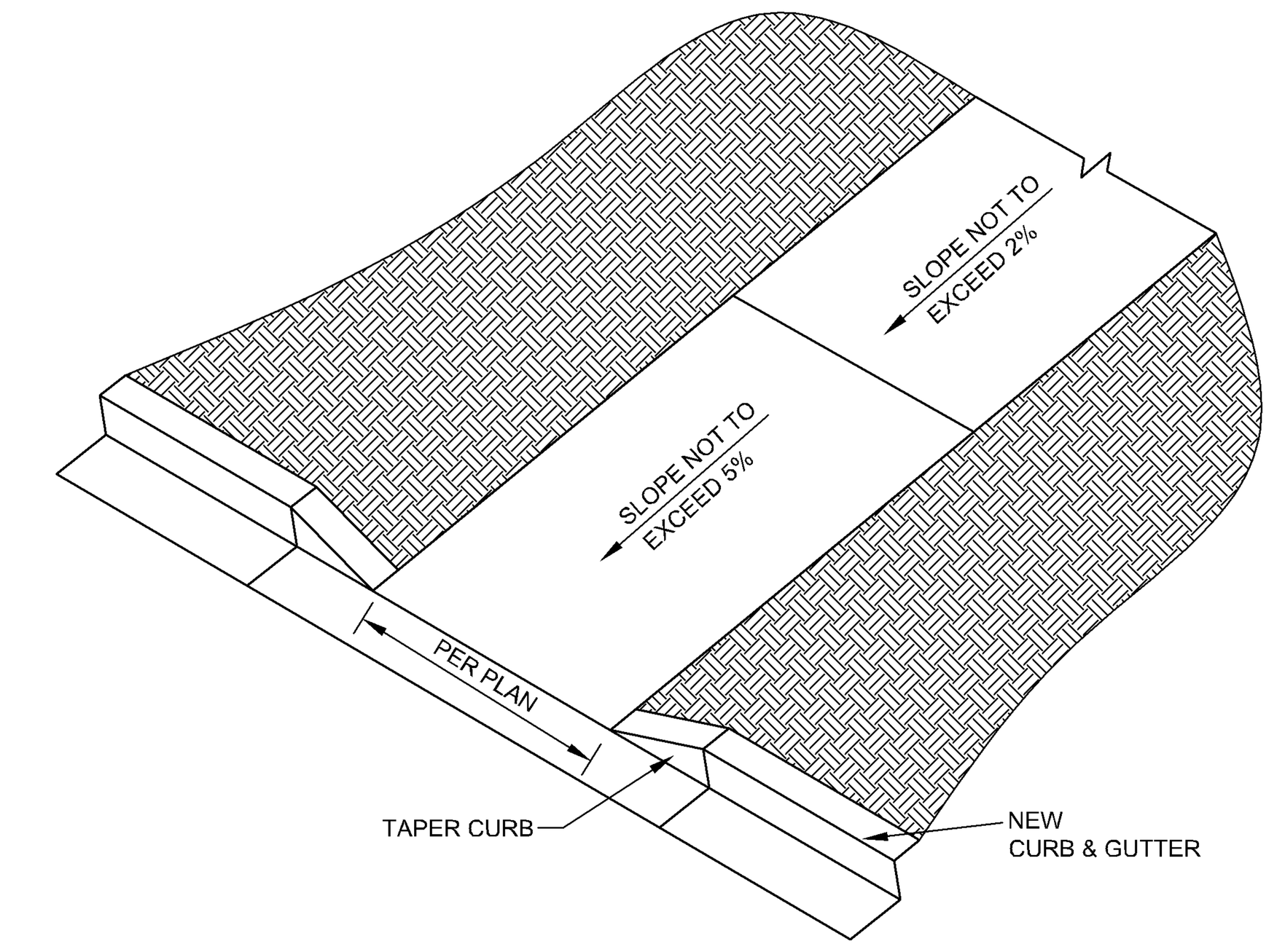
9 C500 WATERMAIN/SEWER CROSSING DETAIL

NOT TO SCALE



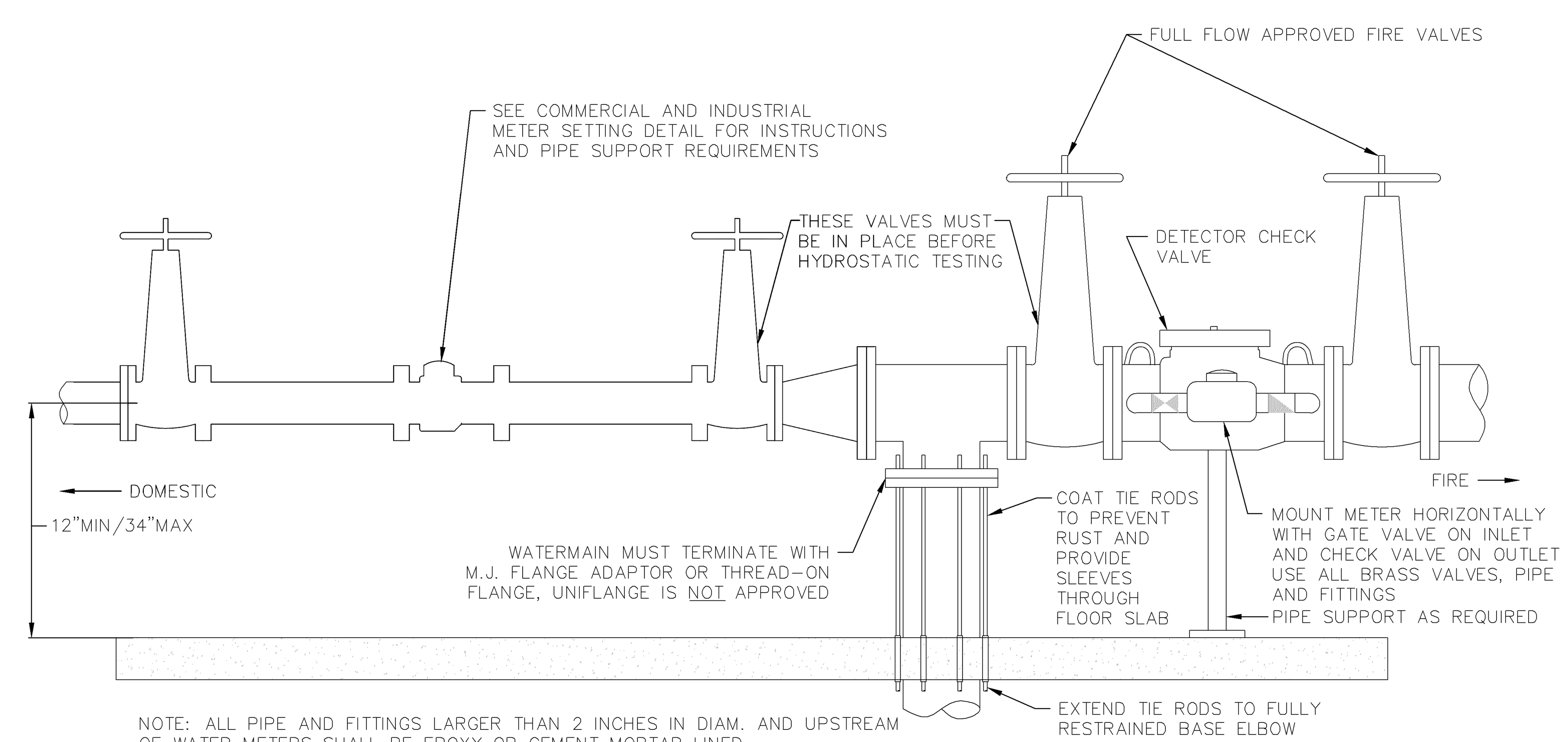
9 C500 ACCESSIBLE RAMP DETAIL WITH TRUNCATED DOMES

NOT TO SCALE



12 C500 ACCESSIBLE RAMP DETAIL

NOT TO SCALE



NOTE: ALL PIPE AND FITTINGS LARGER THAN 2 INCHES IN DIAM. AND UPSTREAM OF WATER METERS SHALL BE EPOXY OR CEMENT MORTAR LINED IN ACCORDANCE WITH AWWA C104 OR AWWA C116

318 – FIRE-DOMESTIC SERV
318 – FIRE-DOMESTIC SERV.DWG 9/2016

11 C500 FIRE DOMESTIC SERVICE DETAIL

NOT TO SCALE

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REVISIONS:
1 1/4/2022: Addendum #2

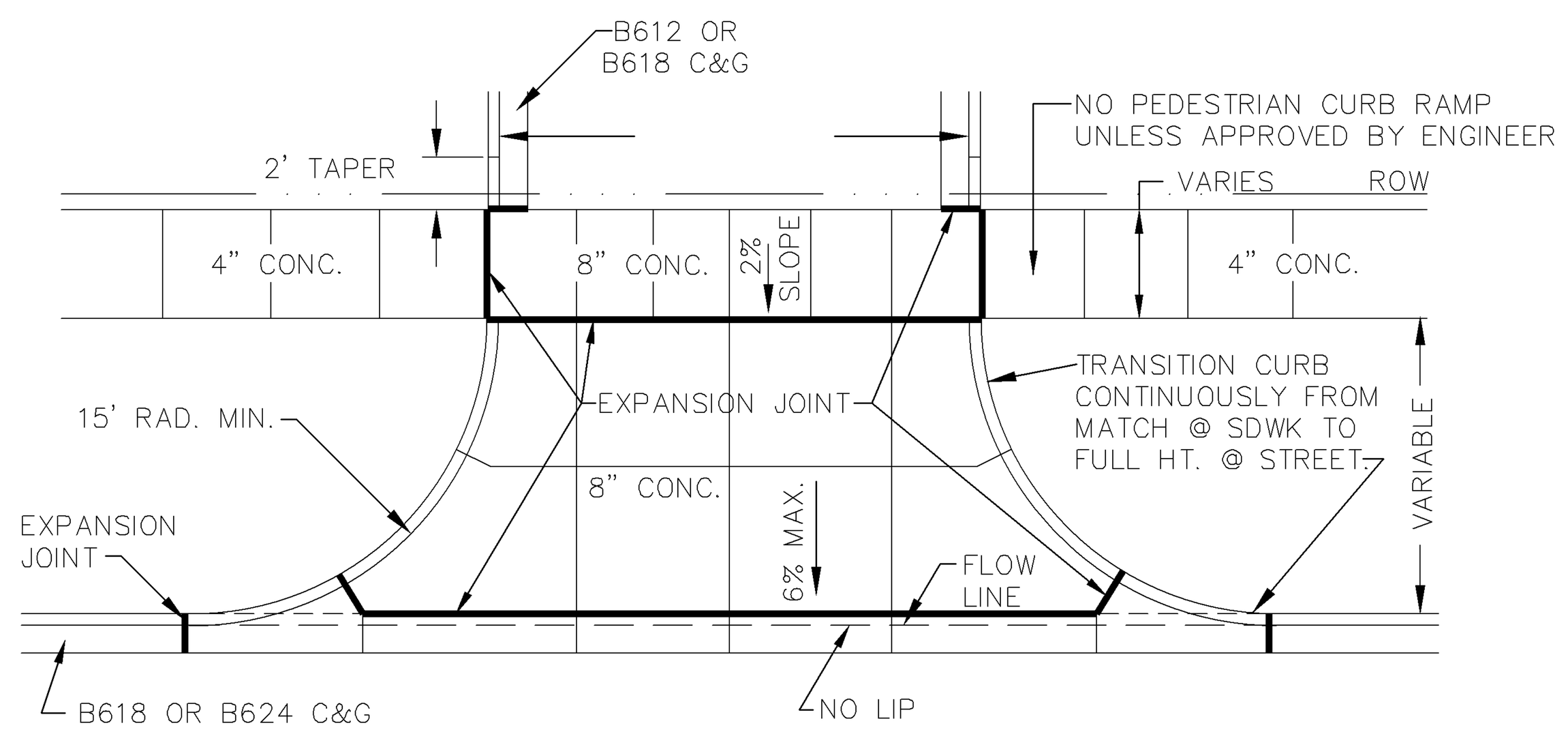
CNH NO.: 19116
DATE: 11/22/21
DETAILS

C500

CONFORMED SET 01/28/22

CASE #PL2021-186

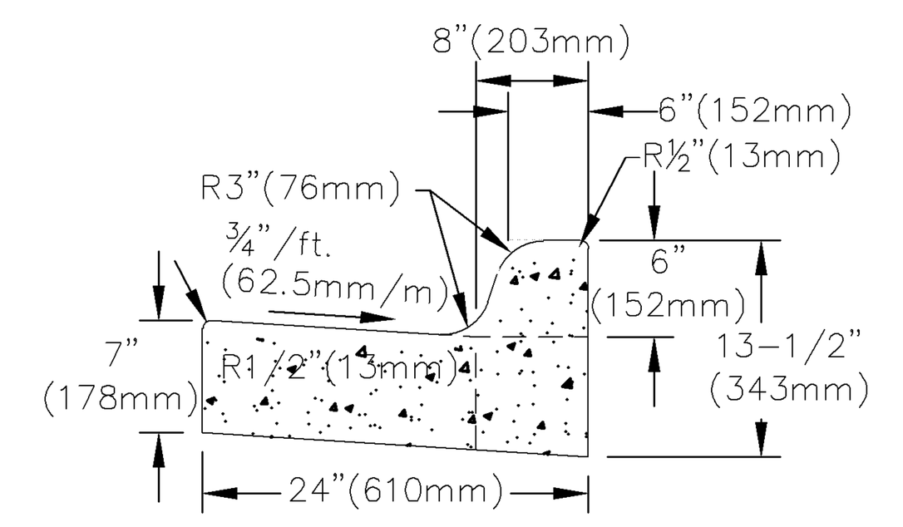
NOTE:
- EACH DRIVEWAY PANEL NOT TO EXCEED 100 SF.
- REINFORCEMENT BARS OR WELDED WIRE FABRIC (STEEL MESH) ARE NOT ALLOWED IN THE RIGHT-OF-WAY
- CLASS 5 AGGREGATE BASE REQUIRED UNDER CURB AND GUTTER.
- IF PRESENT, STREET LIGHT, SIGNAL AND INTERCONNECT CONDUIT OR DIRECT BURIED STREET LIGHT WIRING MUST BE EXPOSED FOR INSPECTION PRIOR TO POUR



100 – NONRESIDENTIAL DRIVEWAY APPROACH WITH BOULEVARD SIDEWALK

100 – Drwy (Commercial).dwg 5/2015

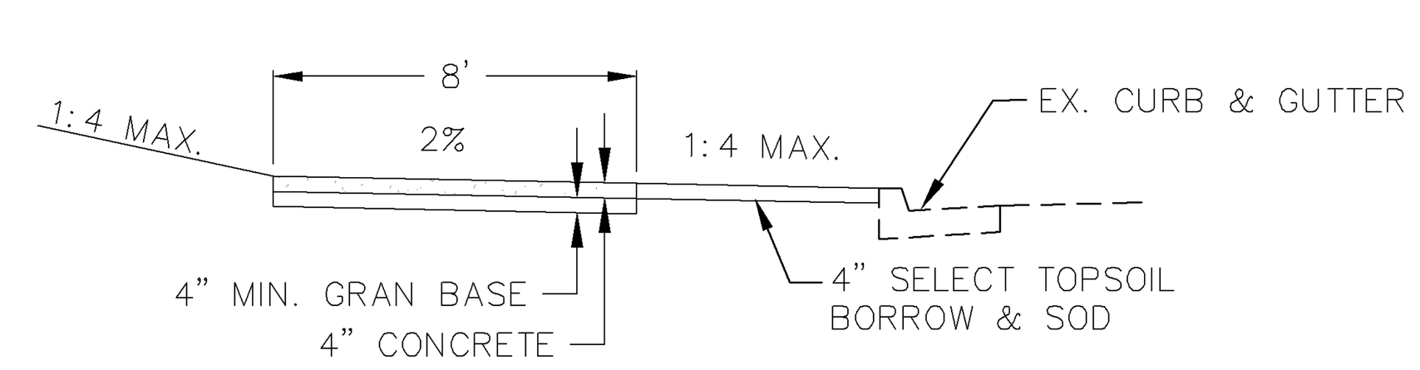
1 C501 NOT TO SCALE



105 – B618 STANDARD CURB & GUTTER

105 – C&G (Bloom Std).dwg 5/2015

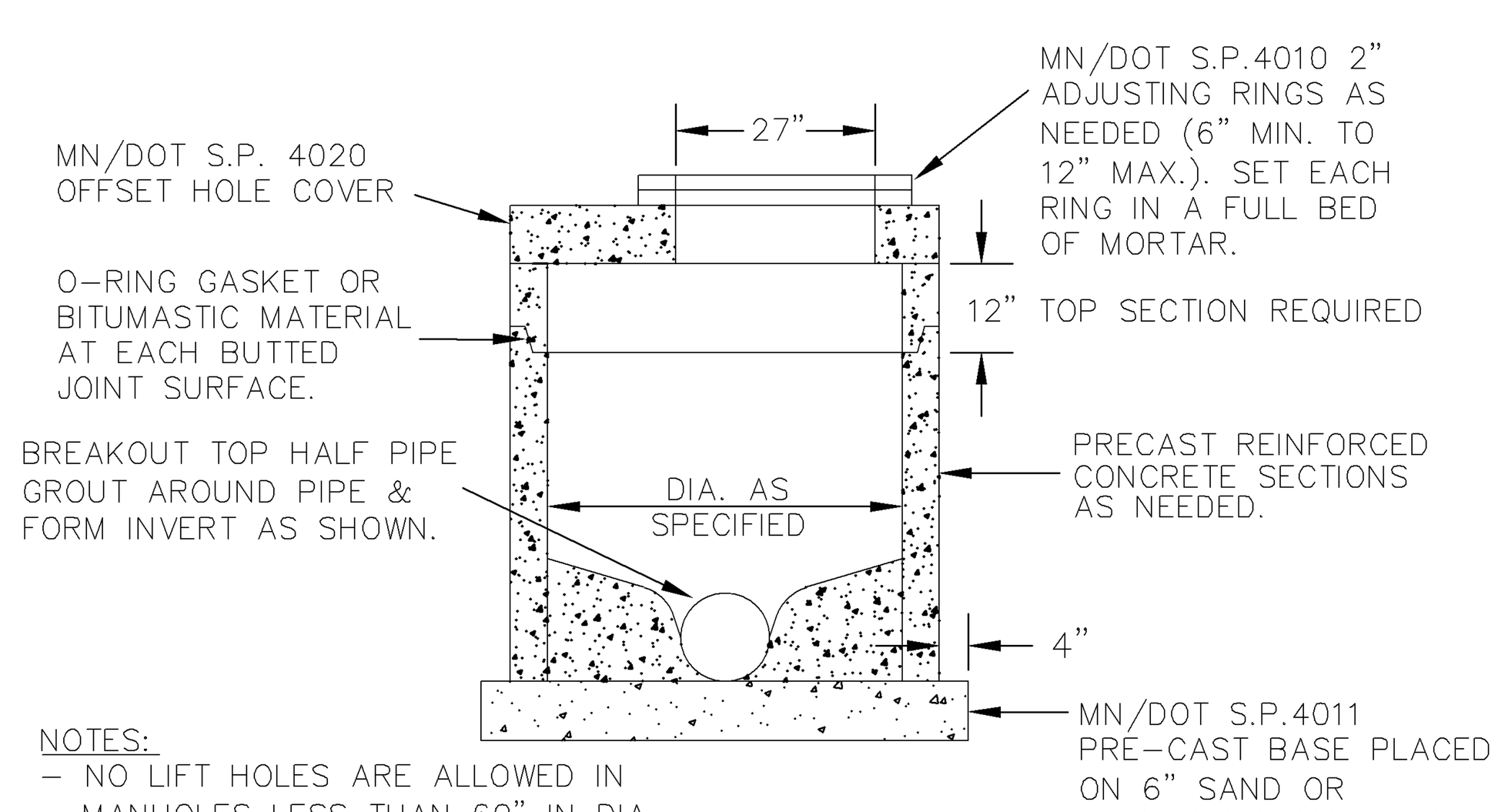
2 C501 NOT TO SCALE



120 – TYPICAL SIDEWALK INSTALLATION

120 – Typ Conc. Walk.dwg 9/2016

3 C501 NOT TO SCALE



NOTES:
- NO LIFT HOLES ARE ALLOWED IN MANHOLES LESS THAN 60" IN DIA.
- FOR MH'S IN DRIVE LANES, ROTATE COVER SO THAT CASTING IS OUT OF WHEEL PATH, AS APPROVED.

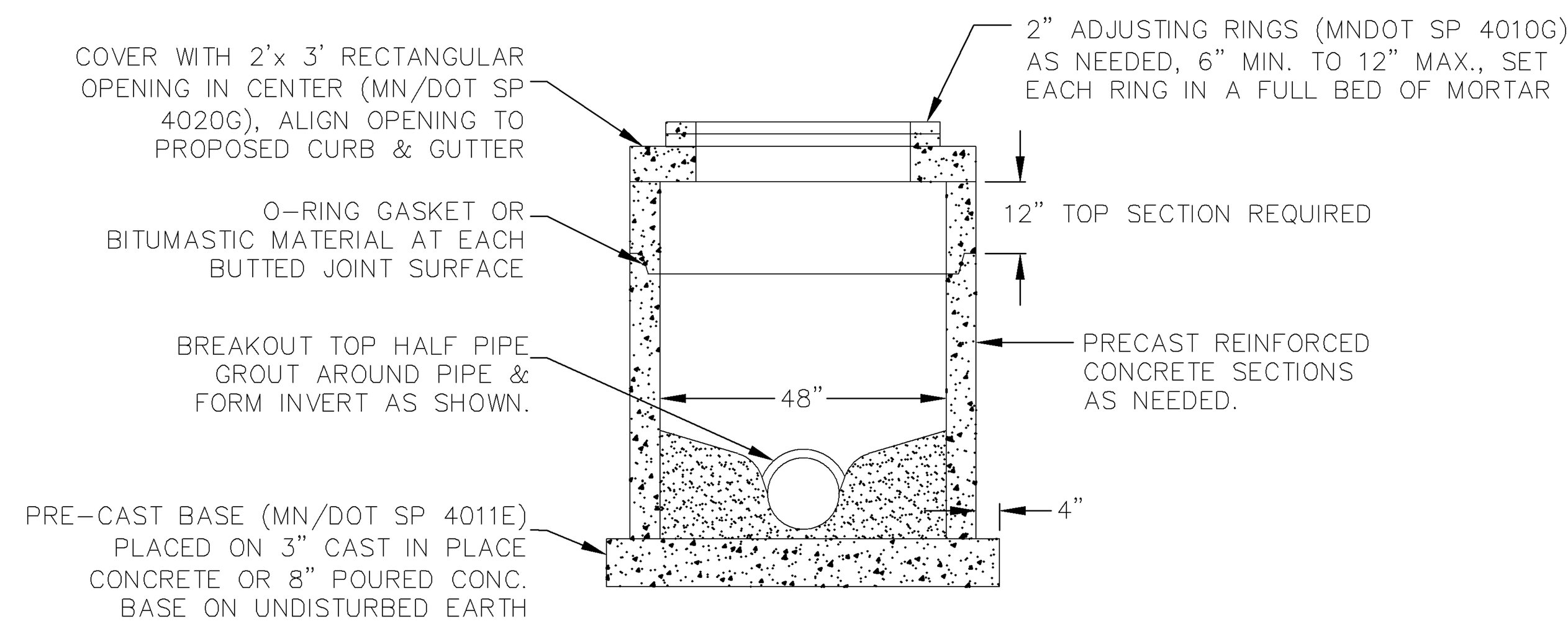
ALL PIPE CONNECTIONS TO BE MADE WITH WATERTIGHT MATERIALS (BOOT, OR EQUIVALENT)

200 – STANDARD MANHOLE

DESIGN SPEC X, X & X

200 – STD_MH.DWG 9/2013

4 C501 NOT TO SCALE



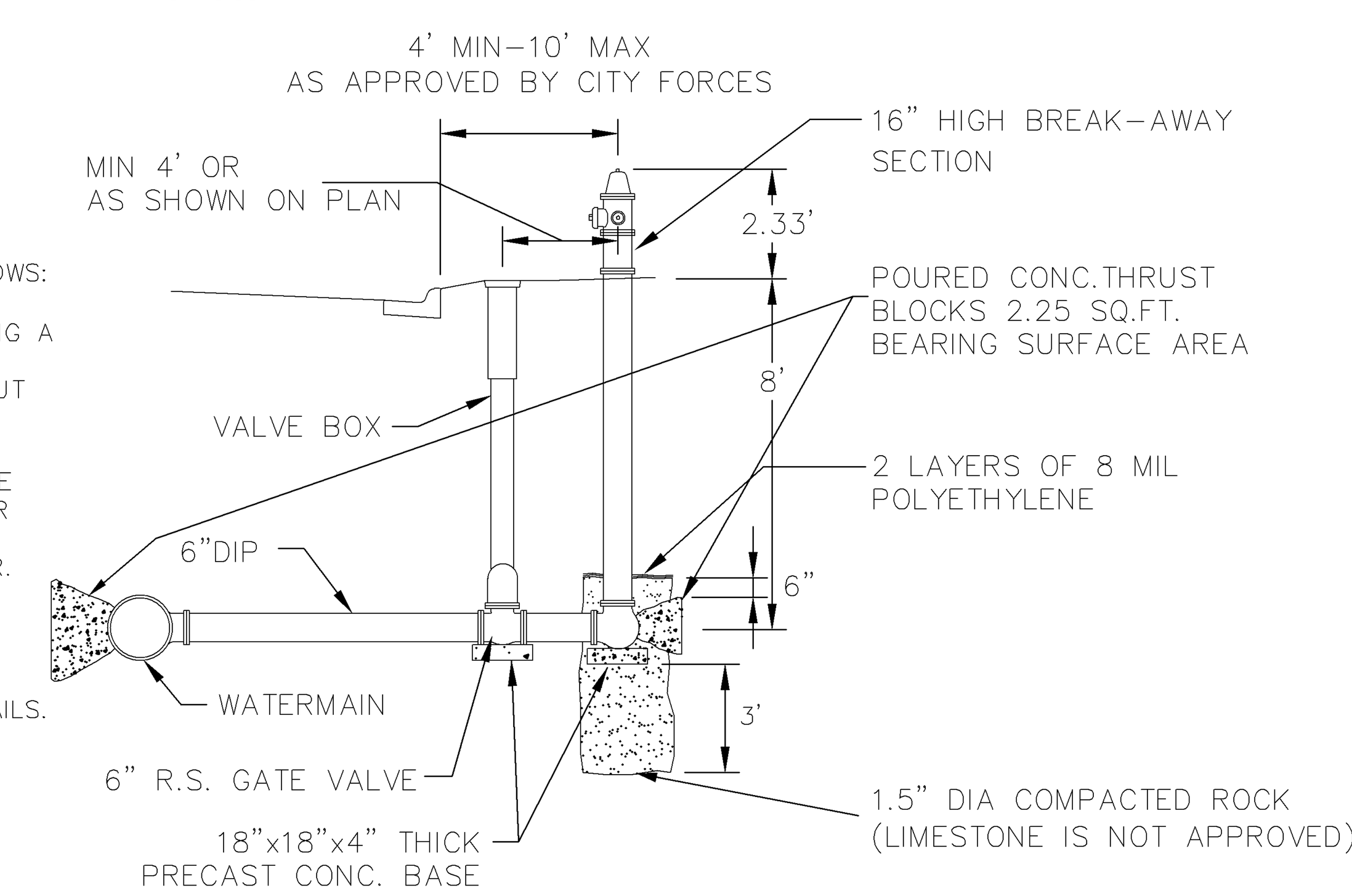
ALL PIPE CONNECTIONS TO BE MADE WITH WATERTIGHT MATERIALS (BOOT, OR EQUIVALENT)

203 – STD MH (CB-MH)

203 – STD MH (CB-MH).DWG 9/2016

5 C501 NOT TO SCALE

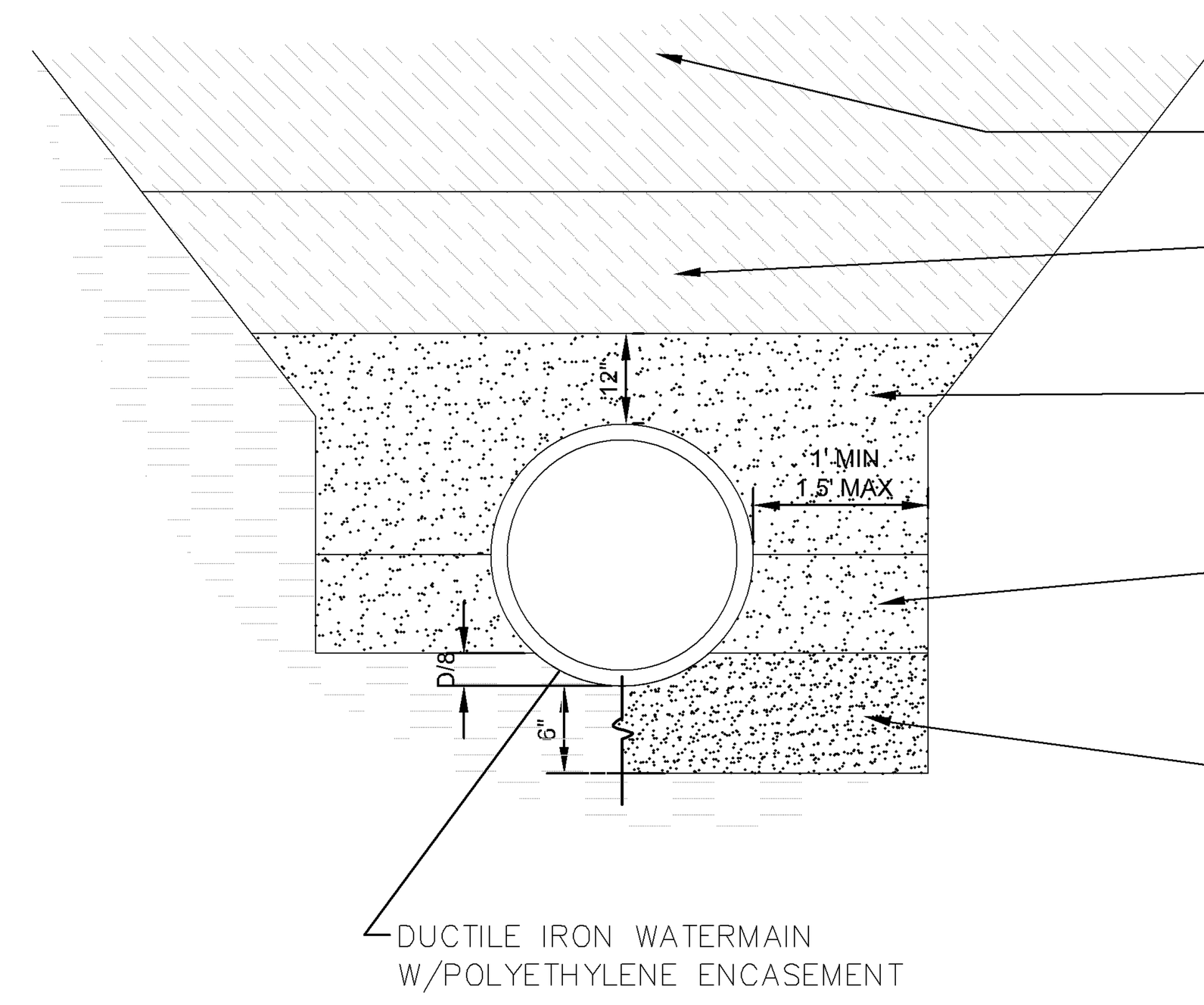
- HYDRANT TO BE:
  - o WATEROUS PACER CLASSIC.
  - o MUELLER SUPERCENTURION 250 MODEL A-423.
  - o OR APPROVED EQUAL.
- EQUIP WITH THREE HOSE NOZZLES/CONNECTIONS AS FOLLOWS:
  - o ONE – FACTORY INSTALLED 5 INCH STORZ-TYPE, QUARTER TURN PUMPER NOZZLE/CONNECTOR, INCLUDING A MANUFACTURER SUPPLIED AND INSTALLED ANODIZED ALUMINUM NOZZLE CAP WITH A 1.5 INCH PENTAGON NUT AND NO ROCKER LUG.
  - o TWO – 2.5 INCH HOSE NOZZLES/CONNECTIONS (WITH NATIONAL STANDARD THREADS) AND STANDARD NOZZLE CAPS WITH 1.5 INCH PENTAGON NUTS, AND NO ROCKER LUGS.
- USE SS NUTS AND BOLTS AS APPROVED BY THE ENGINEER.
- ALL EXPOSED WATERMAIN SHALL BE WRAPPED WITH POLYETHYLENE IN ACCORDANCE WITH AWWA C-105.
- BARREL TO BE BRIGHT RED.
- ALL VALVES TO OPEN COUNTER-CLOCKWISE.
- SEE TYPICAL VALVE INSTALLATION DETAIL FOR VALVE DETAILS.
- WATEROUS PACER CLASSIC HYDRANTS SHALL INCLUDE INSTALLATION OF THE MANUFACTURERS MOST CURRENT ANTI-CHATTER BRASS UPPER VALVE WASHER.



300 – TYPICAL HYDRANT INSTALLATION

300 – Hyd Install.dwg 6/2015

6 C501 NOT TO SCALE

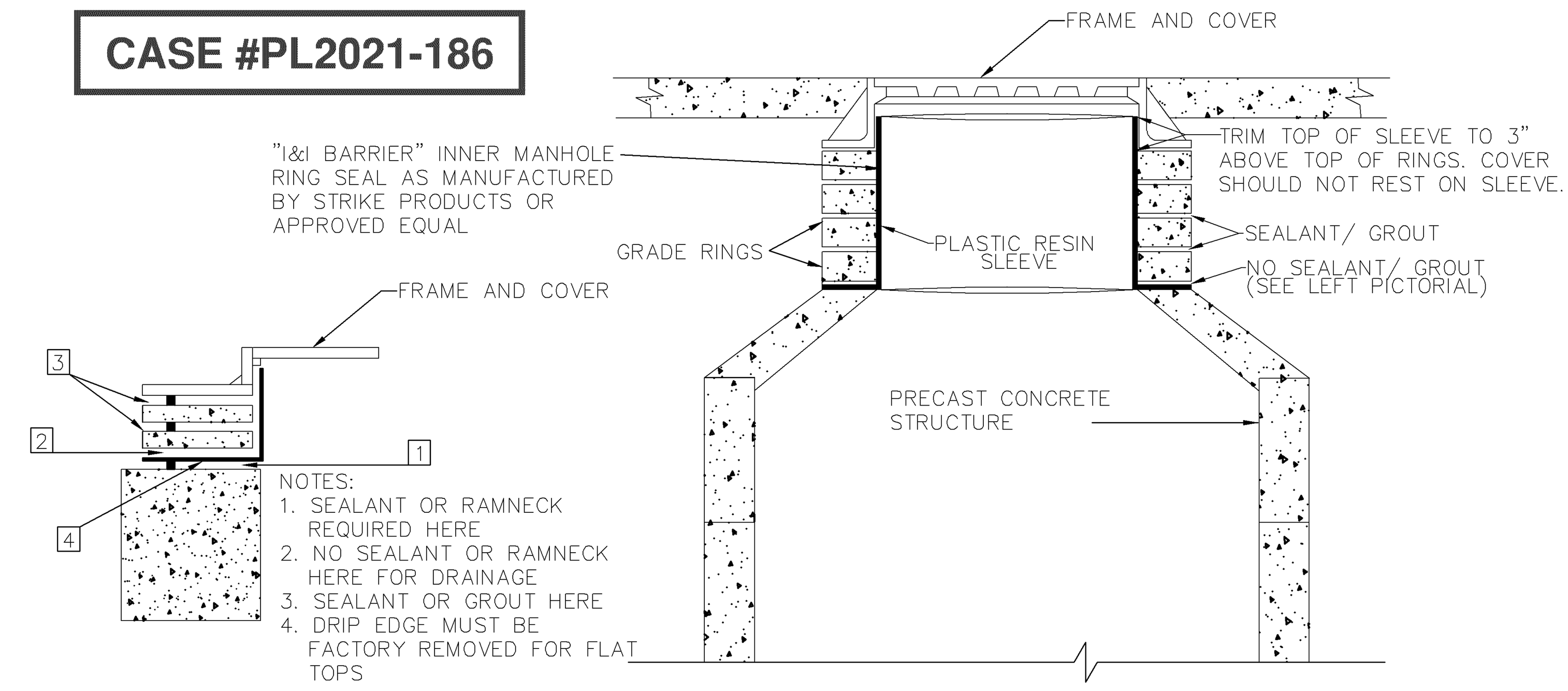


BACKFILL UPPER 3 FEET	SELECT MATERIAL IN 12" LIFTS COMPACTED TO 100% STANDARD PROCTOR DENSITY
BACKFILL	SELECT MATERIAL IN 12" LIFTS COMPACTED TO 95% STANDARD PROCTOR DENSITY
GRANULAR ENCASEMENT	1" MINUS MnDOT GRANULAR BORROW 3149.2B1-COMPACTION BY HAND AND PORTABLE COMPACTION EQUIPMENT
GRANULAR BEDDING	1" MINUS MnDOT GRANULAR BORROW 3149.2B1-COMPACTION BY HAND AND PORTABLE COMPACTION EQUIPMENT
GRANULAR FOUNDATION	COARSE FILTER AGGREGATE MnDOT 3149: 1 1/2" MINUS, <10% PASSING #4 SIEVE (WHERE NECESSARY TO REPLACE UNSUITABLE/UNSTABLE SOILS)

308 – TYPICAL WATER MAIN INSTALLATION DETAIL

308 – Watermain Install.dwg 6/2015

7 C501 NOT TO SCALE



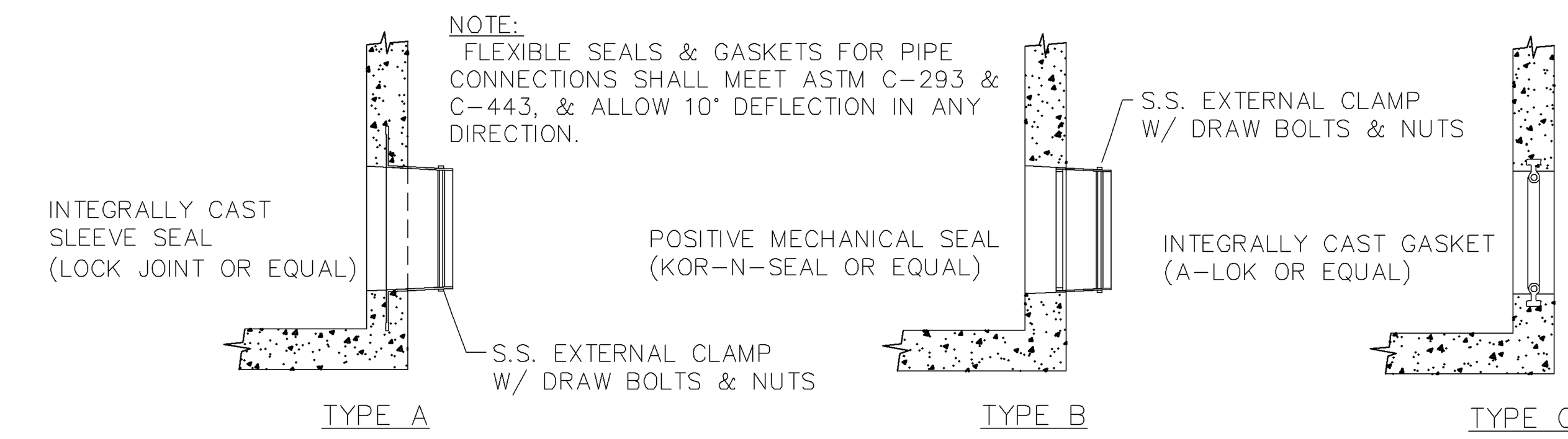
NOTES:
1. SEALANT OR RAMNECK REQUIRED HERE
2. NO SEALANT OR RAMNECK HERE FOR DRAINAGE
3. SEALANT OR GROUT HERE
4. DRIP EDGE MUST BE FACTORY REMOVED FOR FLAT TOPS

404 – INTERNAL CHIMNEY SEAL

404 – Internal Chimney Seal.dwg 6/2015

8 C501 NOT TO SCALE

NOTE:
FLEXIBLE SEALS & GASKETS FOR PIPE CONNECTIONS SHALL MEET ASTM C-293 & C-443, & ALLOW 10' DEFLECTION IN ANY DIRECTION.



409 – WATER TIGHT PIPE CONNECTIONS

409 – MH Pipe Connect.dwg 6/2015

9 C501 NOT TO SCALE

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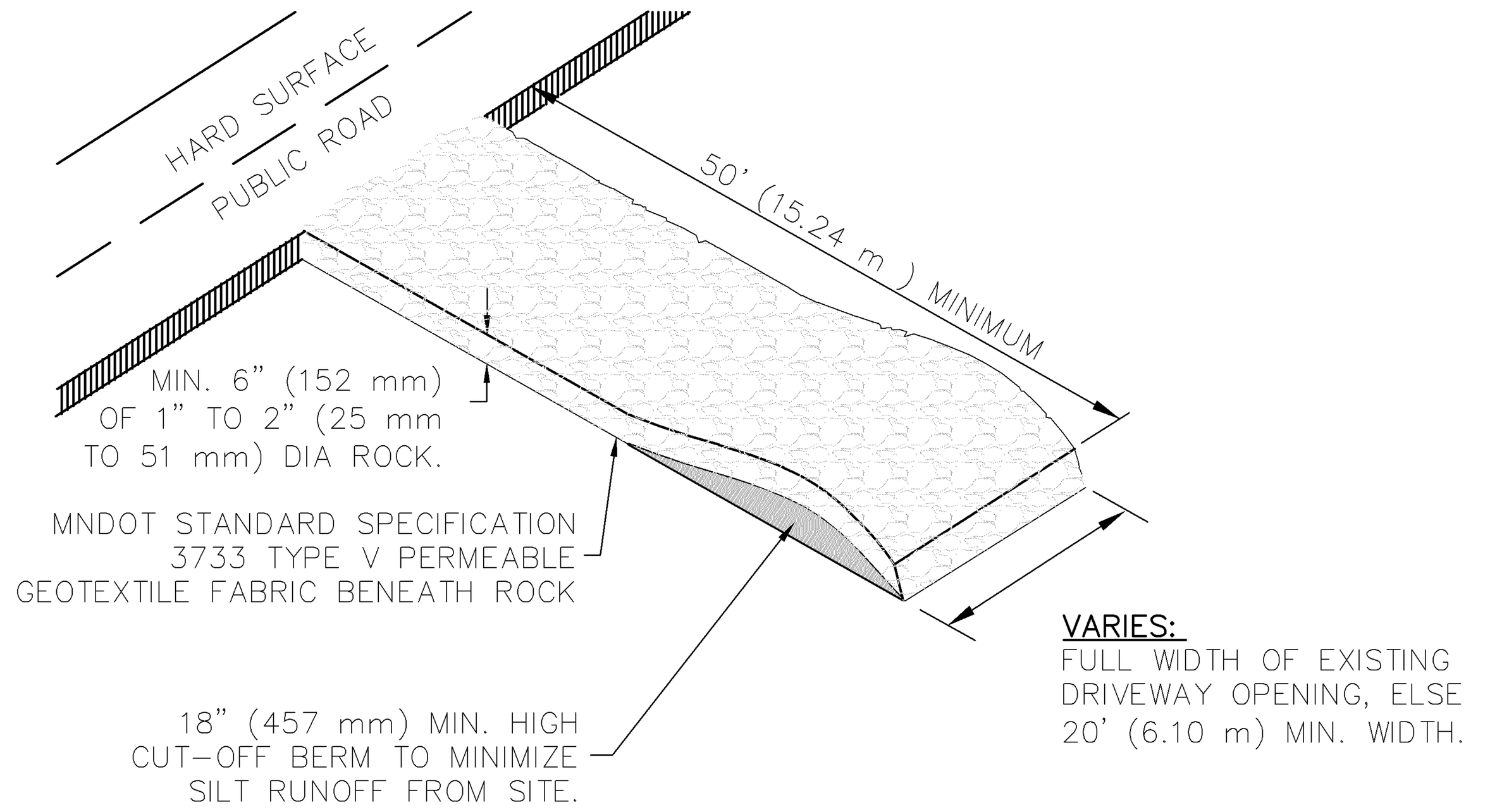
C501

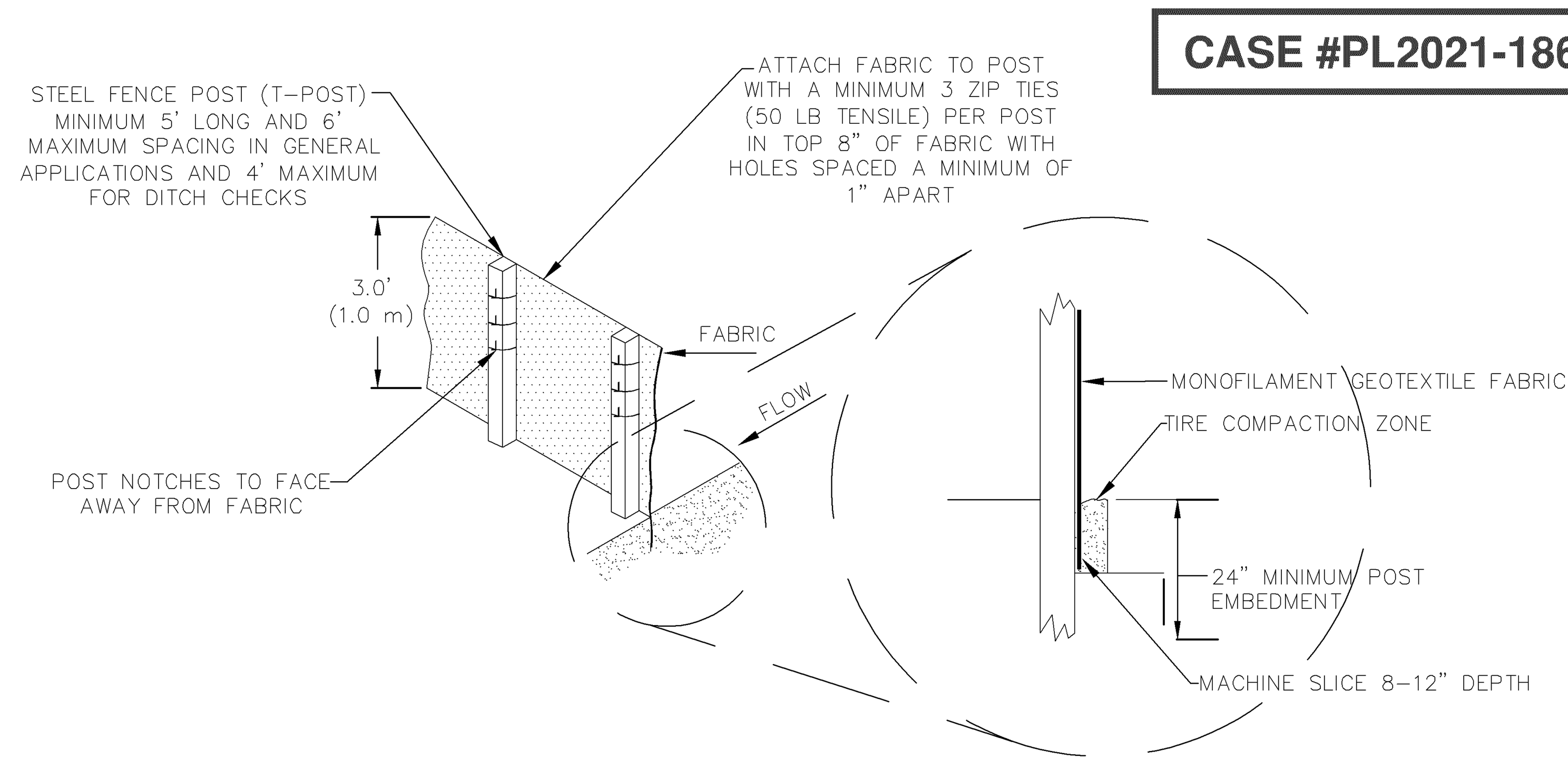
CONFORMED SET 01/28/22

CASE #PL2021-186



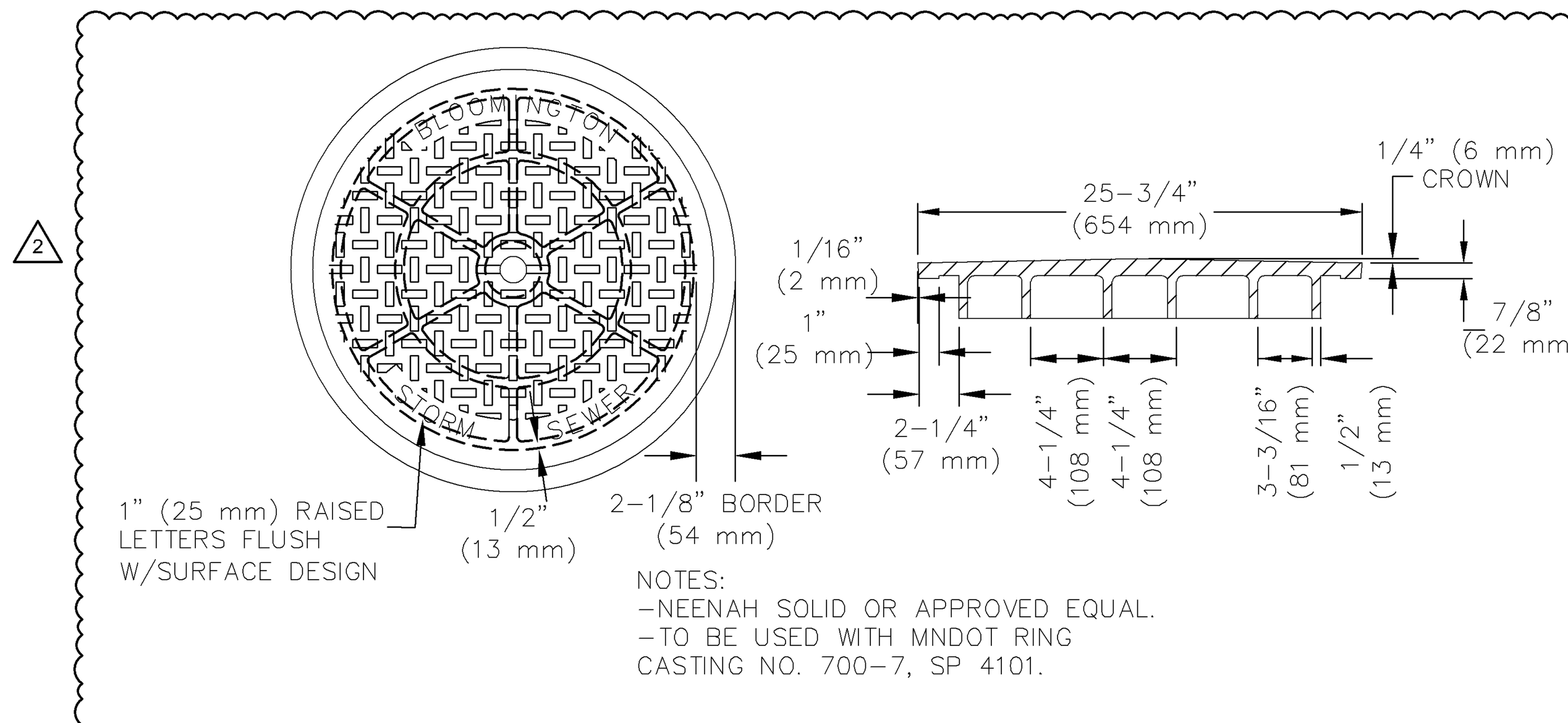
600 – ROCK CONSTRUCTION ENTRANCE AT ACCESS ROADS
600 – Rock Const. Ent.dwg 5/2015

1 C502 NOT TO SCALE



608 – SILT FENCE– MACHINE SLICED
608 – Silt Fen (MACHINE SLICED).dwg 5/2015

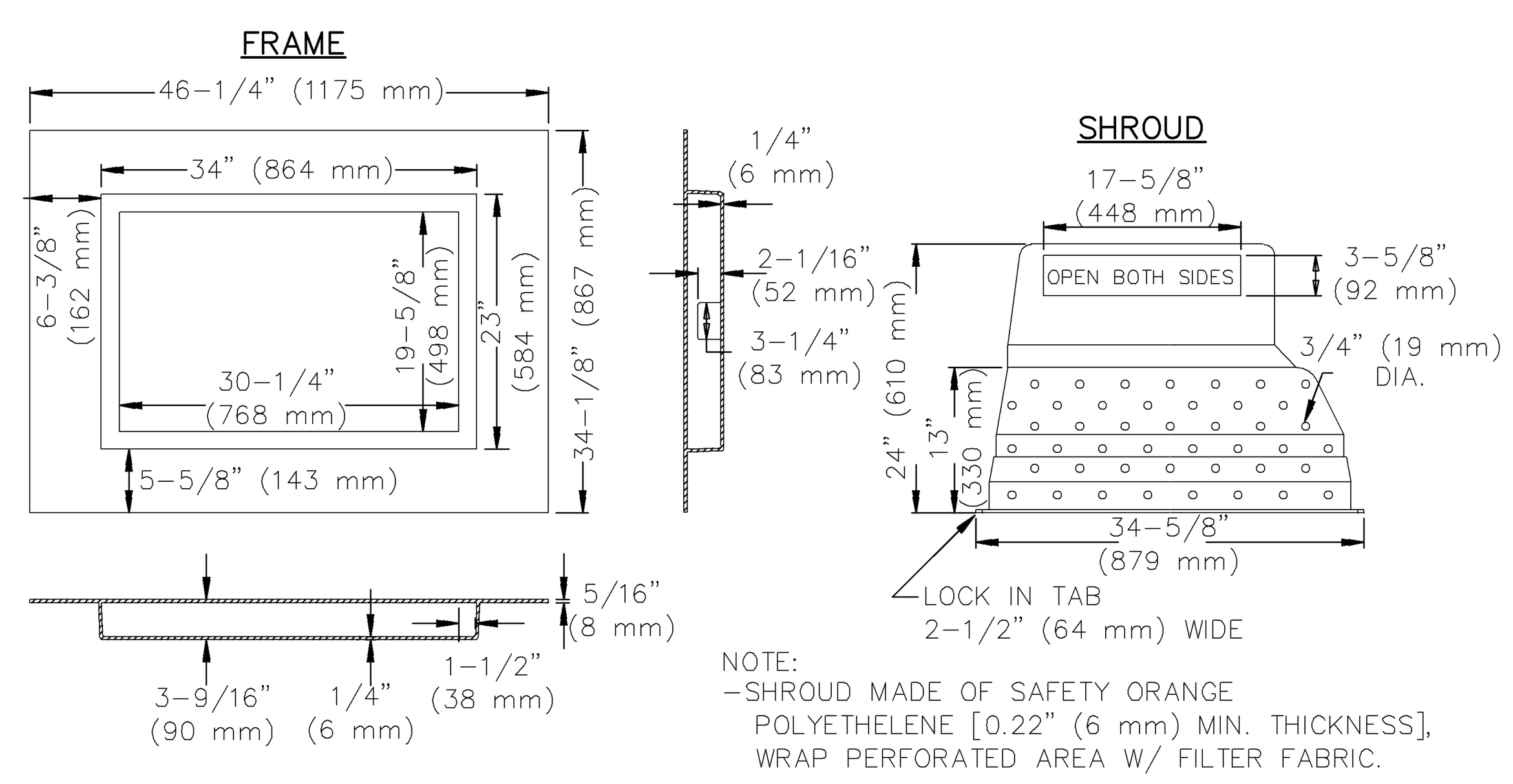
4 C502 NOT TO SCALE



NOTES:
- NEENAH SOLID OR APPROVED EQUAL.
- TO BE USED WITH MNDOT RING CASTING NO. 700-7, SP 4101.

500 – STANDARD STORM SEWER MANHOLE COVER
500 – Storm Cov (Solid).dwg 5/2015

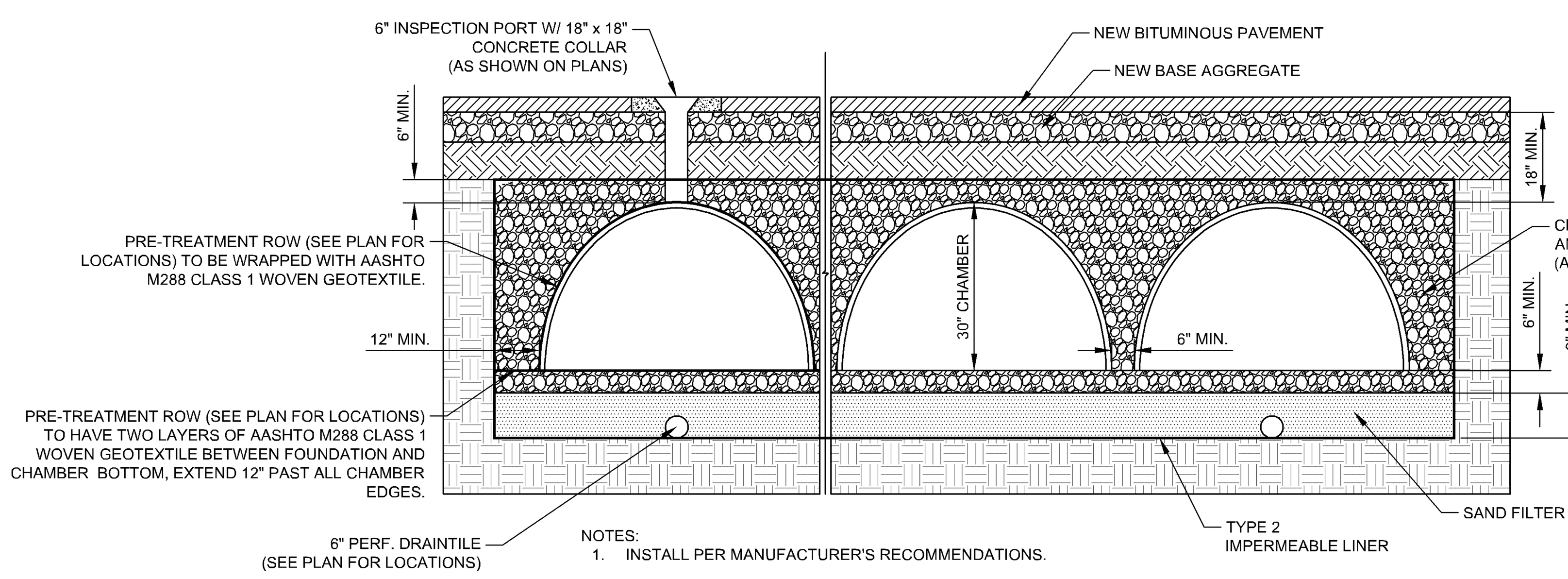
7 C502 NOT TO SCALE



NOTE:
- SHROUD MADE OF SAFETY ORANGE POLYETHELENE [0.22" (6 mm) MIN. THICKNESS], WRAP PERFORATED AREA W/ FILTER FABRIC.

604 – INLET PROTECTION, PERFORATED EROSION BARRIER SHROUD W/ 2'x3' (0.61x0.91m) FRAME
604 – Inlet Shroud (2x3).dwg 4/2015

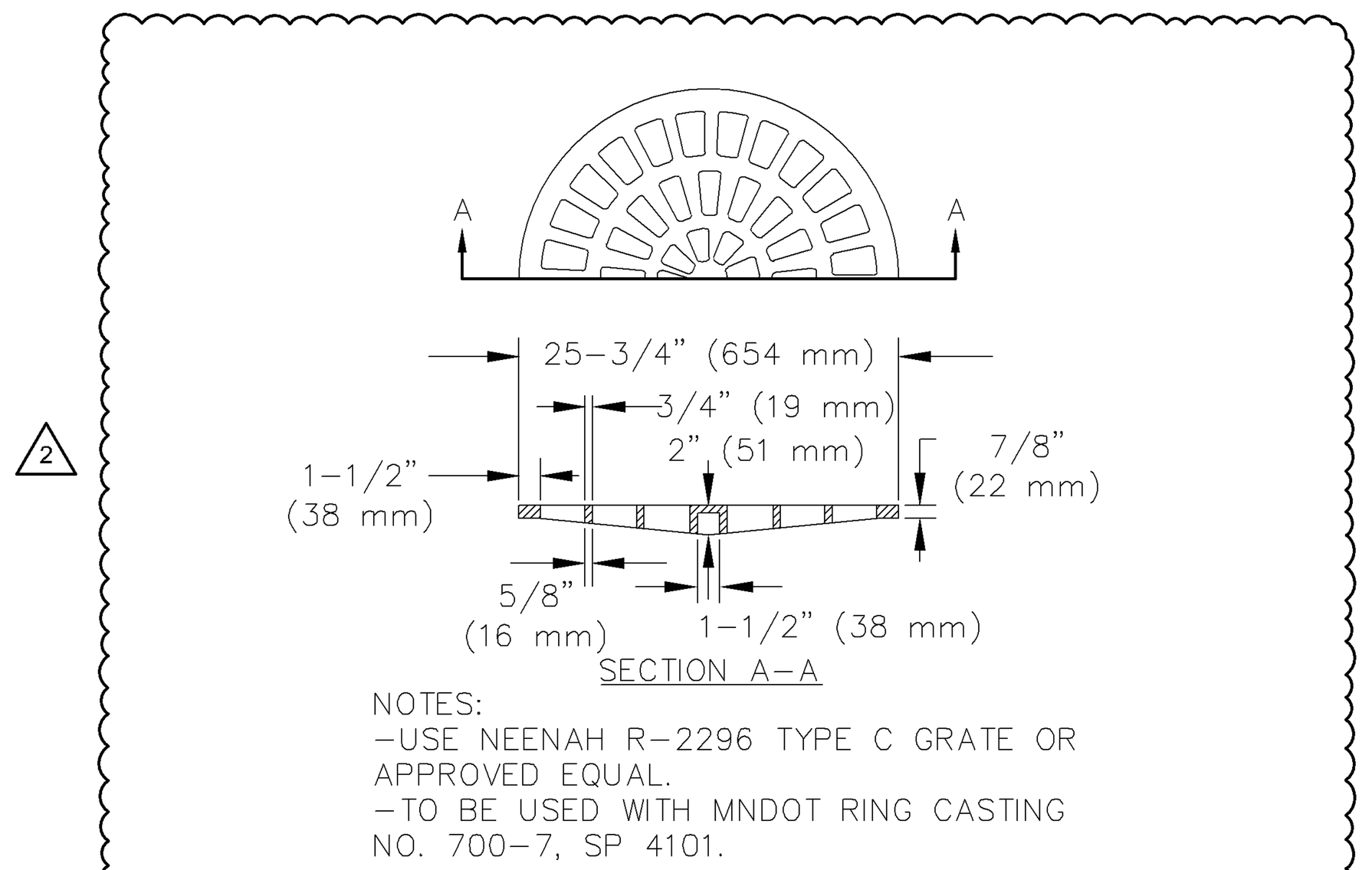
2 C502 NOT TO SCALE



NOTES:
1. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

30" UNDERGROUND CHAMBER CROSS SECTION

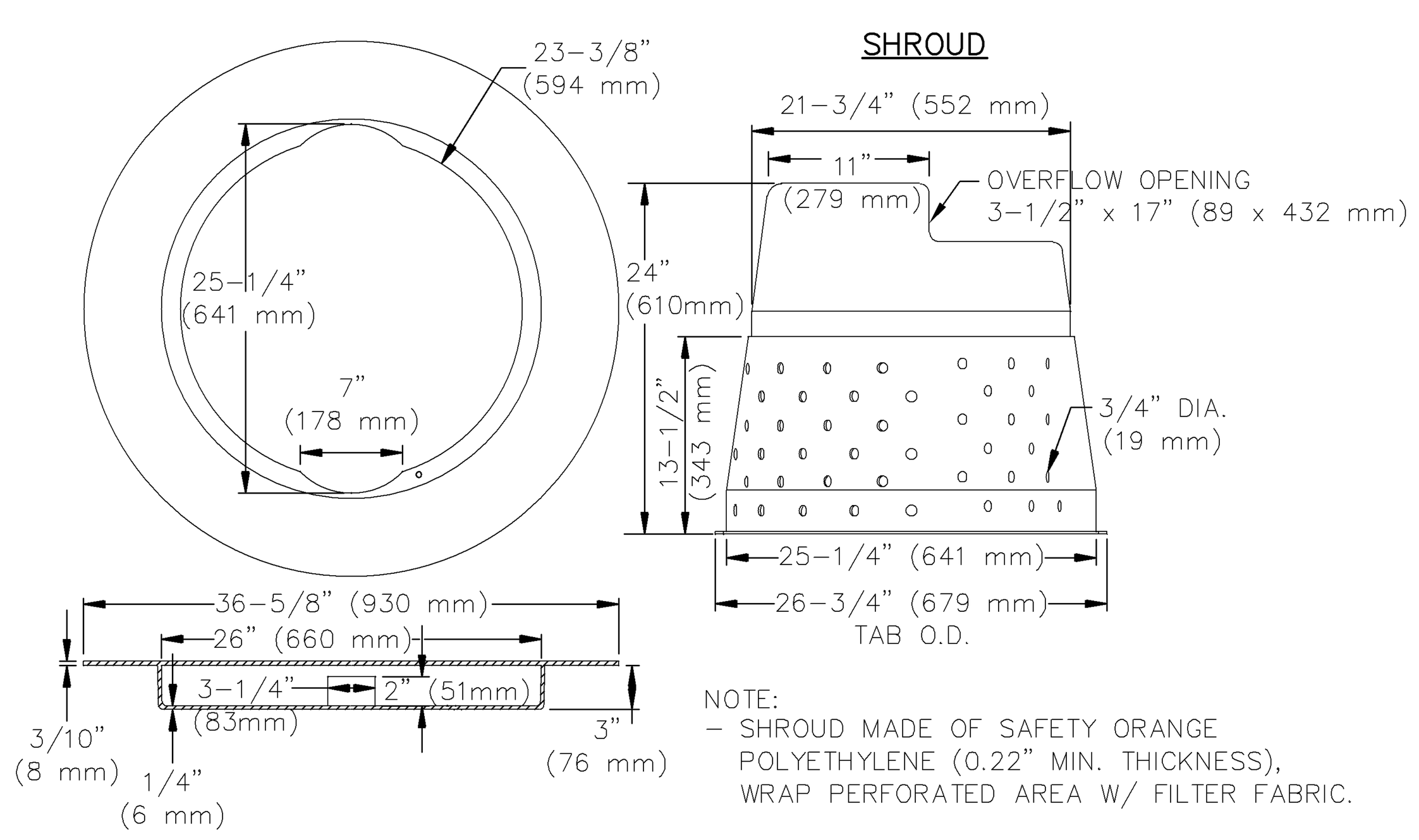
5 C502 NOT TO SCALE



NOTES:
- USE NEENAH R-2296 TYPE C GRATE OR APPROVED EQUAL.
- TO BE USED WITH MNDOT RING CASTING NO. 700-7, SP 4101.

502 – RADIAL GRATE STORM MANHOLE COVER
502 – Radial Grate.dwg 4/2009

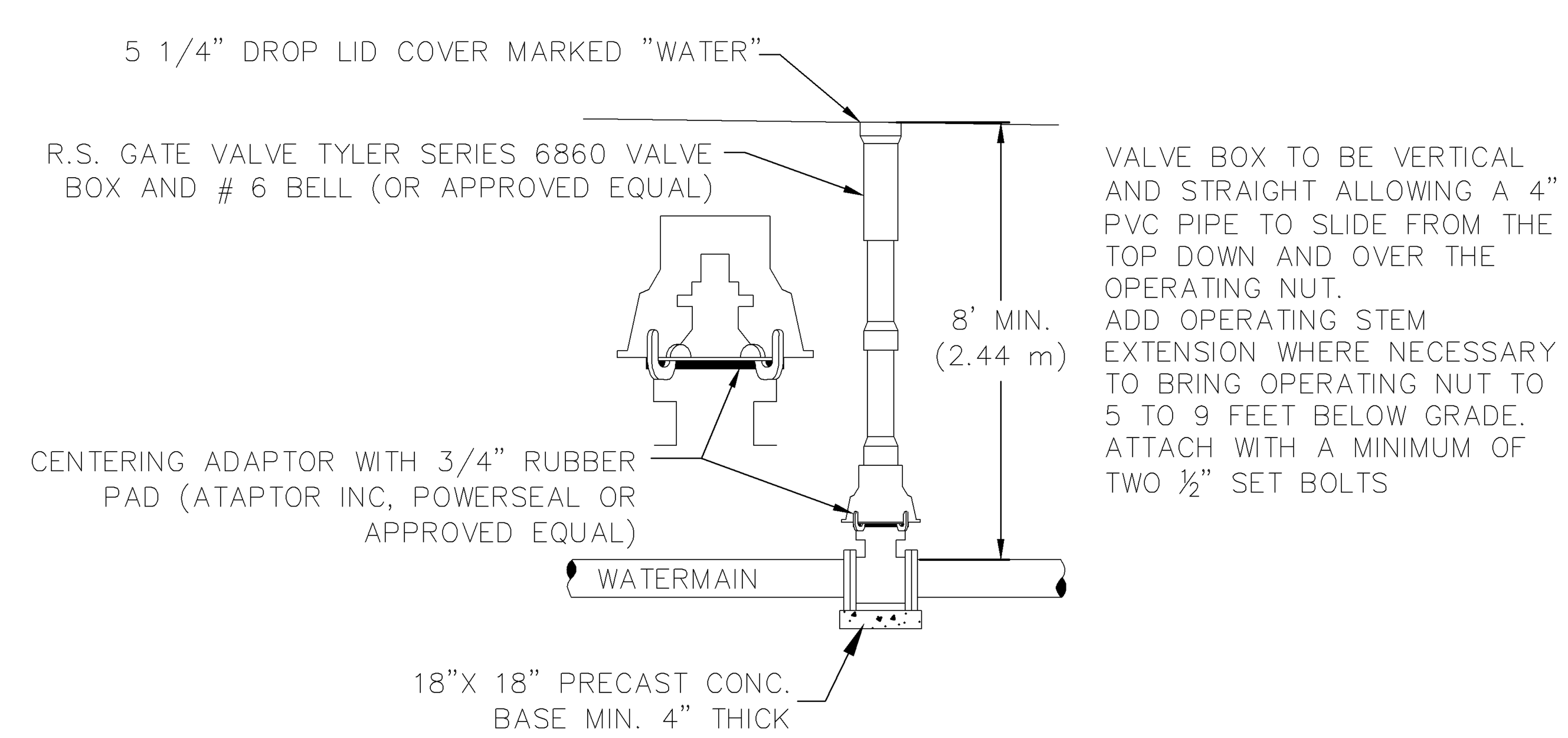
8 C502 NOT TO SCALE



NOTE:
- SHROUD MADE OF SAFETY ORANGE POLYETHYLENE (0.22" MIN. THICKNESS), WRAP PERFORATED AREA W/ FILTER FABRIC.

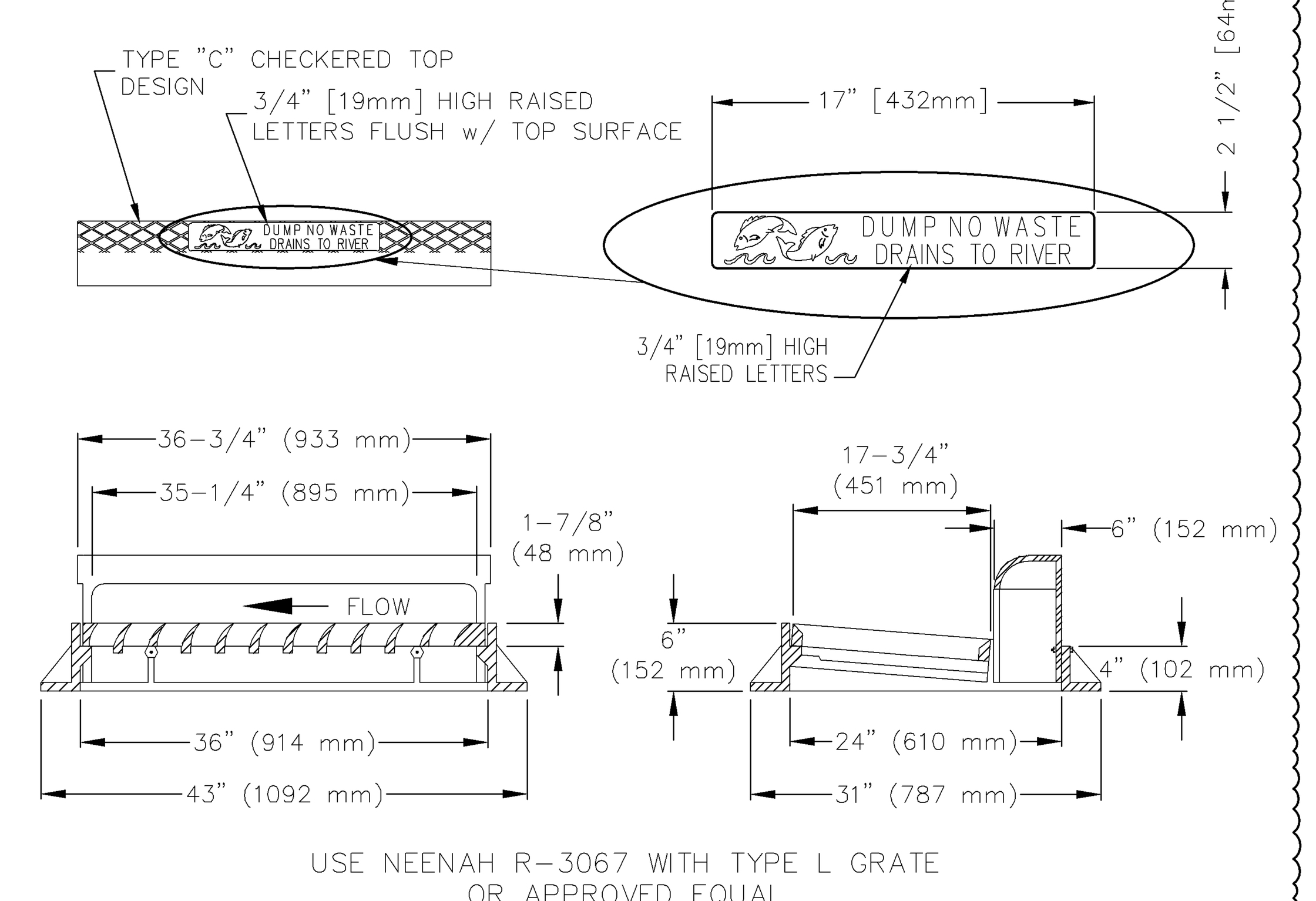
605 – INLET PROTECTION, PERFORATED EROSION BARRIER SHROUD W/ 27" DIA. FRAME
605 – Inlet Shroud (ROUND).dwg 5/2015

3 C502 NOT TO SCALE



302 – TYPICAL VALVE INSTALLATION
302 – Valve (RSGV).dwg 6/2015

6 C502 NOT TO SCALE



USE NEENAH R-3067 WITH TYPE L GRATE OR APPROVED EQUAL

504 – RECTANGULAR CATCH BASIN CASTING ASSEMBLY
504 – Rect. CB.dwg 5/2015

9 C502 NOT TO SCALE

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I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: T.J. Rose, P.E.
SIGNATURE:
DATE: 1/28/2022 LIC. NO.: 53681

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