

- NOTES:**
- EXISTING CONDITIONS AND TOPOGRAPHIC SURVEY PROVIDED BY: JONES HAUGH SMITH ENGINEERS AND SURVEYORS, OWATONNA, MN.
 - CONTRACTOR SHALL FIELD VERIFY ALL BUILDING DIMENSIONS AND REMOVAL LIMITS PRIOR TO ANY CONSTRUCTION.
 - SAWCUT CURB AND GUTTER AND SIDEWALK, OR REMOVE AT NEAREST EXPANSION JOINTS.
 - SAWCUT BITUMINOUS PAVEMENT FULL DEPTH AT ALL TIE-IN LOCATIONS.
 - THE LOCATIONS AND ELEVATIONS OF THE EXISTING UTILITIES SHOWN HEREIN ARE APPROXIMATE. THEY HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND/ OR RECORDS. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING LOCATION AND ELEVATION TO ENSURE THAT ANY EXISTING UTILITIES (SHOWN OR NOT SHOWN) ARE NOT DAMAGED DURING CONSTRUCTION.
 - ALL UTILITIES AND SERVICES SHOWN OR NOT SHOWN SHALL BE REMOVED OR ABANDONED WITHIN THE PROPERTY LINES. COORDINATE WITH LOCAL GAS COMPANY, UTILITY COMPANY, OR PROPER AUTHORITIES PRIOR TO REMOVAL OR ABANDONING, UNLESS OTHERWISE NOTED.
 - GOPHER STATE ONE CALL DAMAGE PREVENTION SYSTEM FOR BURIED UTILITIES. 1-800-252-1166.

LEGEND

	HYDRANT
	SANITARY MANHOLE
	GATE VALVE
	POWER POLE
	LIGHT POLE
	CATCH BASIN
	SIGN
	DECIDUOUS TREE
	CONIFEROUS TREE
	SHRUB
	PEDESTAL
	GUY WIRE
	BOLLARD
	POWER BOX
	ELECTRIC METER
	MONITORING WELL
	SANITARY SEWER CLEANOUT
	WOOD FENCE
	CHAINLINK FENCE
	WIRE FENCE
	STORM SEWER LINE
	SANITARY SEWER LINE
	WATERMAIN
	OVERHEAD ELECTRIC
	UNDERGROUND TELEPHONE
	UNDERGROUND FIBER
	UNDERGROUND ELECTRIC
	UNDERGROUND GAS LINE
	CONCRETE PAVEMENT
	BITUMINOUS PAVEMENT
	AGGREGATE SURFACING
	LANDSCAPING
	BUILDING

- TOPOGRAPHIC SURVEY NOTES:**
- TOPOGRAPHIC SURVEY, INCLUDING PROPERTY LINES, EXISTING UTILITIES, TOPOGRAPHY WITH SPOT ELEVATIONS AND PHYSICAL FEATURES WAS PROVIDED BY:
 JONES, HAUGH & SMITH INC.
 415 WEST NORTH STREET
 OWATONNA, MN 55060
 - CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID PROPERTY DAMAGE TO ADJACENT PROPERTIES DURING THE CONSTRUCTION OF THIS PROJECT



322 1st Ave N, Suite #600
 Minneapolis, MN 55401
 phone 612.746.4260
 facsimile 612.746.4754
 www.jlgarchitects.com
 copyright © 2020

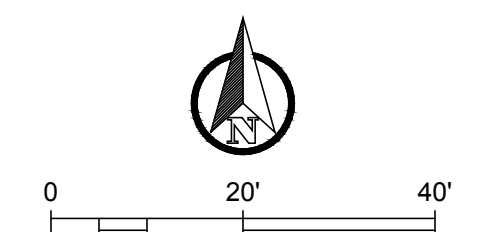
DESIGN TREE
 engineering & land surveying
 10000 Hennepin Avenue, Suite 100
 Minneapolis, MN 55424
 phone 612.338.1111
 www.design-tree.com

REVISION SCHEDULE

NO.	DESCRIPTION	DATE

LWO DEVELOPMENT, LLC
EASTGATE APARTMENTS
 OWATONNA, MN

DATE
06/19/2020
 PHASE
CONSTRUCTION DOCUMENTS
 PROJECT
02220002
 SHEET
C101
REMOVALS PLAN



- NOTES:**
- ALL DIMENSIONS SHOWN ARE TO FLOW LINE, CENTERLINE OF FENCE, OR EDGE OF PAVEMENT, UNLESS OTHERWISE NOTED.
 - CONTRACTOR SHALL VERIFY ALL PLAN AND DETAIL DIMENSIONS PRIOR TO CONSTRUCTION.
 - ALL CROSSWALK STRIPING SHALL BE WHITE IN COLOR.
 - ALL INTERIOR PARKING STALL STRIPING SHALL BE 4" AND YELLOW IN COLOR.
 - ACCESSIBLE PARKING STALL STRIPING, ACCESS AISLE, AND SYMBOL SHALL BE PAINTED IN ACCORDANCE WITH LOCAL AUTHORITY REQUIREMENTS.
 - GOPHER STATE ONE CALL DAMAGE PREVENTION SYSTEM FOR BURIED UTILITIES. 1-800-252-1166.

- LEGEND**
- PROPOSED LIGHT DUTY BITUMINOUS PAVEMENT
 - PROPOSED HEAVY DUTY BITUMINOUS PAVEMENT
 - PROPOSED CONCRETE SIDEWALK
 - PROPOSED CONCRETE PAVEMENT
 - PROPOSED CURB AND GUTTER
 - PROPOSED RETAINING WALL
 - PROPOSED CHAINLINK FENCE
 - PROPOSED WOOD/VINYL (PRIVACY) FENCE
 - PROPOSED TRAFFIC CONTROL SIGNAGE
 - PROPOSED PAINTED DIRECTIONAL ARROW
 - PROPOSED PAINTED ACCESSIBLE PARKING SYMBOL
 - PROPOSED MANHOLE
 - PROPOSED CATCH BASIN
 - PROPOSED HYDRANT
 - PROPOSED GATE VALVE
 - PROPOSED FLARED END SECTION

PROPERTY INFORMATION

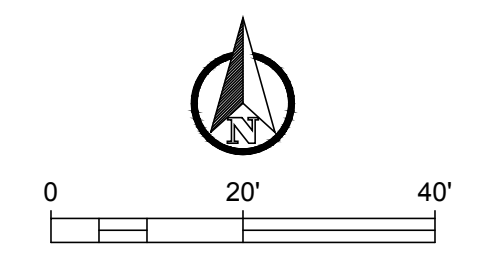
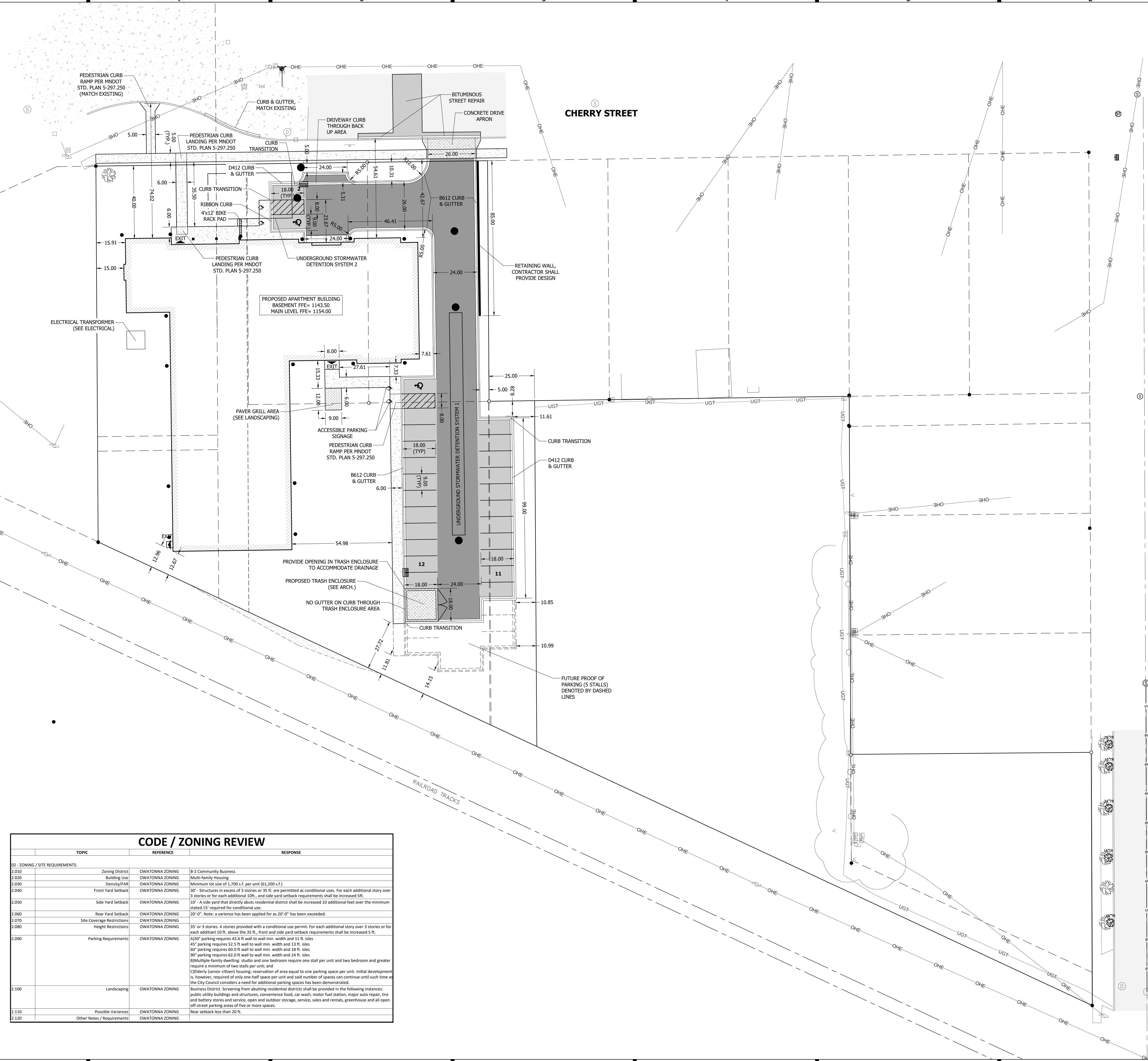
TOTAL PROPERTY AREA	1.378 AC
DISTURBED AREA	1.60 ± AC
EXISTING IMPERVIOUS AREA	0.633 AC
PROPOSED IMPERVIOUS AREA	0.739 AC
PROOF OF PARKING IMPERVIOUS AREA	0.037 AC
TOTAL PROPOSED IMPERVIOUS AREA	0.776 AC
NET INCREASE	0.143 AC

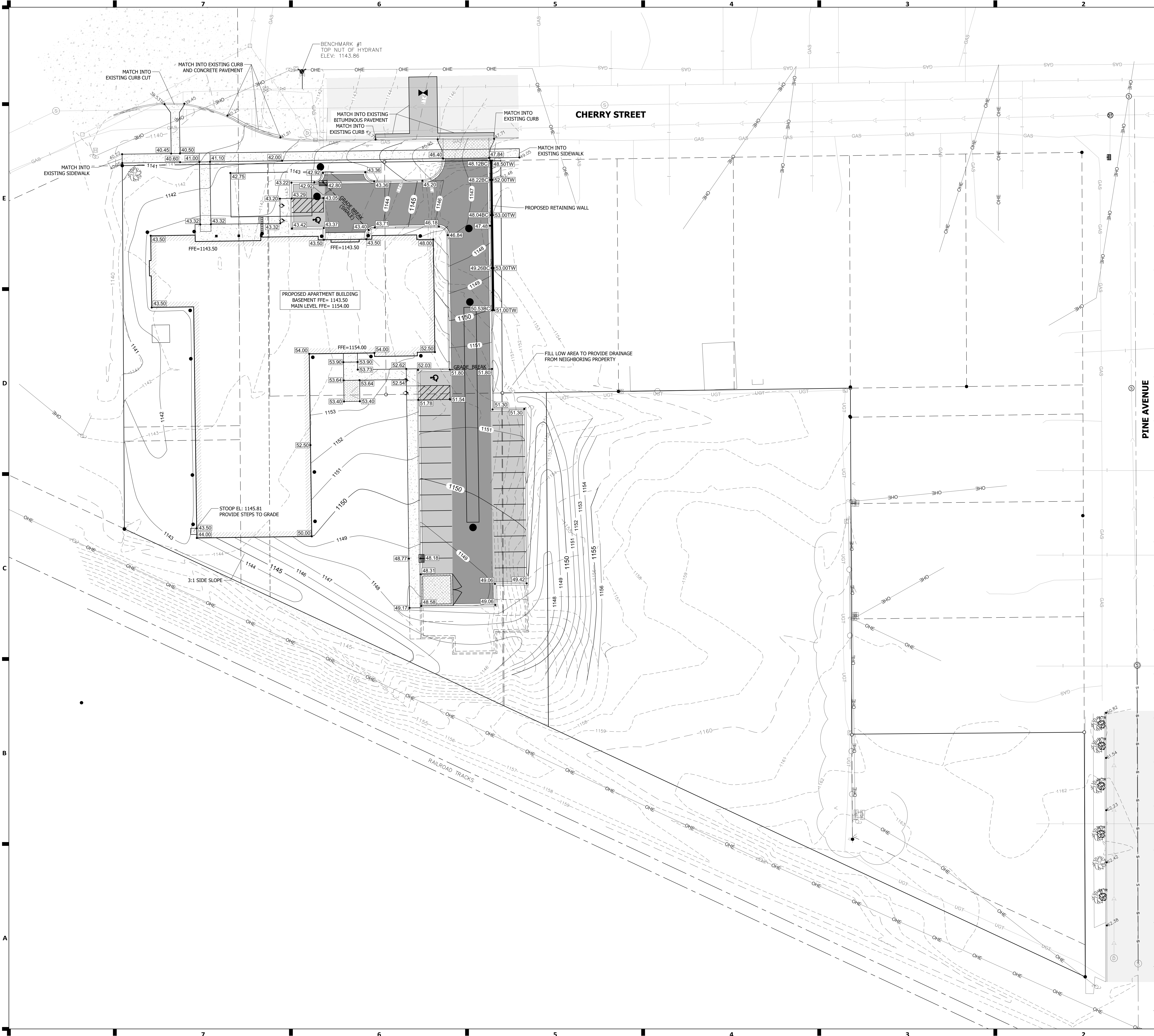
PARKING INFORMATION

PARKING STALLS	23 STALLS
ACCESSIBLE STALLS	2 STALLS
TOTAL STALLS	25 STALLS

CODE / ZONING REVIEW

TOPIC	REFERENCE	RESPONSE
02 - ZONING / SITE REQUIREMENTS:		
2.010	Zoning District: OWATONNA ZONING	Is 3 Community Business
2.020	Building Use: OWATONNA ZONING	Multi-Family Housing
2.030	Density/FAR: OWATONNA ZONING	Minimum lot size of 1,700 s.f. per unit (61,200 s.f.)
2.040	Front Yard Setback: OWATONNA ZONING	30' - Structures in excess of 3 stories or 35 ft. are permitted as conditional uses. For each additional story over 3 stories or for each additional 10ft., and side yard setback requirements shall be increased 5ft.
2.050	Side Yard Setback: OWATONNA ZONING	10' - A side yard that directly abuts residential district shall be increased 10 additional feet over the minimum stated 15' required for conditional use.
2.060	Rear Yard Setback: OWATONNA ZONING	20'-0". Note: a variance has been applied for as 20'-0" has been exceeded.
2.070	Site Coverage Restrictions: OWATONNA ZONING	
2.080	Height Restrictions: OWATONNA ZONING	35' or 3 stories, 4 stories provided with a conditional use permit. For each additional story over 3 stories or for each additional 10 ft. above the 35 ft., front and side yard setback requirements shall be increased 5 ft.
2.090	Parking Requirements: OWATONNA ZONING	A)30' parking requires 45.6 ft wall to wall min. width and 11 ft. isles 45' parking requires 52.5 ft wall to wall min. width and 11 ft. isles 60' parking requires 60.0 ft wall to wall min. width and 18 ft. isles 90' parking requires 62.0 ft wall to wall min. width and 24 ft. isles B)Multiple-family dwelling: studio and one bedroom require one stall per unit and two bedroom and greater require a minimum of two stalls per unit; and C)Elderly (senior citizen) housing: reservation of area equal to one parking space per unit. Initial development is, however, required of only one-half space per unit and said number of spaces can continue until such time as the City Council considers a need for additional parking spaces has been demonstrated.
2.100	Landscaping: OWATONNA ZONING	Business District. Screening from abutting residential districts shall be provided in the following instances: public utility buildings and structures, convenience food, car wash, motor fuel station, major auto repair, tire and battery stores and service, open and outdoor storage, service, sales and rentals, greenhouse and all open off-street parking areas of five or more spaces.
2.110	Possible Variances: OWATONNA ZONING	Rear setback less than 20 ft.
2.120	Other Notes / Requirements: OWATONNA ZONING	





- NOTES:**
1. THE LOCATIONS AND ELEVATIONS OF THE EXISTING UTILITIES SHOWN HEREIN ARE APPROXIMATE. THEY HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND/OR RECORDS. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING LOCATION AND ELEVATION TO ENSURE THAT ANY EXISTING UTILITIES (SHOWN OR NOT SHOWN) ARE NOT DAMAGED DURING CONSTRUCTION.
 2. SIDEWALKS SHALL MEET ADA REQUIREMENTS, AND SHALL NOT EXCEED 2.00% CROSS SLOPE, OR 5.00% LONGITUDINAL SLOPE.
 3. CONCRETE ENTRANCES AND APPROACHES SHALL NOT EXCEED 2.00% CROSS SLOPE IN SIDEWALK AREAS.
 4. ACCESSIBLE PARKING STALLS SHALL MEET ADA REQUIREMENTS, AND SHALL NOT EXCEED 2.00% CROSS SLOPE IN ALL DIRECTIONS.
 5. REFER TO GEOTECHNICAL EVALUATION REPORT FOR EARTHWORK SPECIFICATIONS.
 6. ALL EXCESS OR WASTE MATERIAL GENERATED AS PART OF CONSTRUCTION SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN ACCORDANCE WITH STATE AND LOCAL REQUIREMENTS.
 7. IN ADDITION TO THESE PLANS, A STORMWATER MANAGEMENT STUDY HAS BEEN PROVIDED. THE STORMWATER MANAGEMENT STUDY INCLUDES IMPORTANT INFORMATION REGARDING STORMWATER PROTECTION FOR THE SITE, SUCH AS CONCRETE WASH-OUTS, HAZARDOUS MATERIALS HANDLING/SPILLS, EROSION CONTROL, INSTALLATION, EROSION CONTROL MAINTENANCE, ETC. THE CONTRACTOR SHALL REVIEW THE STORMWATER BOOK AND USE THE INFORMATION TO COMPLY WITH ALL STATE AND LOCAL REQUIREMENTS.
 8. GOPHER STATE ONE CALL DAMAGE PREVENTION SYSTEM FOR BURIED UTILITIES. 1-800-252-1166.

GRADING LEGEND

- - - - - = EXISTING MAJOR CONTOUR
- - - - - = EXISTING MINOR CONTOUR
- - - - - = EXISTING CONTOUR LABEL
- = PROPOSED MAJOR CONTOUR
- = PROPOSED MINOR CONTOUR
- = PROPOSED CONTOUR LABEL
- 100.00 = EXISTING SPOT ELEVATION*
- XXXXXX = PROPOSED SPOT ELEVATION*
- XXXXXXTO = PROPOSED SPOT ELEVATION AT TOP OF SIDEWALK OR BACK OF CURB

*SPOT ELEVATIONS ALONG CURB & GUTTER AND OTHER REVEALS ARE TO FLOWLINE, UNLESS OTHERWISE NOTED.

JLG architects

322 1st Ave N, Suite #600
 Minneapolis, MN 55401
 phone 612.746.4260
 facsimile 612.746.4754
 www.jlgarchitects.com
 copyright © 2020

DESIGN TREE
 engineering - land surveying
 40 Chief of Commons Road
 55120-2127

LAND SURVEYING: THIS PLAN IS AN OPERATIONAL DOCUMENT. IT IS NOT A CONTRACT. IT IS THE PROPERTY OF DESIGN TREE ENGINEERING AND SHALL NOT BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM. DESIGN TREE ENGINEERING IS NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS IN THIS PLAN. THE USER OF THIS PLAN SHALL BE RESPONSIBLE FOR VERIFYING THE ACCURACY OF THE INFORMATION SHOWN HEREIN. DESIGN TREE ENGINEERING IS NOT A PROFESSIONAL ENGINEER OR ARCHITECT. LICENSE NO. 040900000

REVISION SCHEDULE

NO.	DESCRIPTION	DATE

LWO DEVELOPMENT, LLC
EASTGATE APARTMENTS
 OWATONNA, MN

DATE: 06/19/2020
 PHASE: CONSTRUCTION DOCUMENTS
 PROJECT: 02220002
 SHEET: C301
 GRADING PLAN

DATE: 06/19/2020

NOTES:

1. THE LOCATIONS AND ELEVATIONS OF THE EXISTING UTILITIES SHOWN HEREIN ARE APPROXIMATE. THEY HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND/OR RECORDS. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING LOCATION AND ELEVATION TO ENSURE THAT ANY EXISTING UTILITIES (SHOWN OR NOT SHOWN) ARE NOT DAMAGED DURING CONSTRUCTION.
2. CONTRACTOR SHALL VERIFY AND COORDINATE BUILDING UTILITY CONNECTION SIZES, LOCATIONS, AND ELEVATIONS WITH PLUMBING, MECHANICAL, AND ELECTRICAL CONTRACTORS.
3. ALL WATER PIPING SHALL BE BURIED A MINIMUM OF 8".
4. SEE WATER DETAILS FOR ADDITIONAL INFORMATION.
5. WATER LINES SHALL MAINTAIN A MINIMUM OF 10' OF SEPARATION FROM SANITARY SEWER AND STORM SEWER INFRASTRUCTURE.
6. SANITARY SEWER CLEANOUTS SHALL BE PROVIDED WITHIN 5' OF THE BUILDING FOR UNIT'S CONNECTION.
7. SANITARY SEWER CLEANOUT SPACING SHALL NOT EXCEED 90'.
8. SANITARY SEWER SERVICES SHALL HAVE A MINIMUM OF 2.00% GRADE.
9. SEE SANITARY SEWER DETAILS FOR ADDITIONAL INFORMATION.
10. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE MINNESOTA STATE PLUMBING CODE.
11. ALL PIPING SHALL BE TESTED IN ACCORDANCE WITH THE MINNESOTA STATE PLUMBING CODE.
12. ALL IMPROVEMENTS SHALL REMAIN VISIBLE FOR INSPECTION.
13. CONNECT NYLOPLAST AREA DRAINS TO GUTTER DOWNSPOUTS AT EACH DOWNSPOUT LOCATION. VERIFY CONNECTION LOCATION WITH ARCHITECTURAL.
14. GOPHER STATE ONE CALL DAMAGE PREVENTION SYSTEM FOR BURIED UTILITIES. 1-800-252-1166

UTILITY LEGEND

- = EXISTING HYDRANT
- = EXISTING CURB STOP
- = EXISTING GATE VALVE
- = EXISTING SANITARY MANHOLE
- = EXISTING CLEANOUT
- = EXISTING STORM MANHOLE
- = EXISTING CATCH BASIN
- = EXISTING CULVERT APRON
- = EXISTING WATER LINE
- = EXISTING SANITARY LINE
- = EXISTING STORM LINE
- = PROPOSED HYDRANT
- = PROPOSED CURB STOP
- = PROPOSED GATE VALVE
- = PROPOSED SANITARY MANHOLE
- = PROPOSED CLEANOUT
- = PROPOSED STORM MANHOLE
- = PROPOSED CATCH BASIN
- = PROPOSED CULVERT APRON
- = PROPOSED WATER LINE
- = PROPOSED SANITARY LINE
- = PROPOSED STORM LINE

**UNDERGROUND DETENTION SYSTEM 1
BMP REQUIREMENTS***

STORAGE REQUIRED:	2,356 CF
SYSTEM INVERT ELEVATION:	1142.00

*1 ROW OF 120 LF - 60" CMP SHOWN FOR REFERENCE ONLY, CONTRACTOR SHALL SUBMIT SHOP DRAWING OF PROPOSED SYSTEM FOR APPROVAL PRIOR TO CONSTRUCTION.

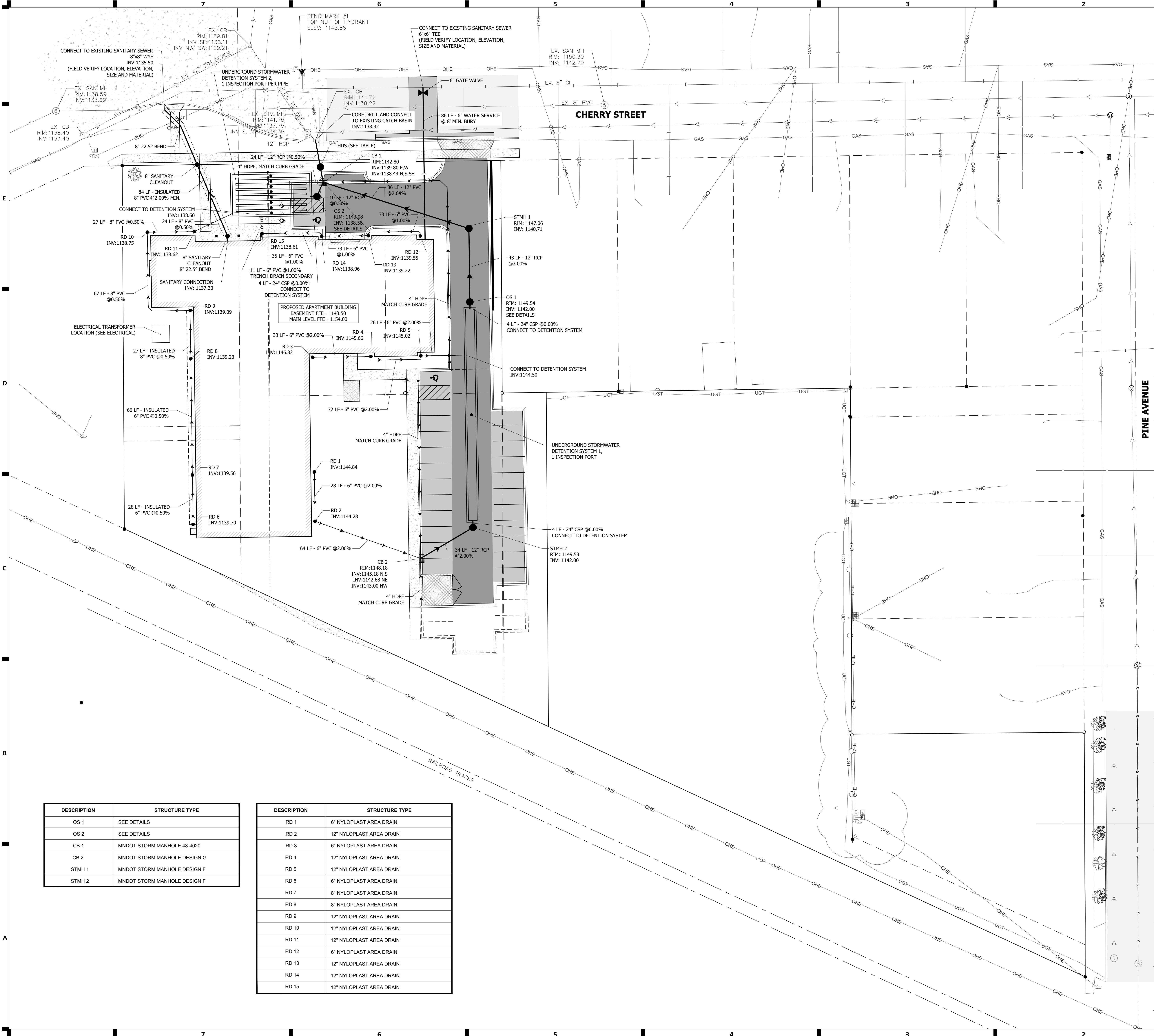
**UNDERGROUND DETENTION SYSTEM 2
BMP REQUIREMENTS***

STORAGE REQUIRED:	1,150 CF
SYSTEM INVERT ELEVATION:	1138.50

*8 ROWS OF 40 LF - 24" CMP WITH (2) 24" HEADERS SHOWN FOR REFERENCE ONLY, CONTRACTOR SHALL SUBMIT SHOP DRAWING OF PROPOSED SYSTEM FOR APPROVAL PRIOR TO CONSTRUCTION.

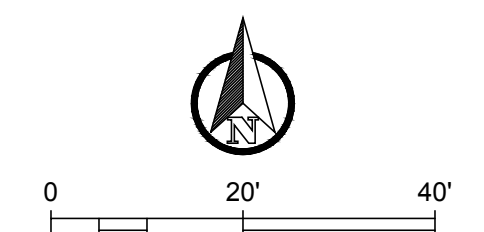
HDS REQUIREMENTS

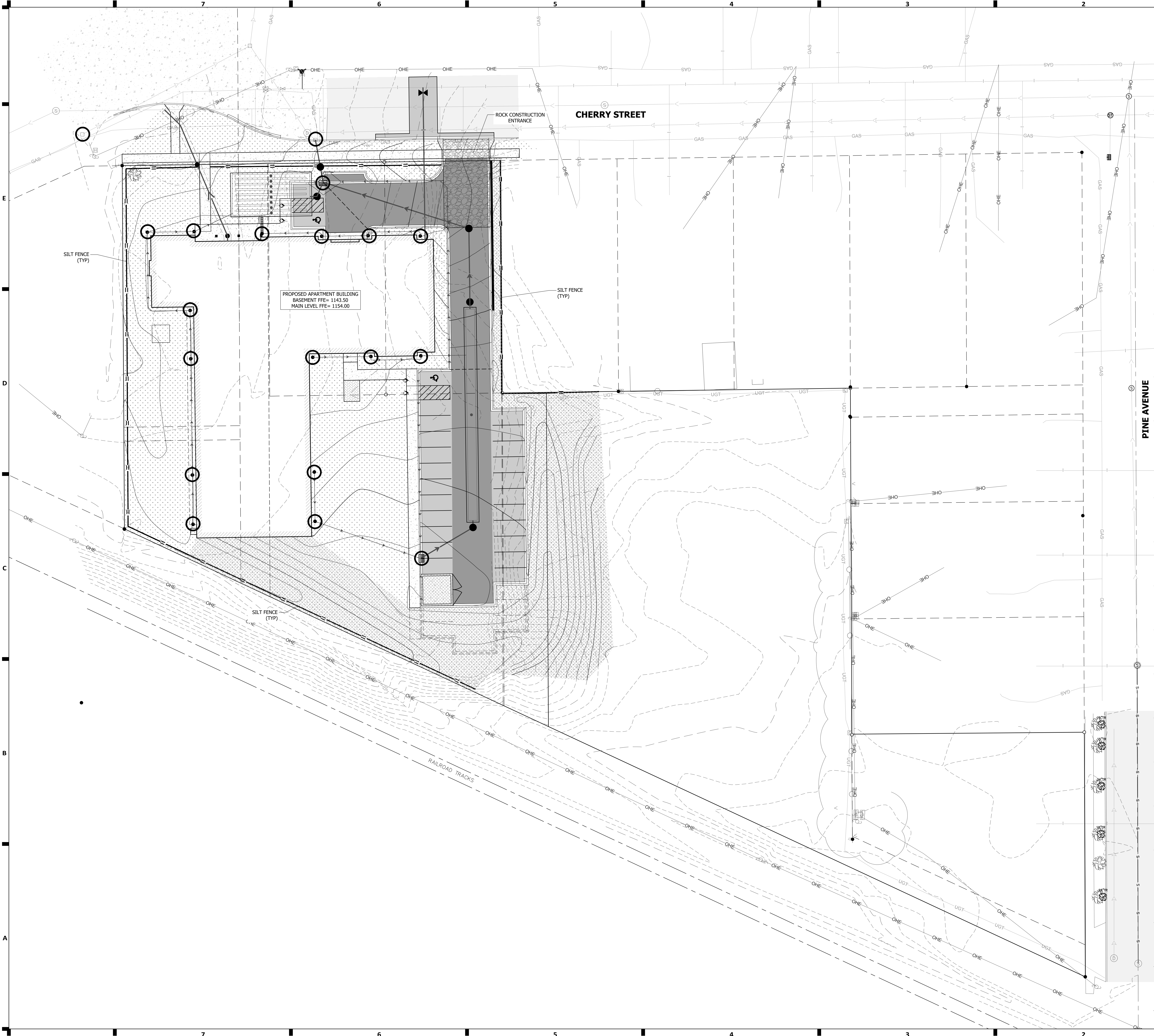
RIM ELEVATION:	1143.50
PIPE INVERT ELEVATION:	1138.30
TREATMENT FLOWRATE:	0.67 CFS
PEAK FLOWRATE:	7.71 CFS
MIN. TOTAL SUSPENDED SOLID REMOVAL RATE:	21%
MIN. PARTICULATE PHOSPHOROUS REMOVAL RATE:	38%



DESCRIPTION	STRUCTURE TYPE
OS 1	SEE DETAILS
OS 2	SEE DETAILS
CB 1	MNDOT STORM MANHOLE 48-4020
CB 2	MNDOT STORM MANHOLE DESIGN G
STMH 1	MNDOT STORM MANHOLE DESIGN F
STMH 2	MNDOT STORM MANHOLE DESIGN F

DESCRIPTION	STRUCTURE TYPE
RD 1	6" NYLOPLAST AREA DRAIN
RD 2	12" NYLOPLAST AREA DRAIN
RD 3	6" NYLOPLAST AREA DRAIN
RD 4	12" NYLOPLAST AREA DRAIN
RD 5	12" NYLOPLAST AREA DRAIN
RD 6	6" NYLOPLAST AREA DRAIN
RD 7	8" NYLOPLAST AREA DRAIN
RD 8	8" NYLOPLAST AREA DRAIN
RD 9	12" NYLOPLAST AREA DRAIN
RD 10	12" NYLOPLAST AREA DRAIN
RD 11	12" NYLOPLAST AREA DRAIN
RD 12	6" NYLOPLAST AREA DRAIN
RD 13	12" NYLOPLAST AREA DRAIN
RD 14	12" NYLOPLAST AREA DRAIN
RD 15	12" NYLOPLAST AREA DRAIN





- NOTES:**
1. ALL DISTURBED AREAS SHALL BE FINAL GRADED AND PERMANENTLY STABILIZED WITH THE SEED MIX IDENTIFIED ON PLANS.
 2. INLET PROTECTION SHALL BE PROVIDED ON ALL CATCH BASINS AND INLETS DOWN GRADIENT OF CONSTRUCTION ACTIVITY.
 3. PROVIDE SILT FENCE PERIMETER CONTROL DOWN GRADIENT OF ALL CONSTRUCTION ACTIVITY AND TEMPORARY STOCKPILES.
 4. TEMPORARY ROCK ENTRANCES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT THE DURATION OF CONSTRUCTION.
 5. NO OFFSITE VEHICLE TRACKING IS PERMITTED. STREETS SHALL BE CLEANED AND SWEEPED WHENEVER TRACKING OF SEDIMENTS OCCURS AND BEFORE SITES ARE LEFT IDLE FOR WEEKENDS AND HOLIDAYS.
 6. REFER TO THE SWPPP AND THE CITY OF OWATONNA EROSION CONTROL REQUIREMENTS FOR FURTHER EROSION CONTROL SEQUENCING.
 7. IN ADDITION TO THESE PLANS, A STORMWATER MANAGEMENT STUDY HAS BEEN PROVIDED. THE STORMWATER MANAGEMENT STUDY INCLUDES IMPORTANT INFORMATION REGARDING STORMWATER PROTECTION FOR THE SITE, SUCH AS CONCRETE WASH-OUTS, HAZARDOUS MATERIALS HANDLING/SPILLS, EROSION CONTROL INSTALLATION, EROSION CONTROL MAINTENANCE, ETC. THE CONTRACTOR SHALL REVIEW THE STORMWATER BOOK AND USE THE INFORMATION TO COMPLY WITH ALL STATE AND LOCAL REQUIREMENTS.
 8. GOPHER STATE ONE CALL DAMAGE PREVENTION SYSTEM FOR BURIED UTILITIES. 1-800-252-1166.

EROSION CONTROL QUANTITIES:

	ROCK CONSTRUCTION ENTRANCE	(144 SY)
	SILT FENCE	(785 LF)
	SEED MIX 25-151 (HYDROSEED)	(3,875 SY)
	CATEGORY III EROSION CONTROL BLANKET	(1,670 SY)
	INLET PROTECTION	(19 EA)

JLG architects
 322 1st Ave N, Suite #600
 Minneapolis, MN 55401
 phone: 612.746.4260
 facsimile: 612.746.4274
 www.jlgarchitects.com
 copyright © 2020

DESIGN TREE
 engineering • land surveying
 10000 15th Avenue S
 Burnsville, MN 55335
 952.891.2217

REGISTERED PROFESSIONAL ENGINEER
 LICENSE NO. 06000000
 REGISTERED PROFESSIONAL LAND SURVEYOR
 LICENSE NO. 06000000
 MICHAEL J. SCHNEIDER
 REG. NO. 06000000
 DATE:

REVISION SCHEDULE

NO.	DESCRIPTION	DATE

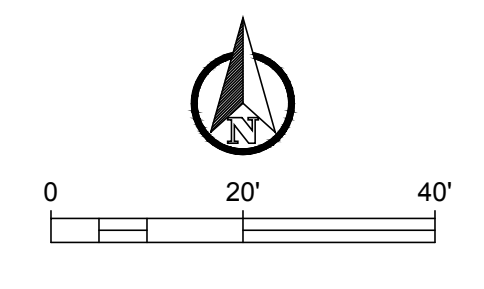
LWO DEVELOPMENT, LLC
EASTGATE APARTMENTS
 OWATONNA, MN

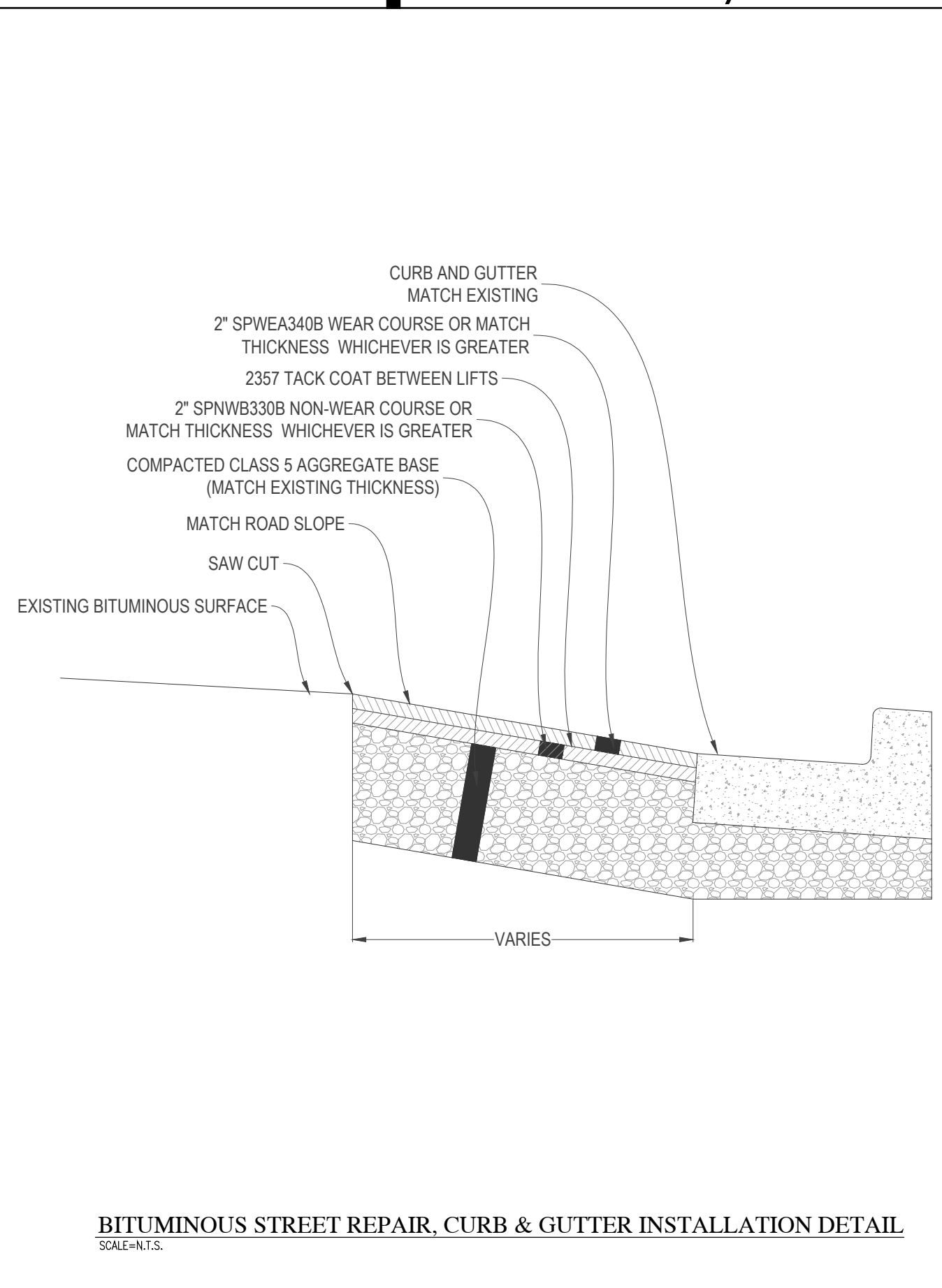
DATE
06/19/2020

PHASE
CONSTRUCTION DOCUMENTS

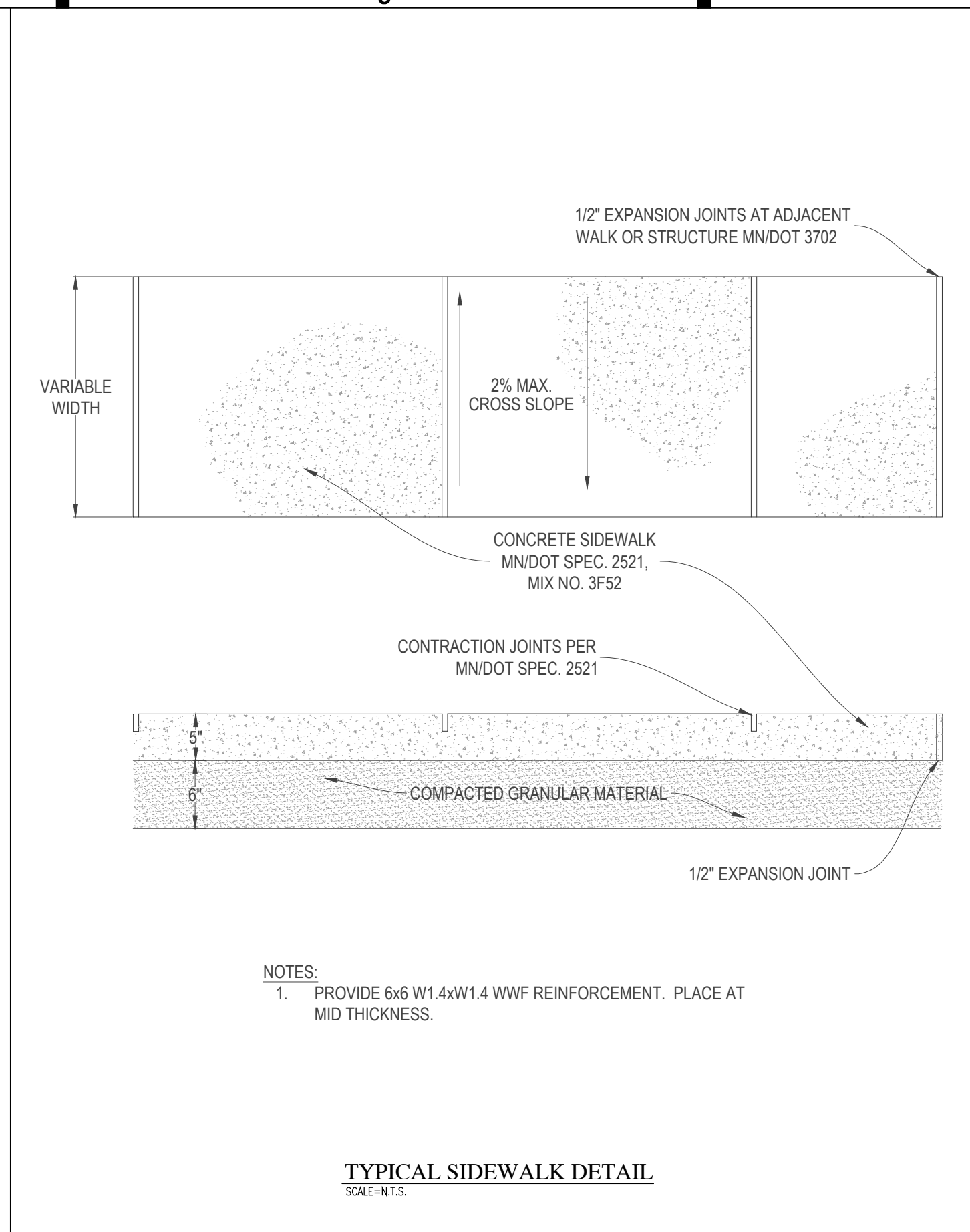
PROJECT
02220002

SHEET
C501
 EROSION CONTROL PLAN

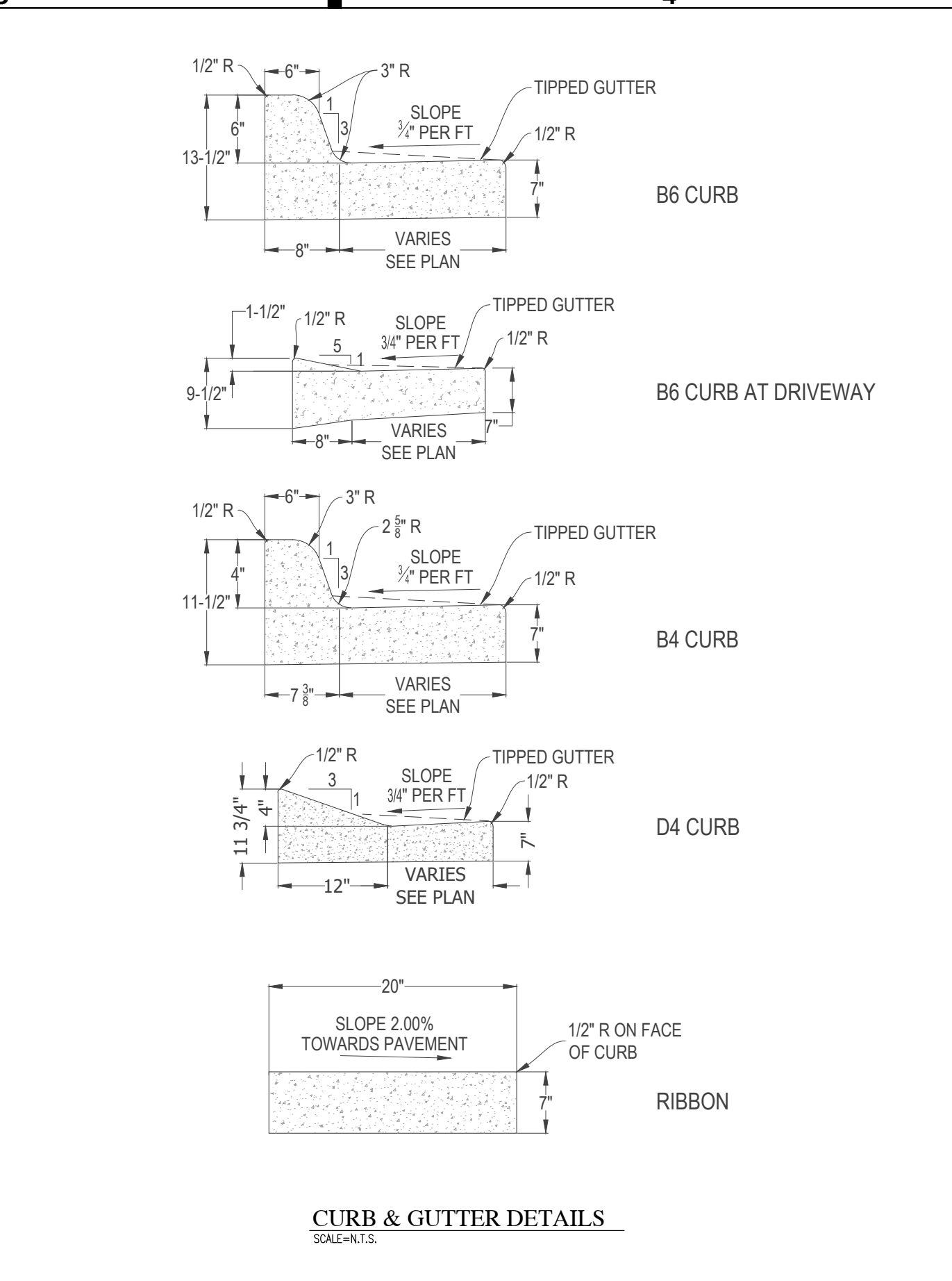




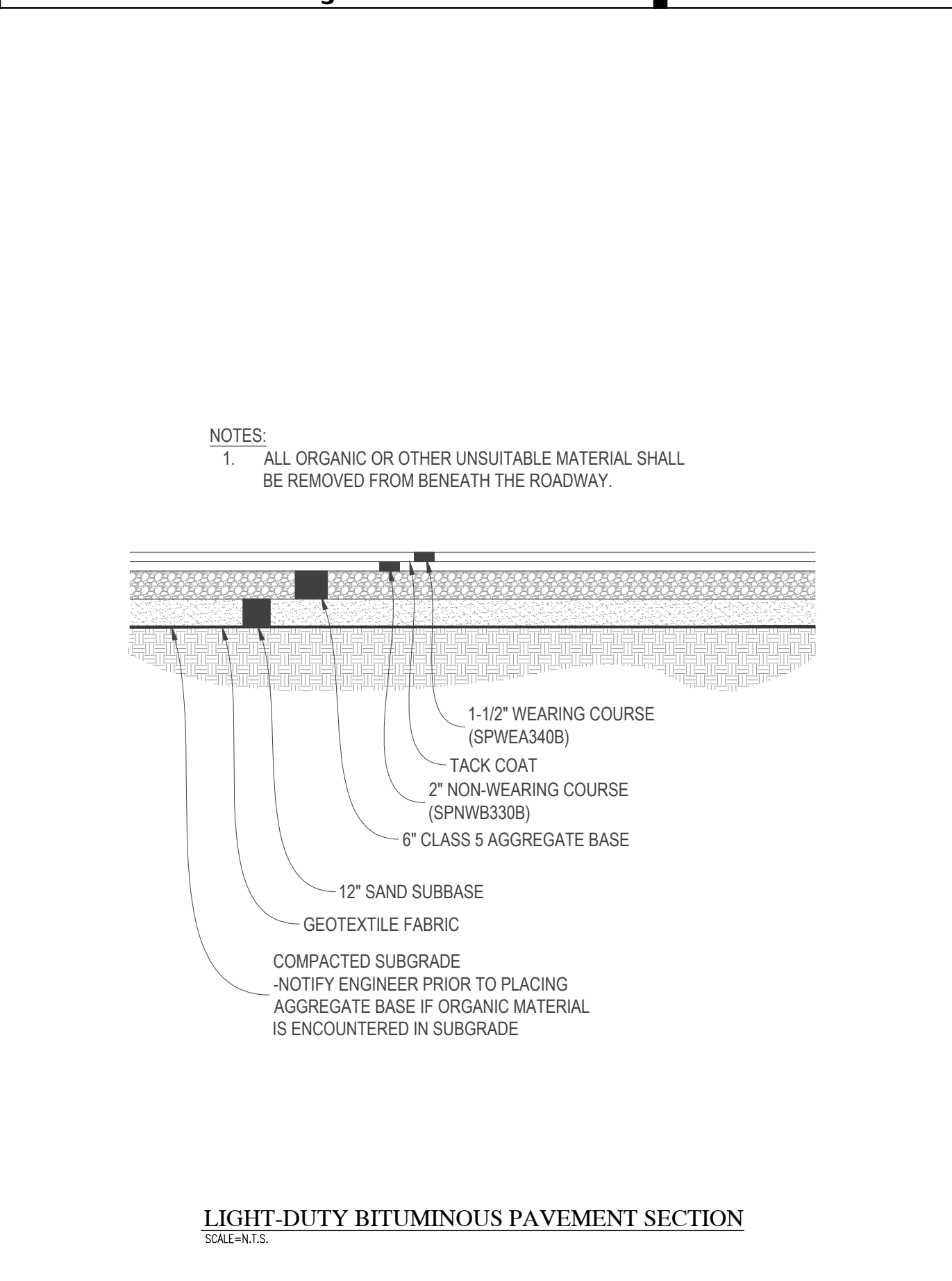
BITUMINOUS STREET REPAIR, CURB & GUTTER INSTALLATION DETAIL
SCALE: N.T.S.



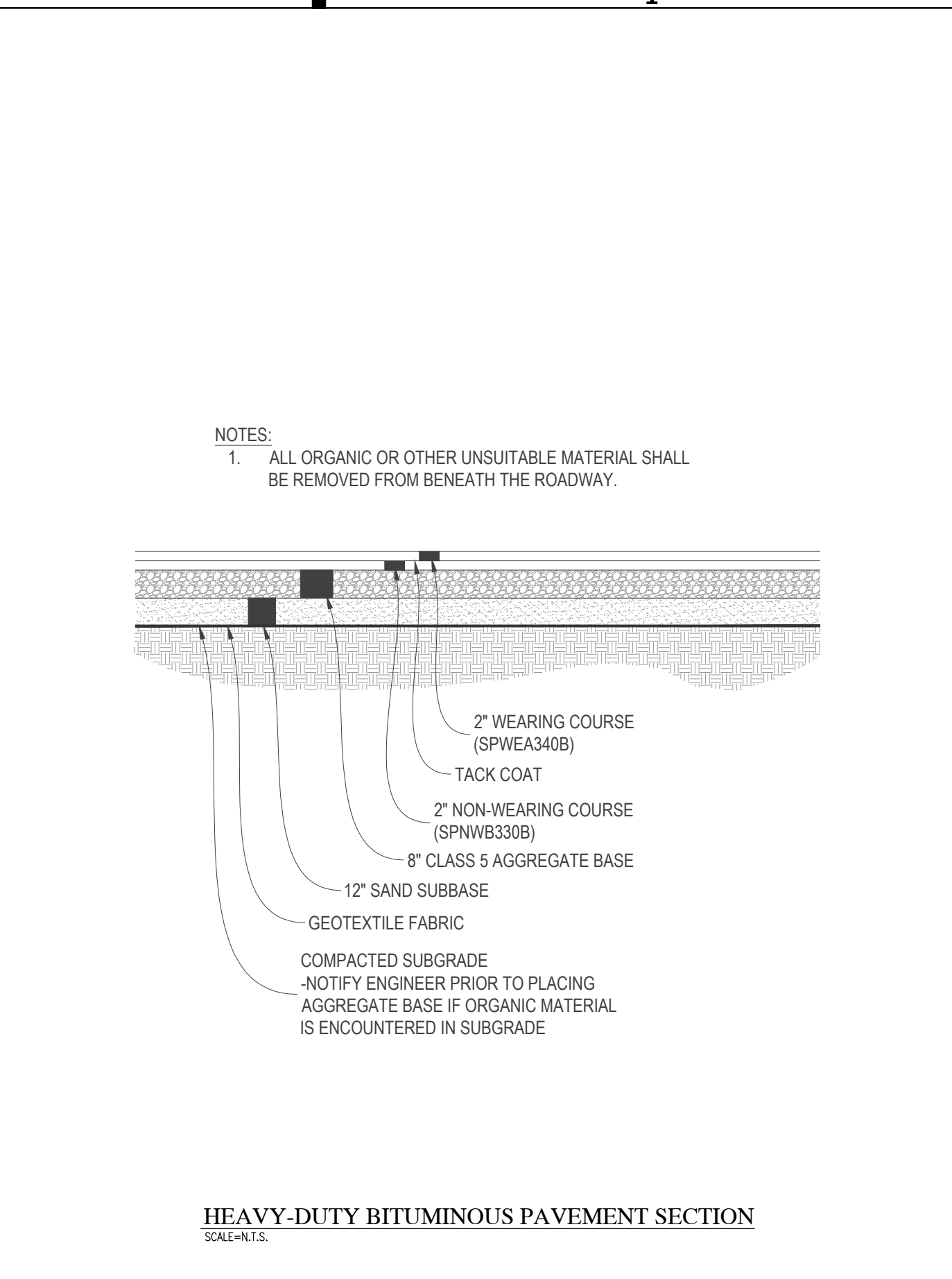
TYPICAL SIDEWALK DETAIL
SCALE: N.T.S.



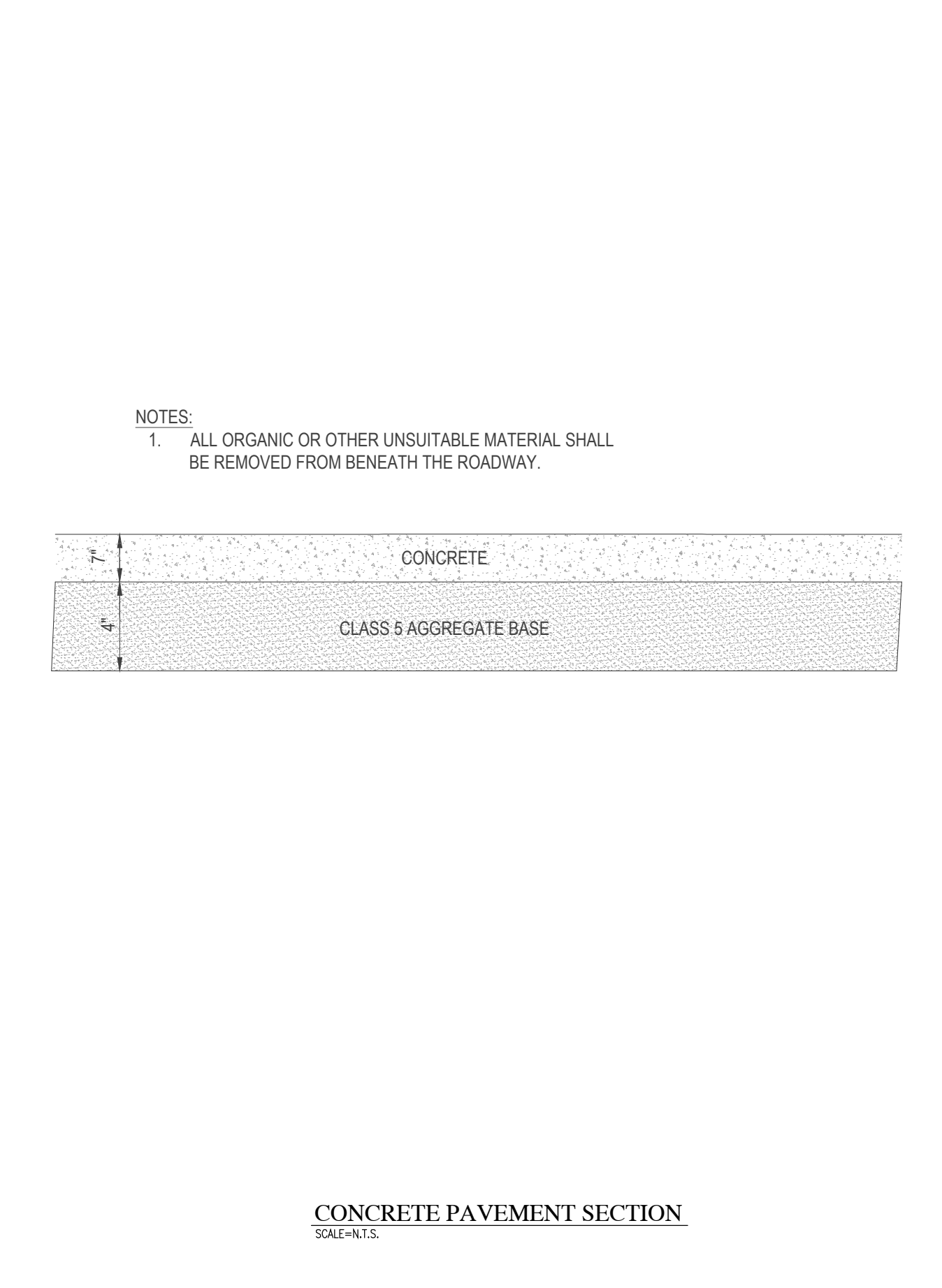
CURB & GUTTER DETAILS
SCALE: N.T.S.



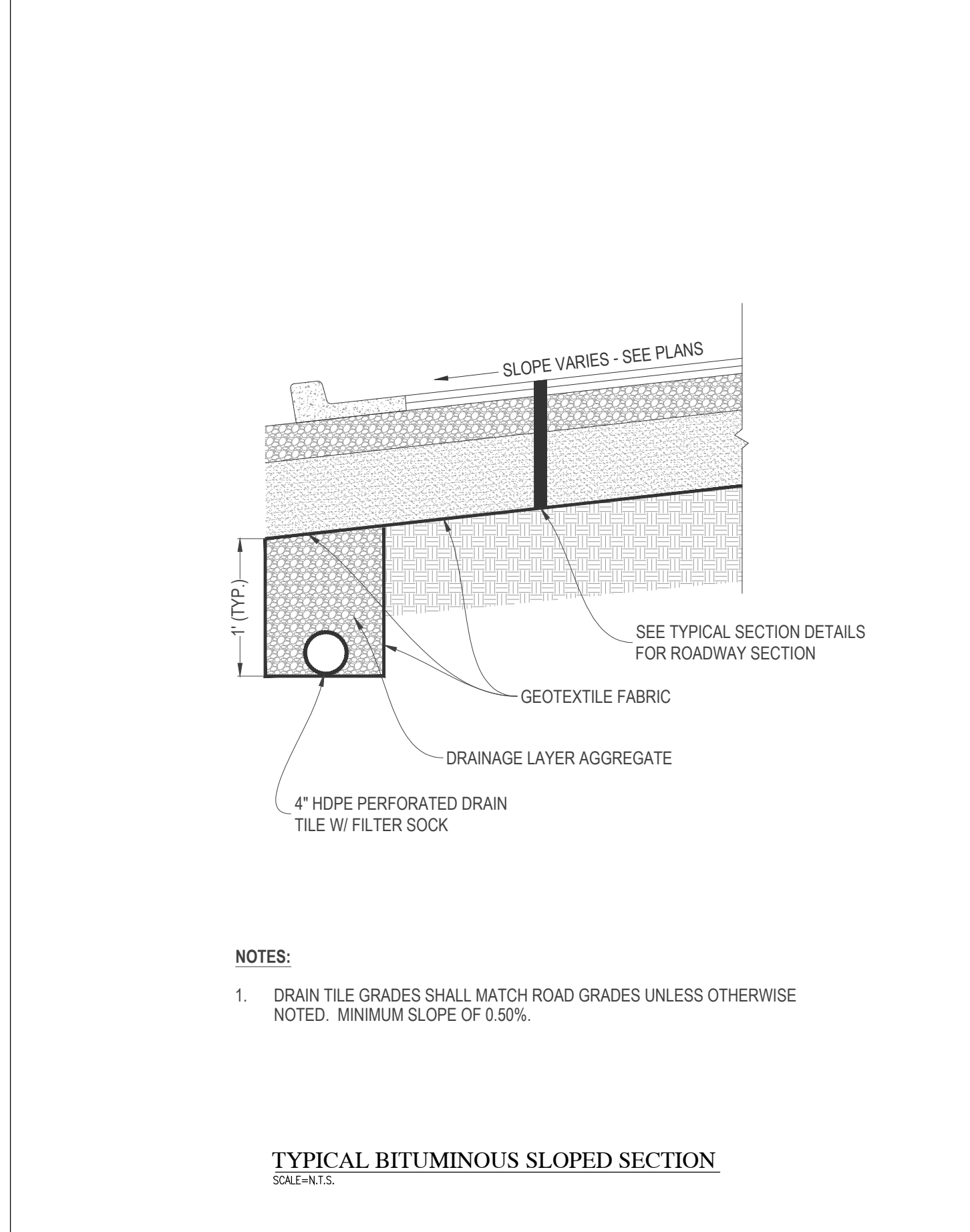
LIGHT-DUTY BITUMINOUS PAVEMENT SECTION
SCALE: N.T.S.



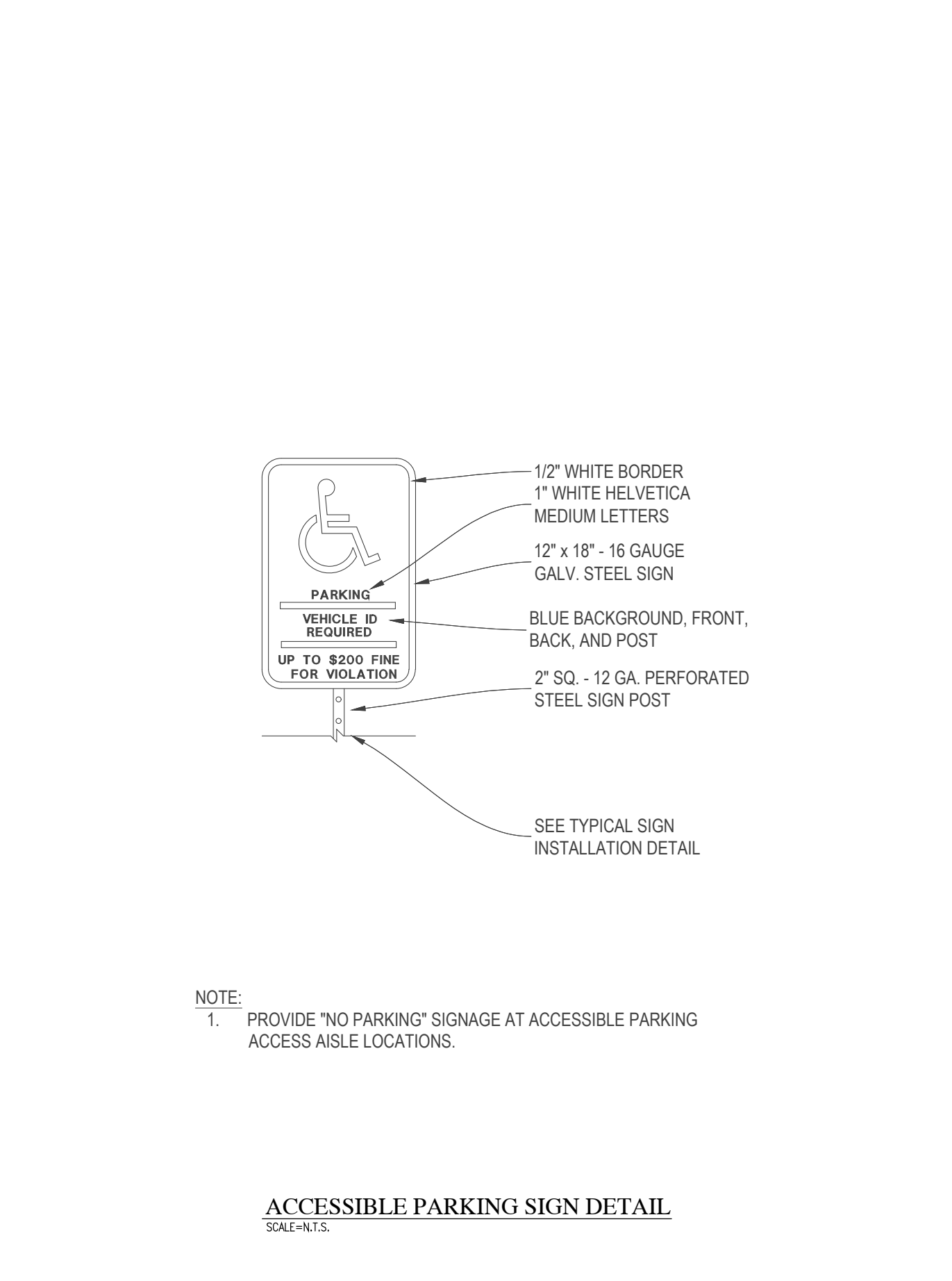
HEAVY-DUTY BITUMINOUS PAVEMENT SECTION
SCALE: N.T.S.



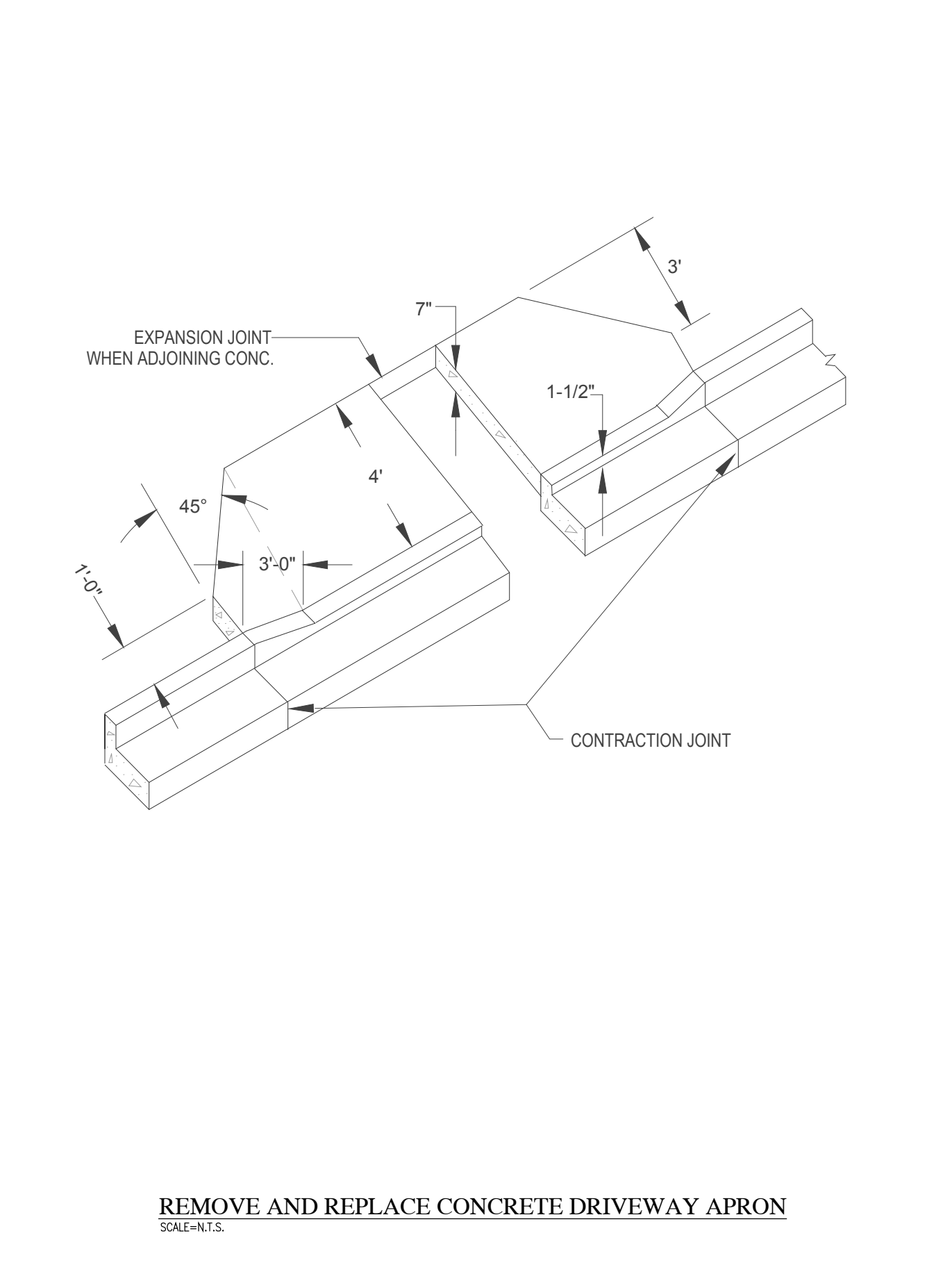
CONCRETE PAVEMENT SECTION
SCALE: N.T.S.



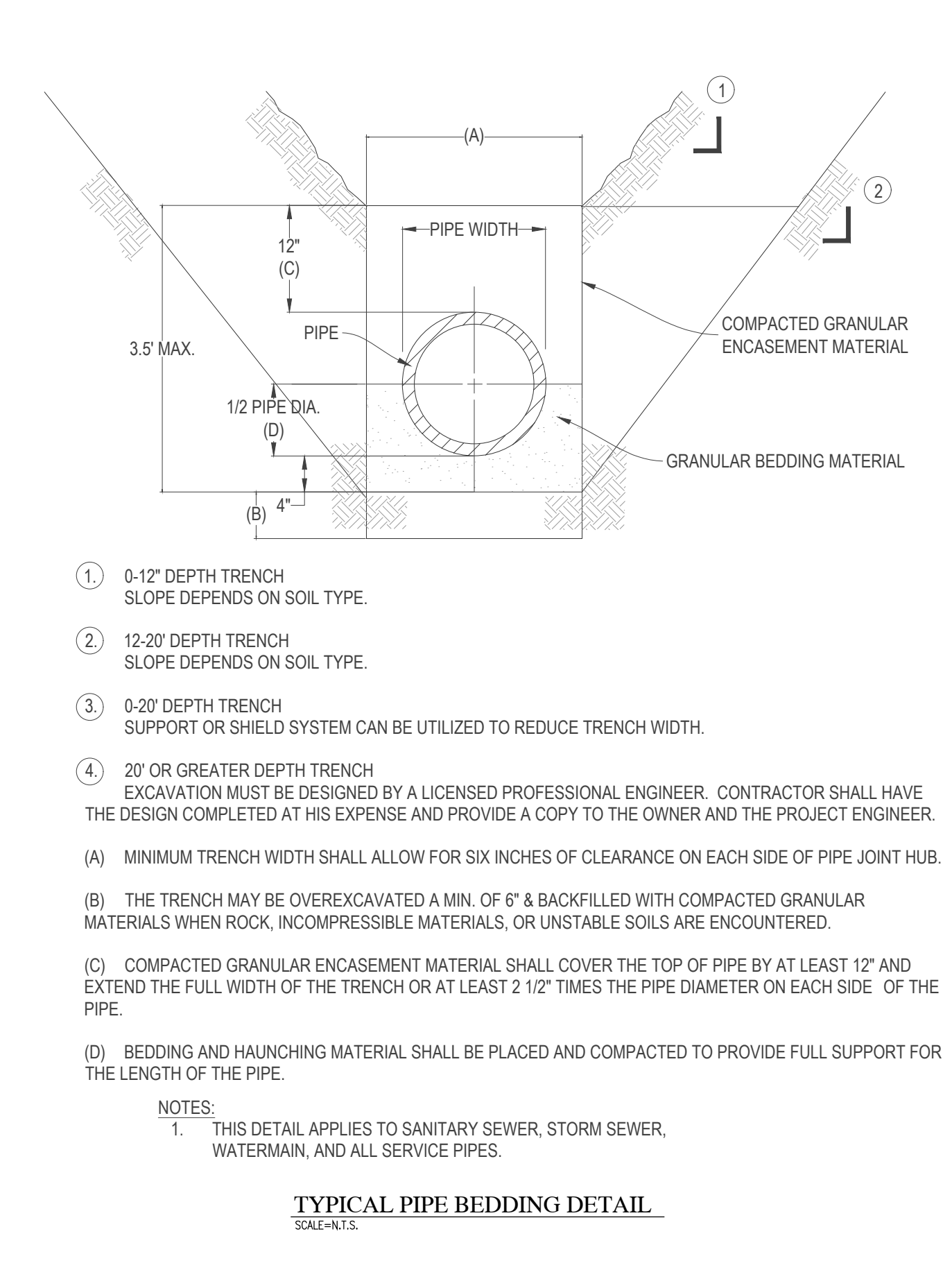
TYPICAL BITUMINOUS SLOPED SECTION
SCALE: N.T.S.



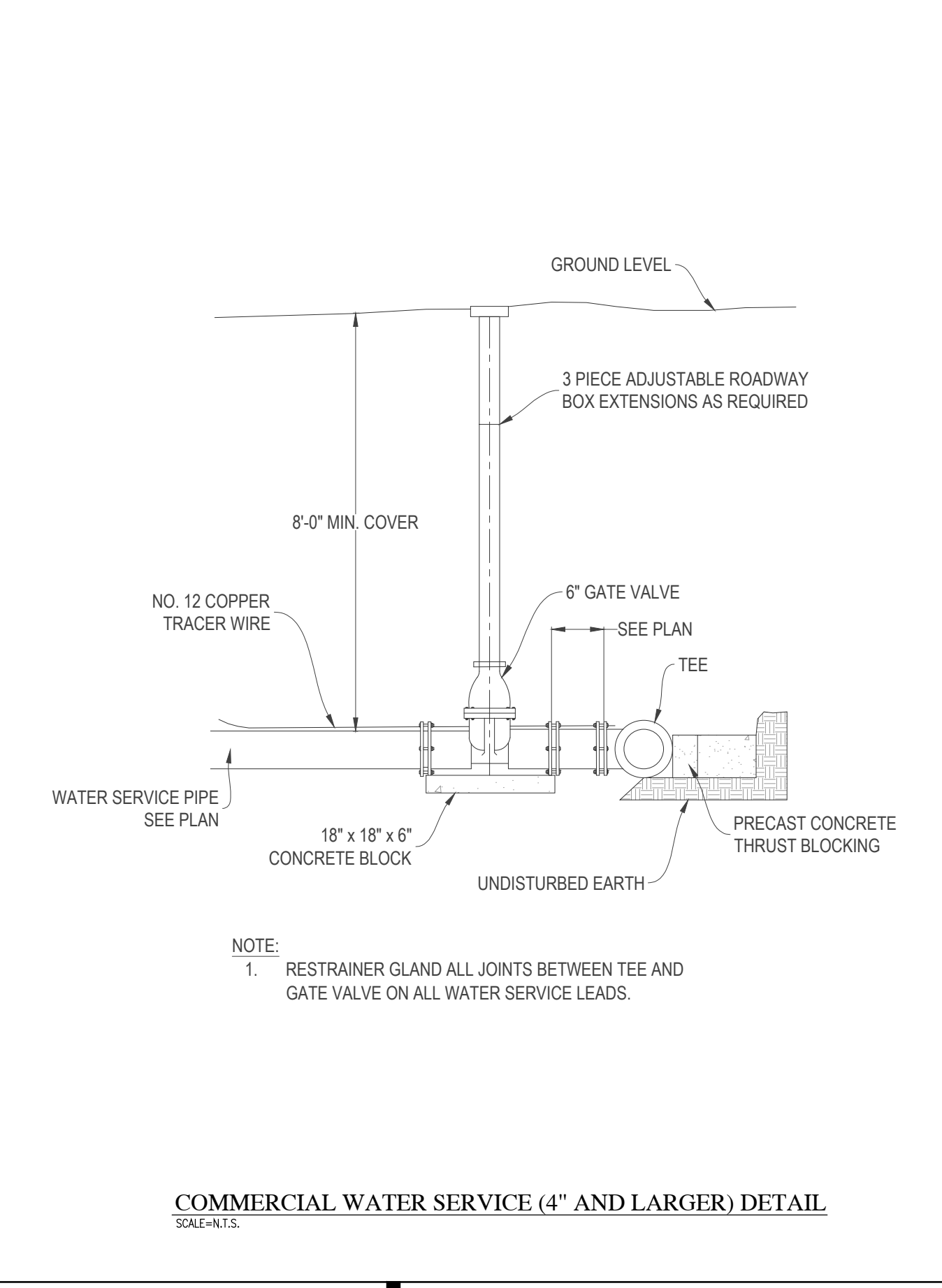
ACCESSIBLE PARKING SIGN DETAIL
SCALE: N.T.S.



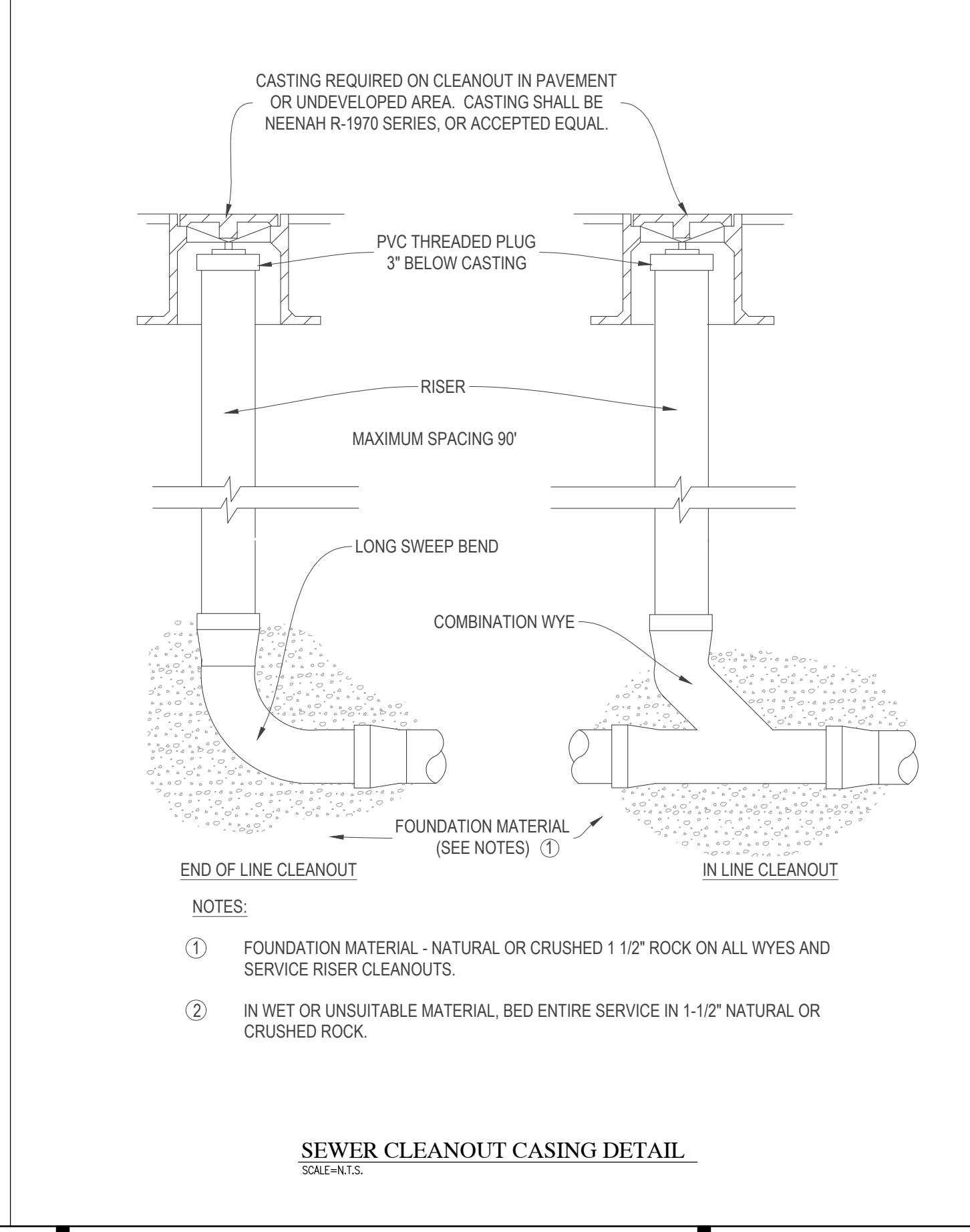
REMOVE AND REPLACE CONCRETE DRIVEWAY APRON
SCALE: N.T.S.



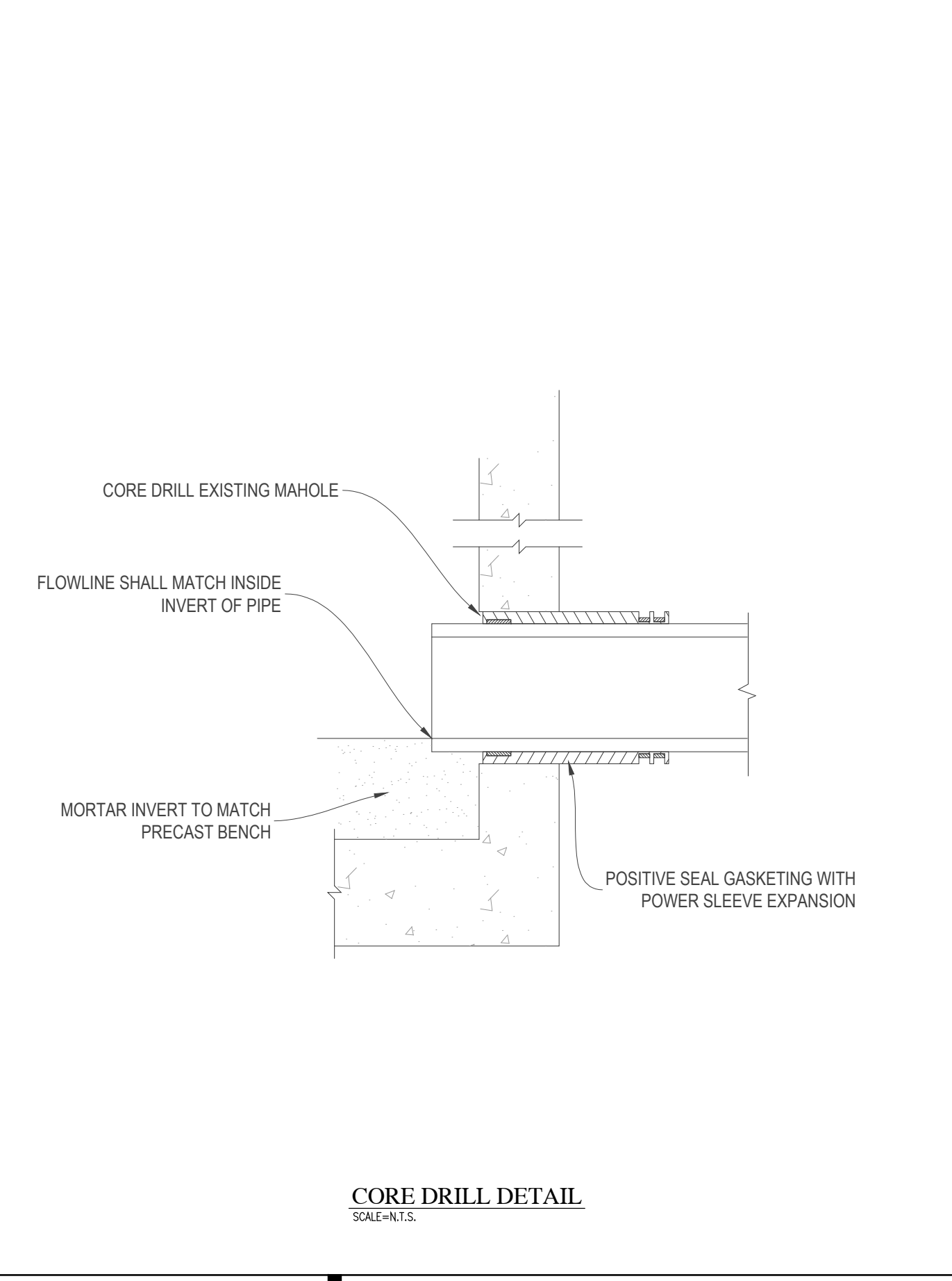
TYPICAL PIPE BEDDING DETAIL
SCALE: N.T.S.



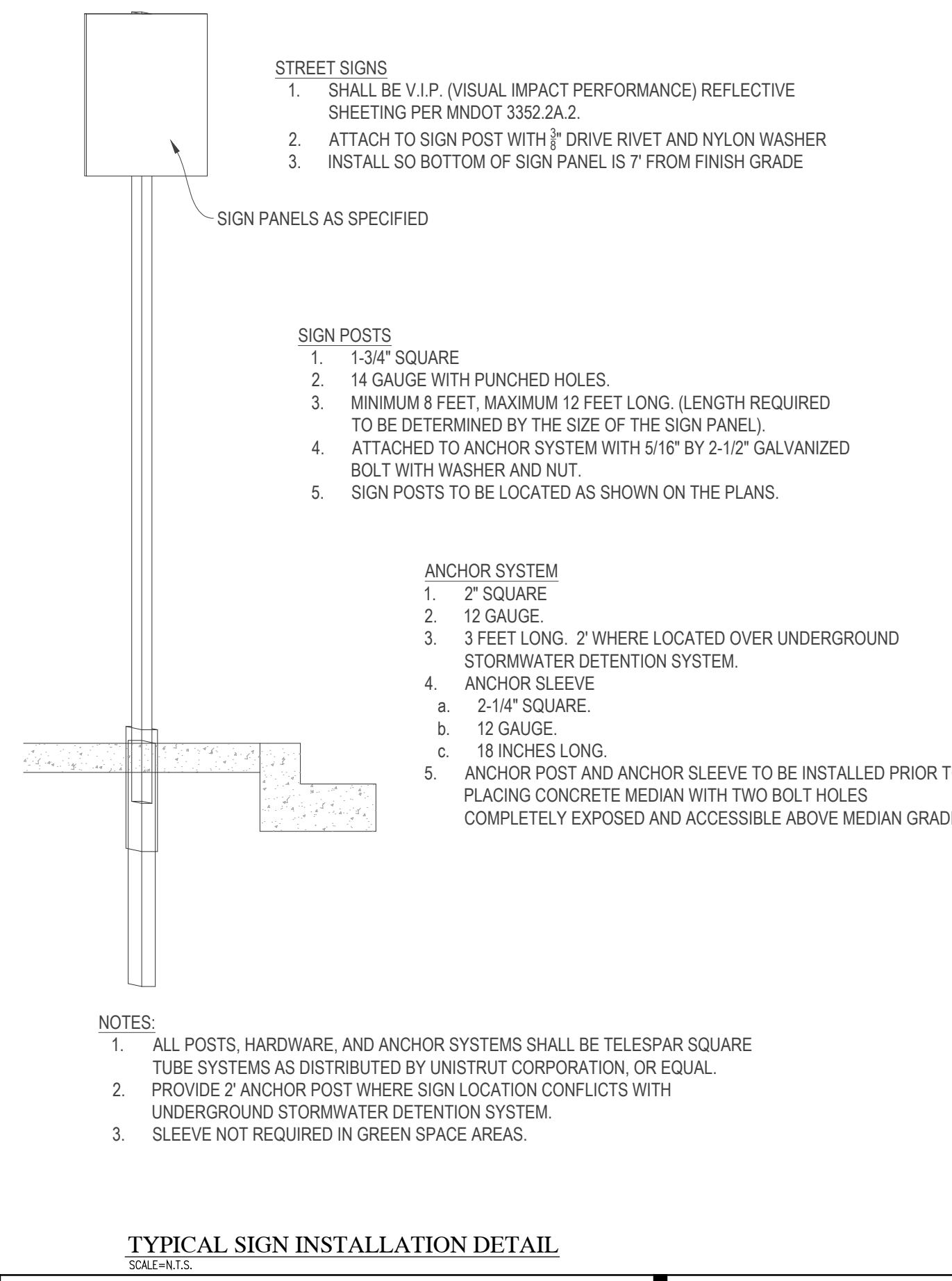
COMMERCIAL WATER SERVICE (4\"/>



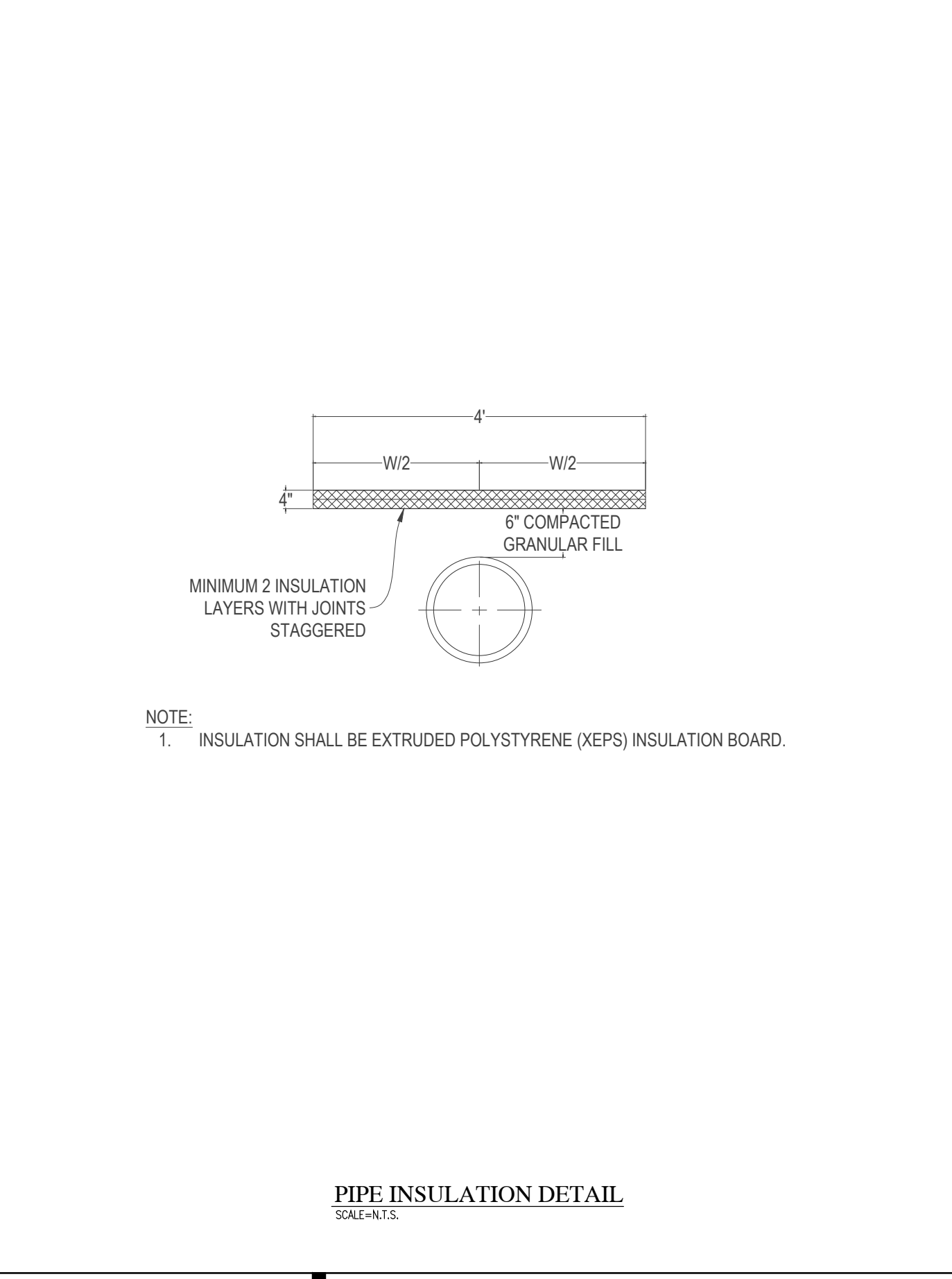
SEWER CLEANOUT CASING DETAIL
SCALE: N.T.S.



CORE DRILL DETAIL
SCALE: N.T.S.



TYPICAL SIGN INSTALLATION DETAIL
SCALE: N.T.S.



PIPE INSULATION DETAIL
SCALE: N.T.S.

JLG architects
322 1st Ave N, Suite #600
Minneapolis, MN 55401
phone: 612.746.4260
facsimile: 612.746.4754
www.jlgarchitects.com
copyright © 2020

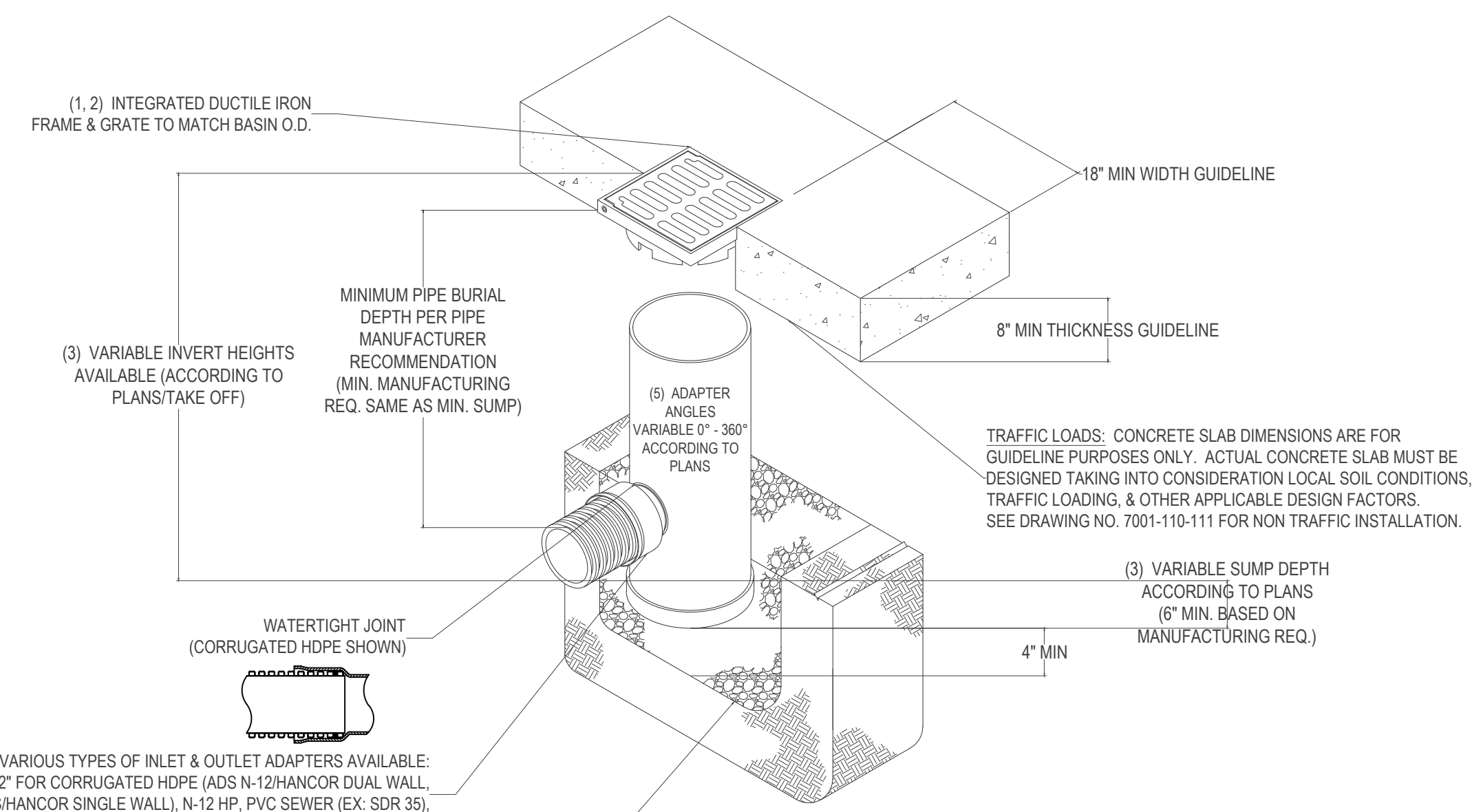
DESIGN TREE
engineering - land surveying
10000 15th Avenue S
Minneapolis, MN 55426
phone: 612.338.1100
www.design-tree.com

REVISION SCHEDULE

NO.	DESCRIPTION	DATE

LWO DEVELOPMENT, LLC
EASTGATE APARTMENTS
OWATONNA, MN

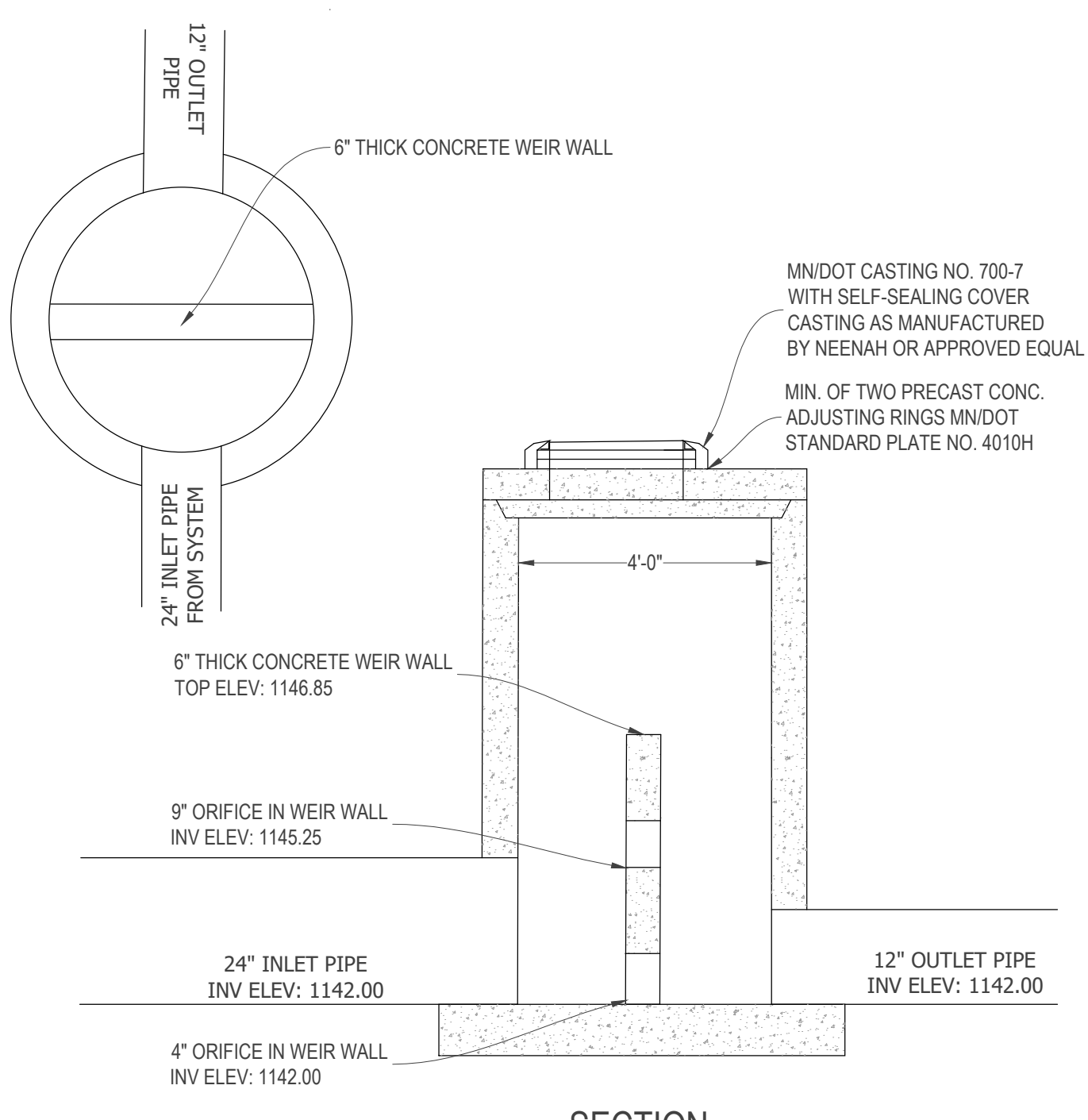
DATE: **06/19/2020**
PHASE: **CONSTRUCTION DOCUMENTS**
PROJECT: **02220002**
SHEET: **C601**
CIVIL DETAILS



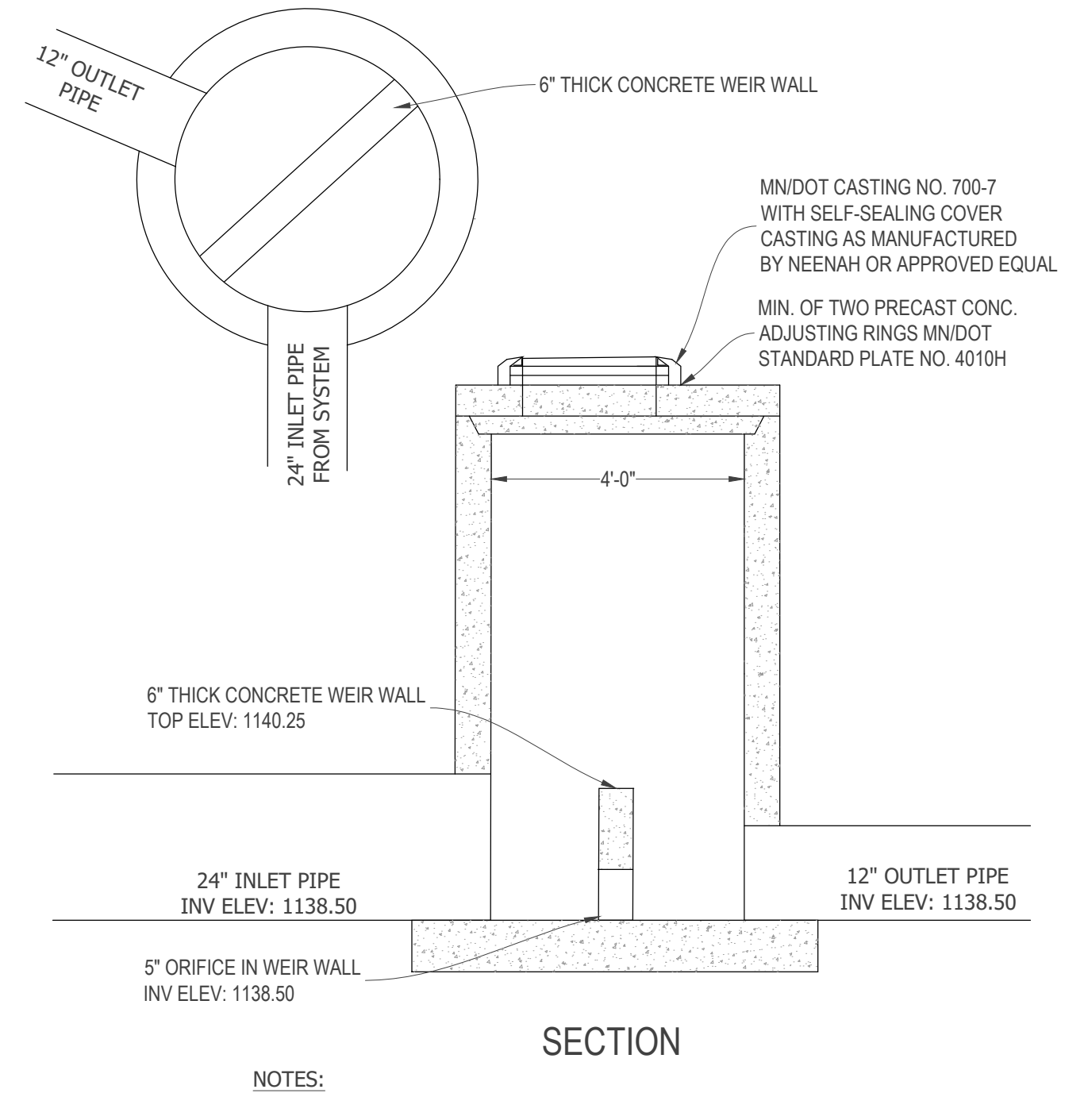
GRATE OPTIONS	LOAD RATING	PART #	DRAWING #
PEDESTRIAN	MBE'S H-10	1299CGP	7001-110-202
STRAFKOR	MBE'S H-20	1299CGS	7001-110-203
SOLID COVER	MBE'S H-20	1299CGC	7001-110-204
PEDESTRIAN BRONZE	N/A	1299CPB	7001-110-205
DOME	N/A	1299CPD	7001-110-206
DROP IN GRATE	LIGHT DUTY	1251DI	7001-110-021

- GRATES/SOLID COVER SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-90-05, WITH THE EXCEPTION OF THE BRONZE GRATE.
- FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-90-05.
- DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 84" DUE TO SHIPPING RESTRICTIONS. SEE DRAWING NO. 7001-110-095.
- DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12HANCOR DUAL WALL), N-12 HP, & PVC SEWER.
- ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360° TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012.

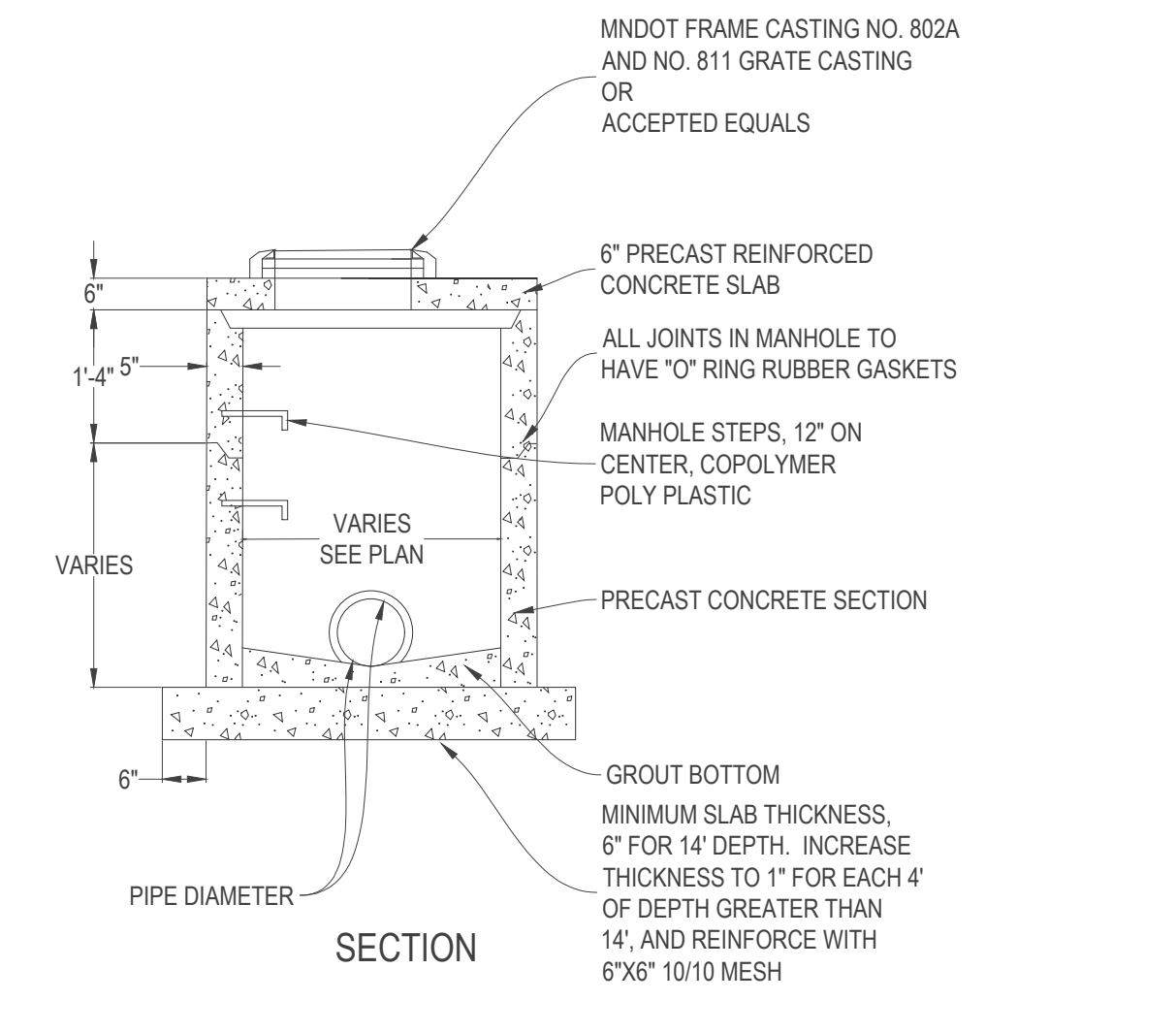
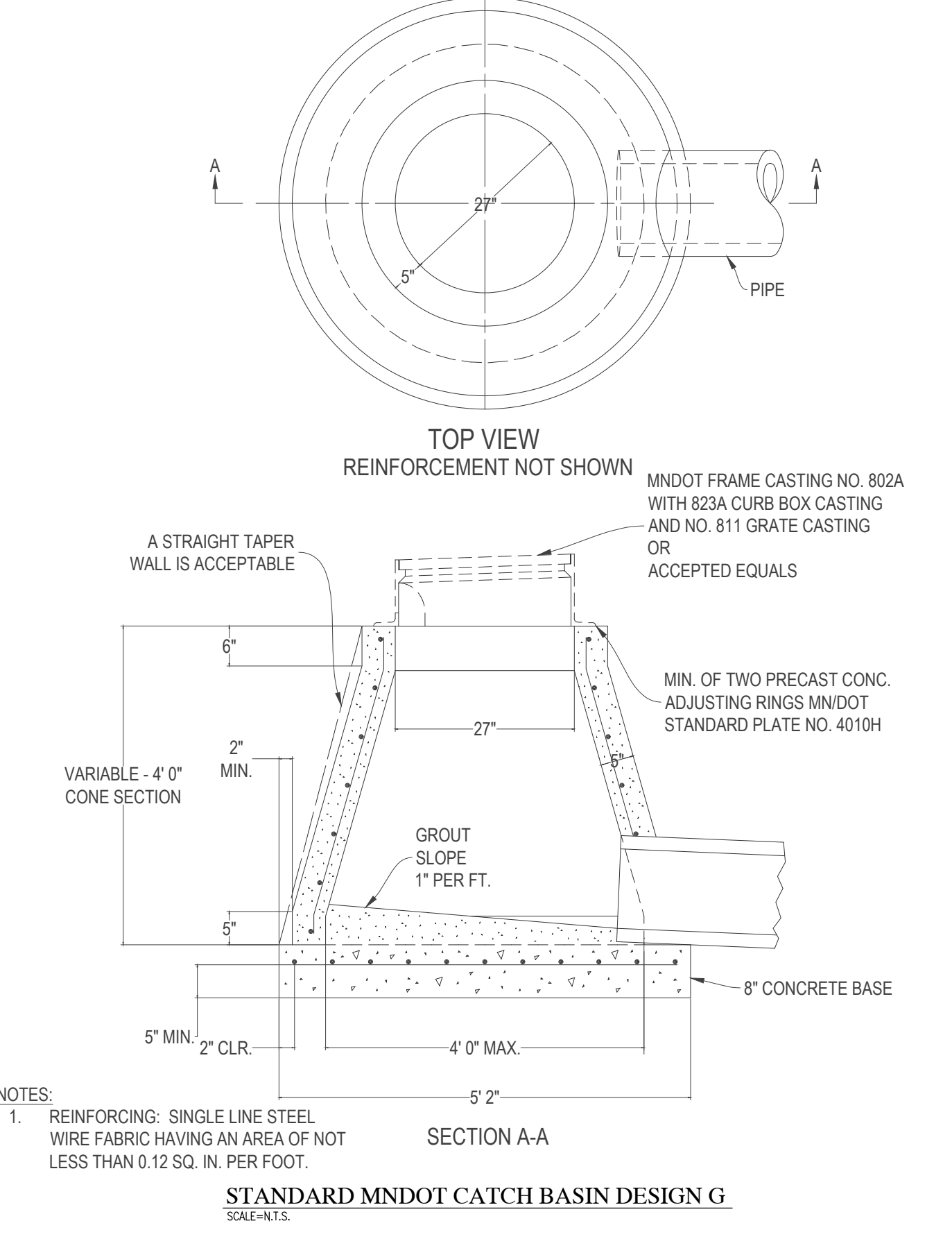
12" NYLOPLAST DRAIN BASIN
SCALE: A1:1



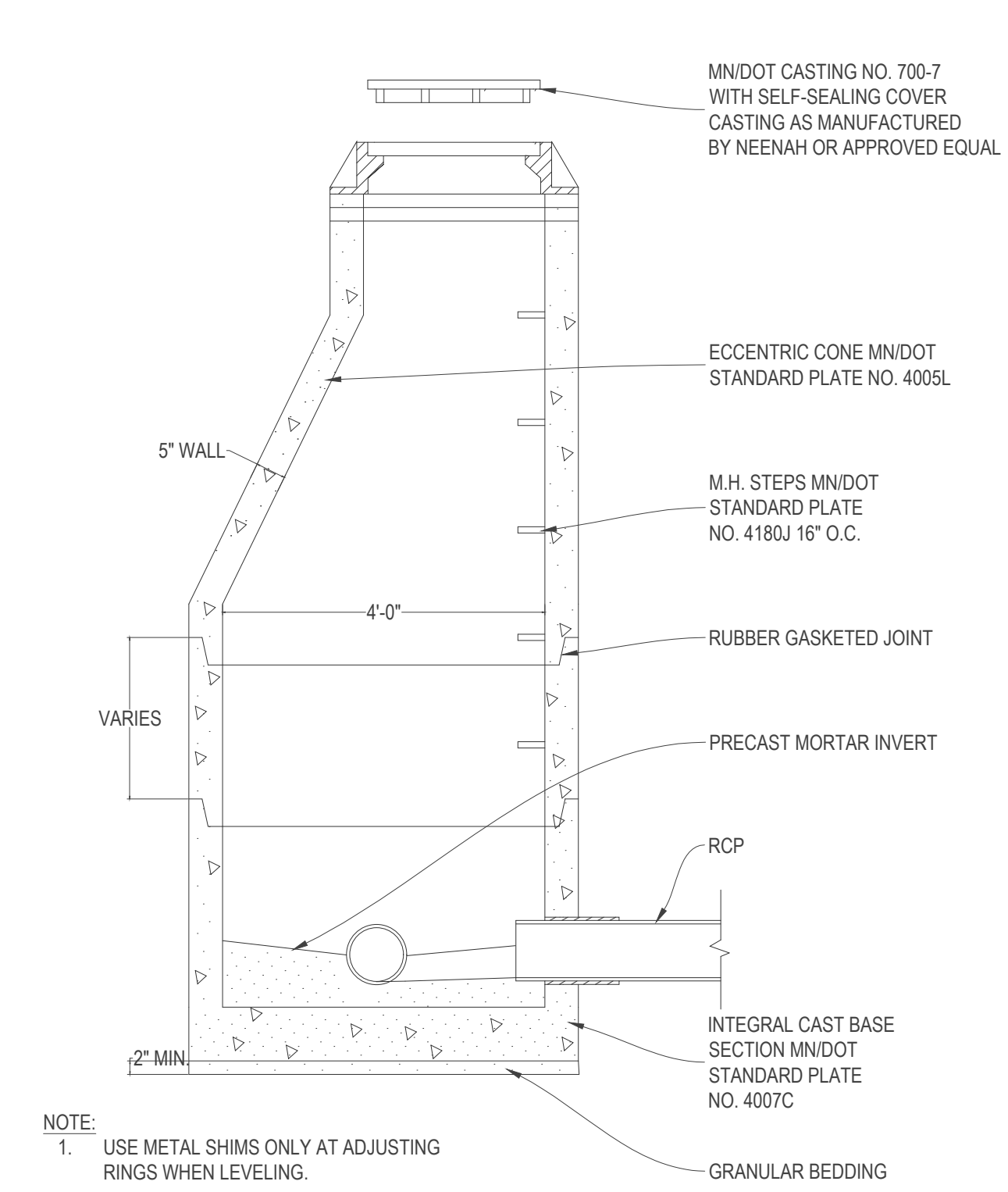
OUTLET STRUCTURE OS 1 DETAILS
SCALE: A1:1



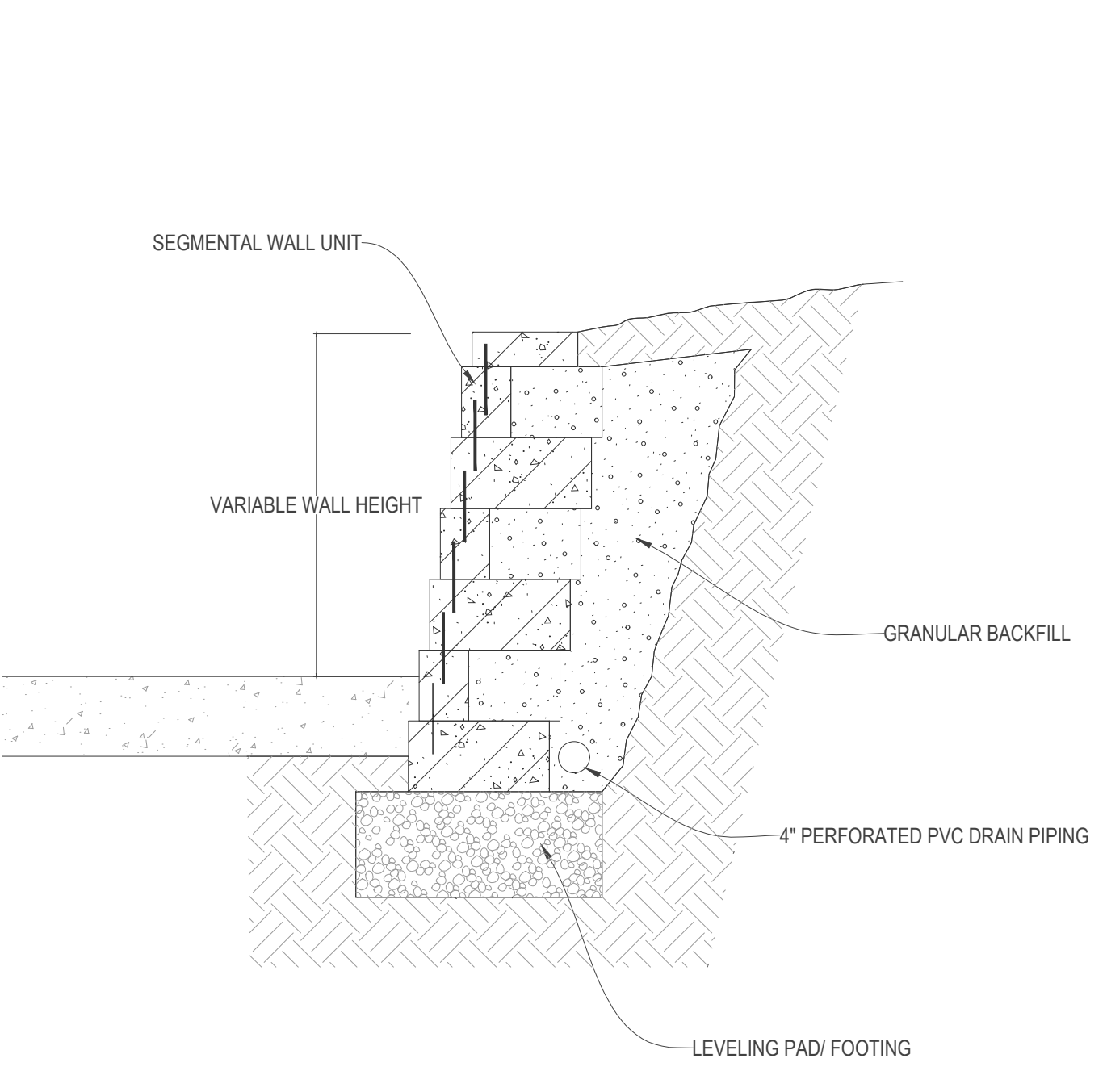
OUTLET STRUCTURE OS 2 DETAILS
SCALE: A1:1



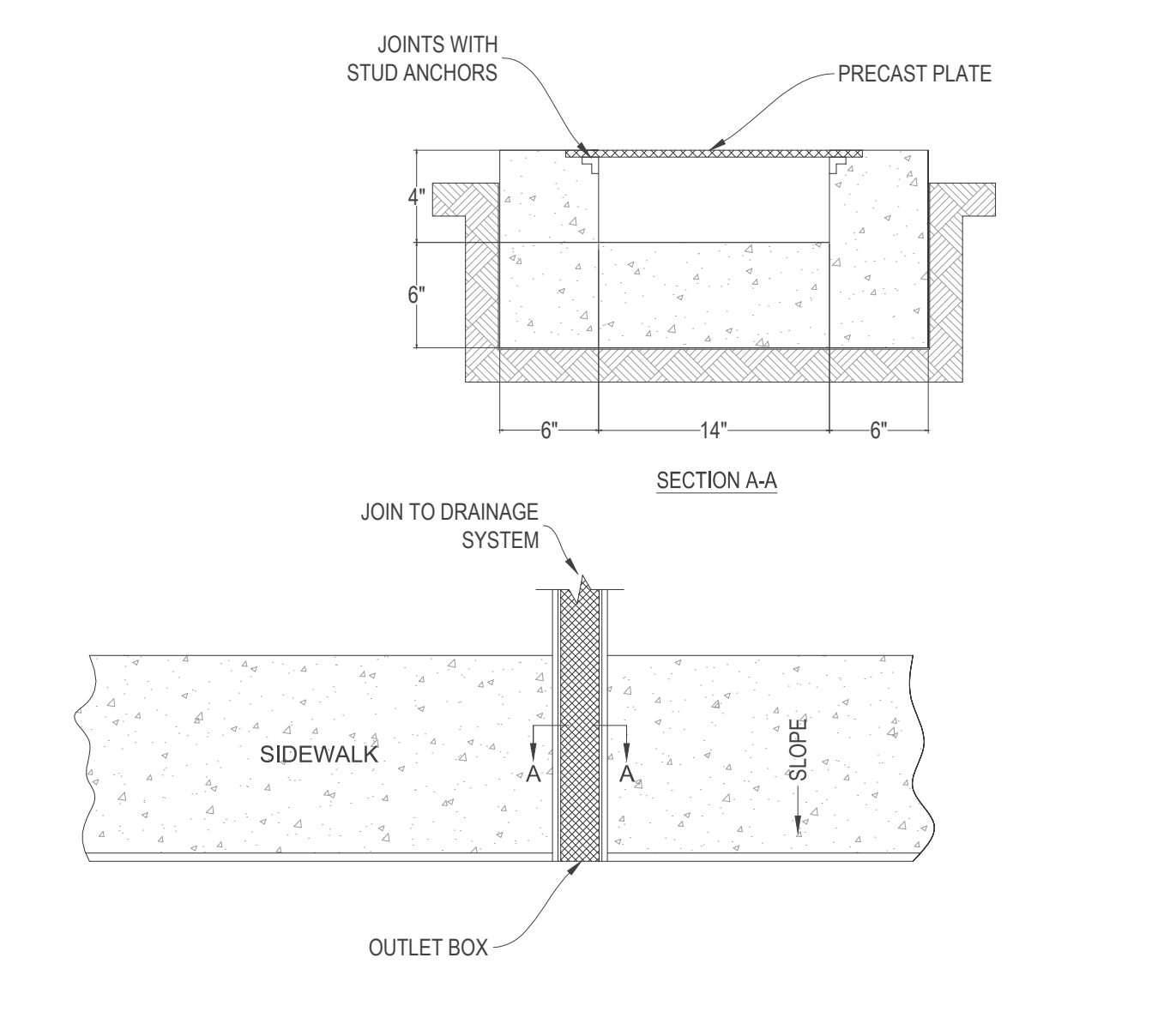
STANDARD MNDOT STORM MANHOLE/CATCH BASIN 4020
SCALE: A1:1



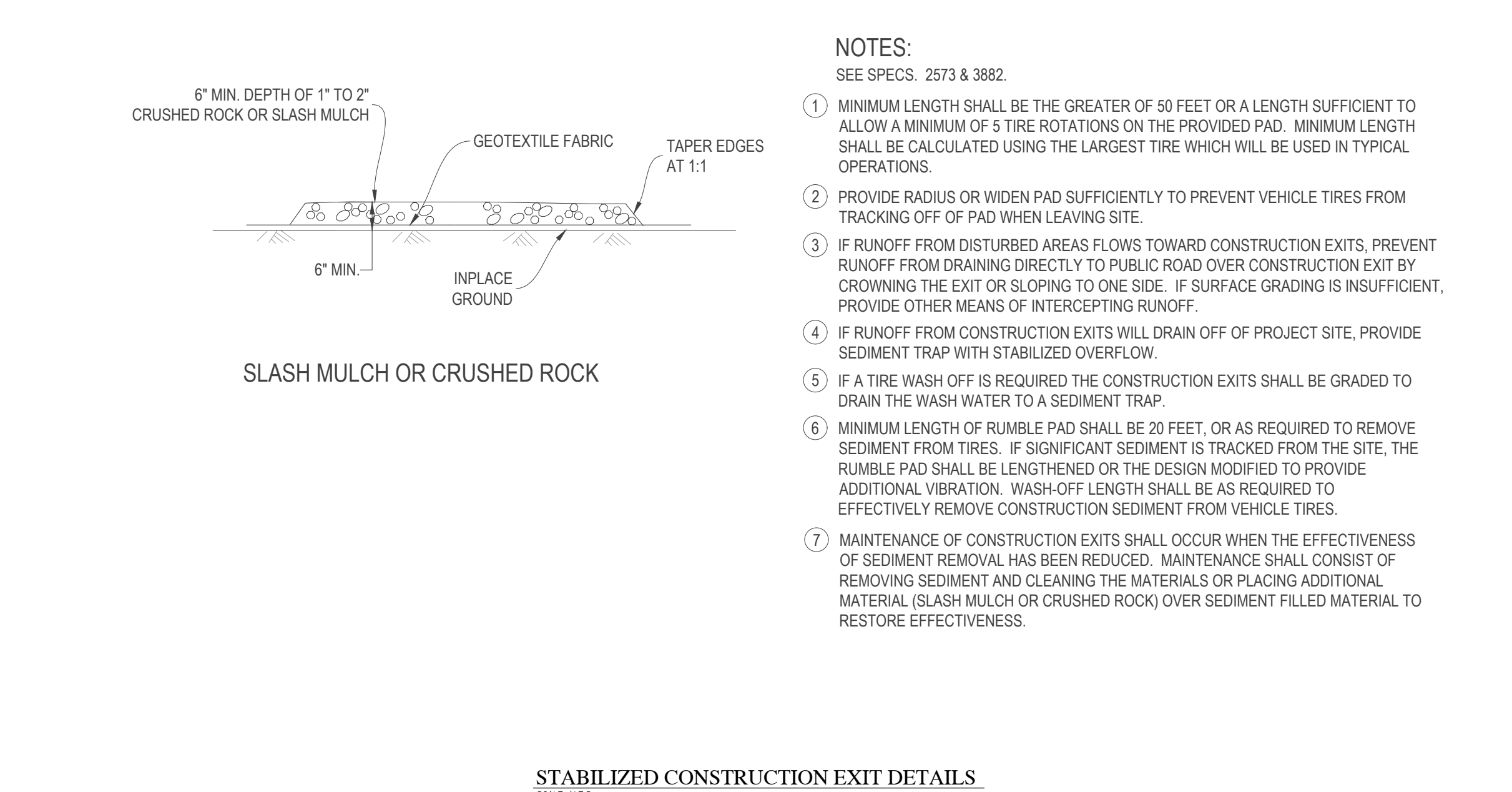
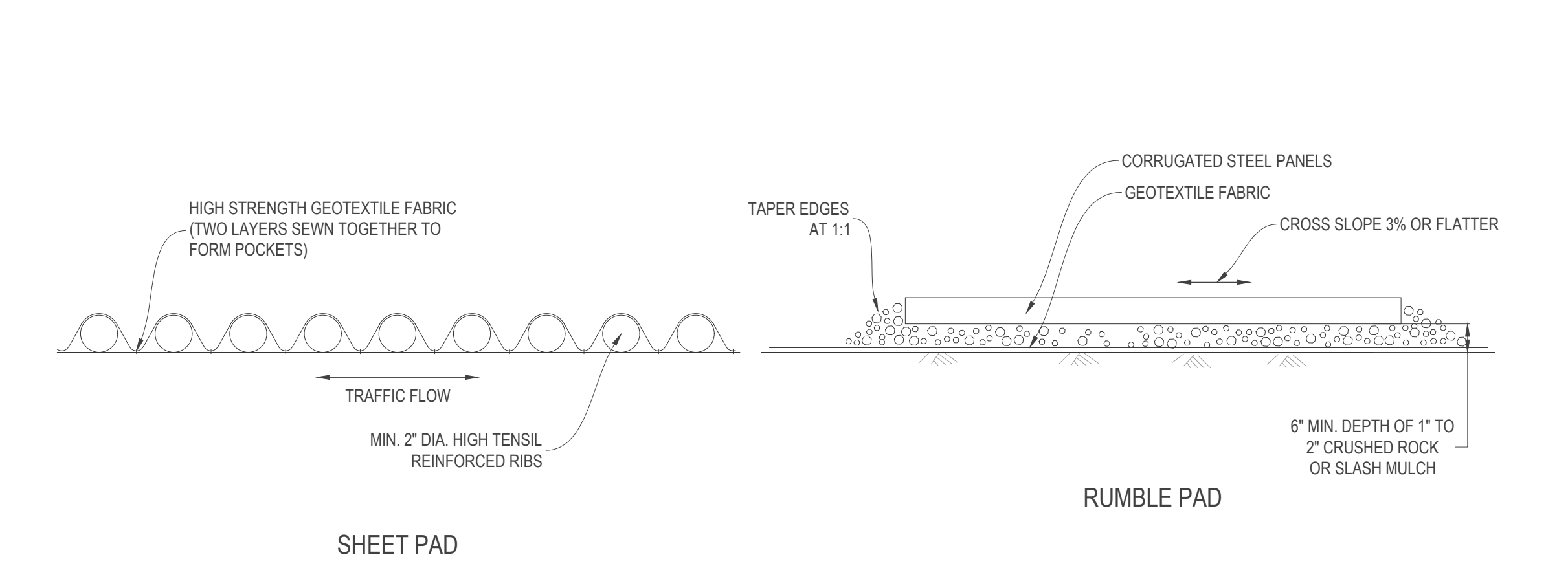
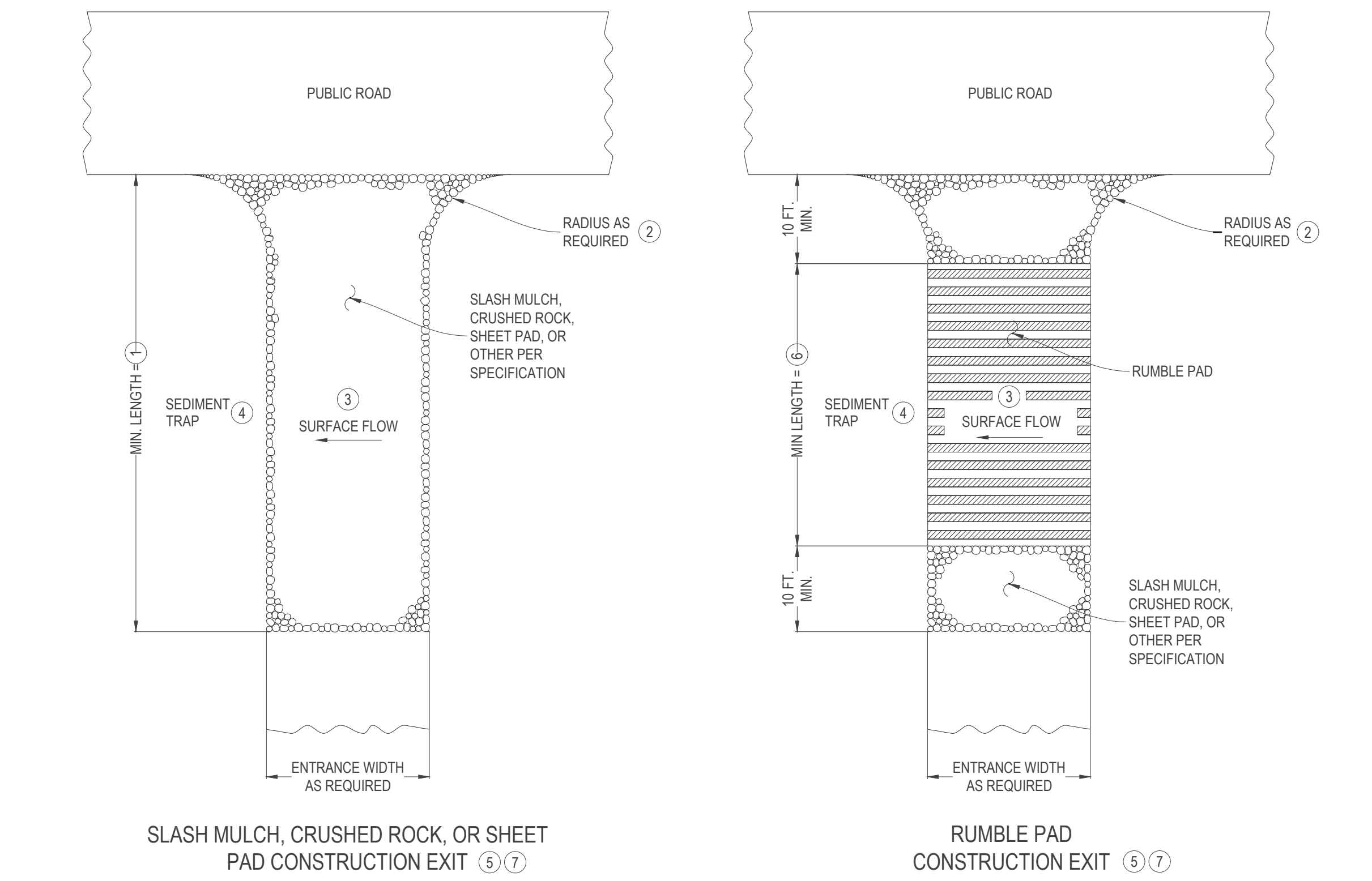
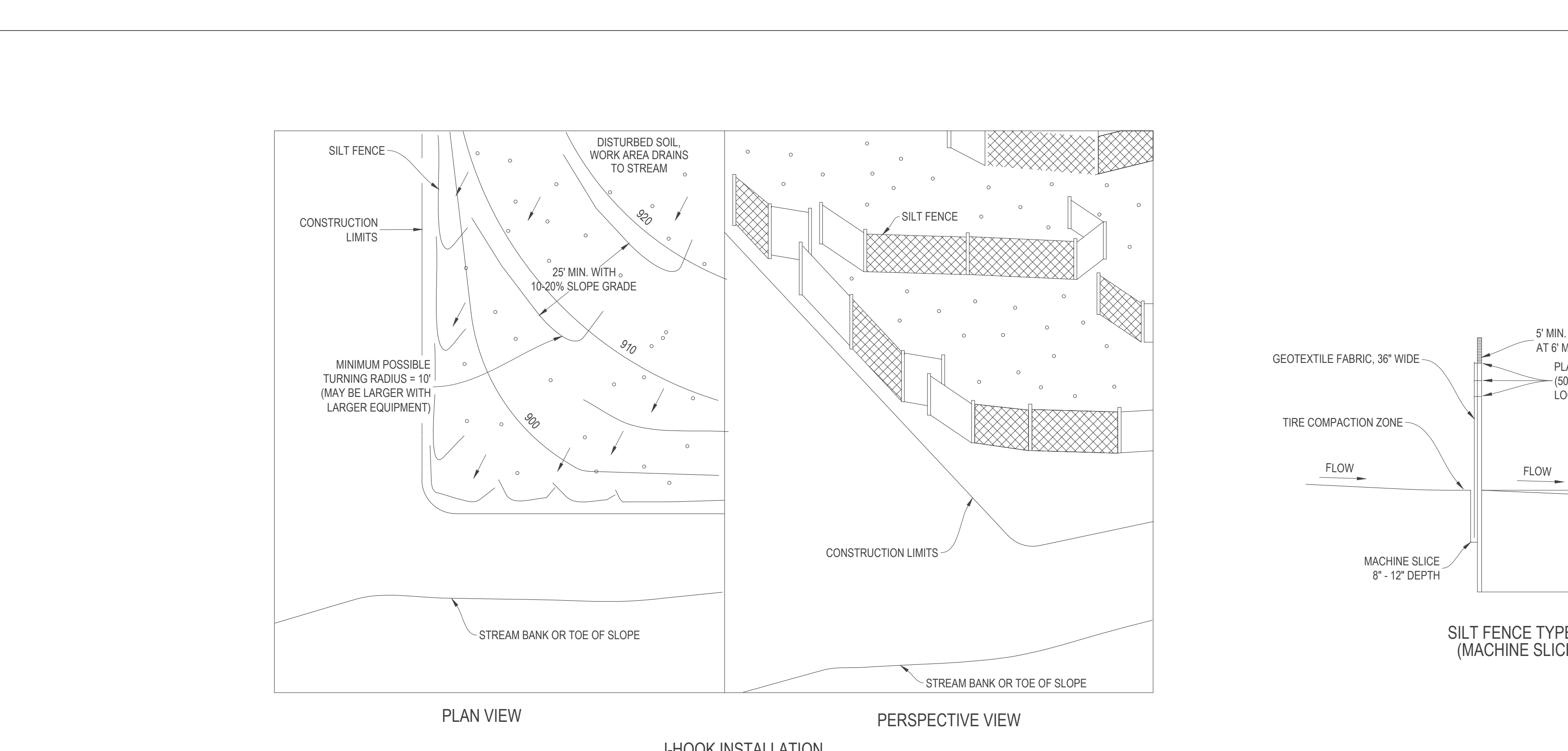
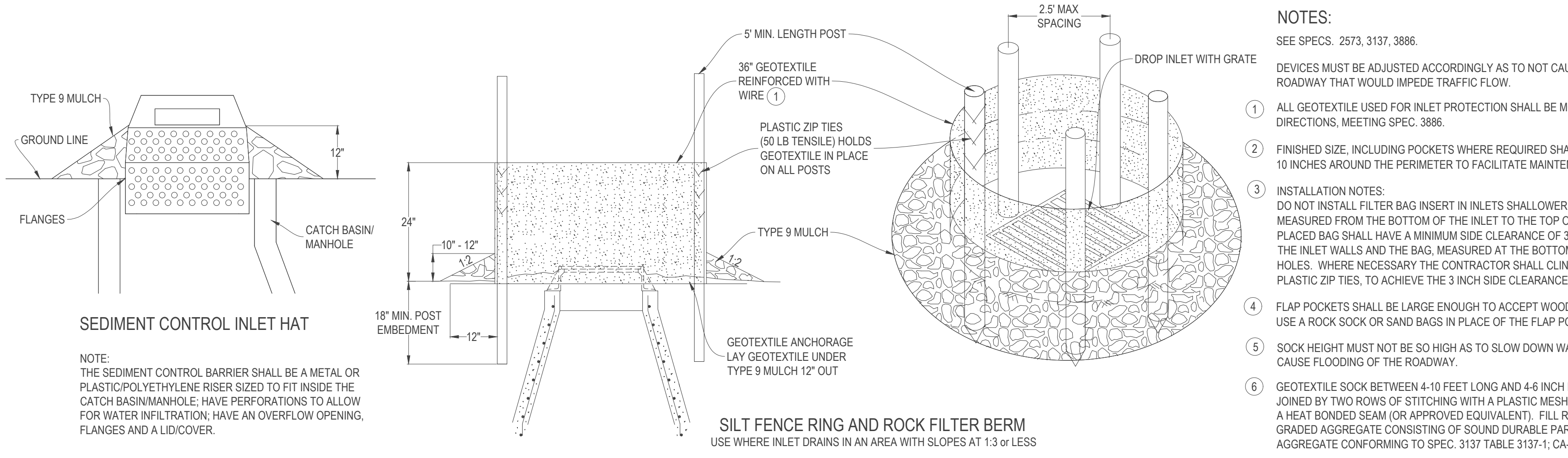
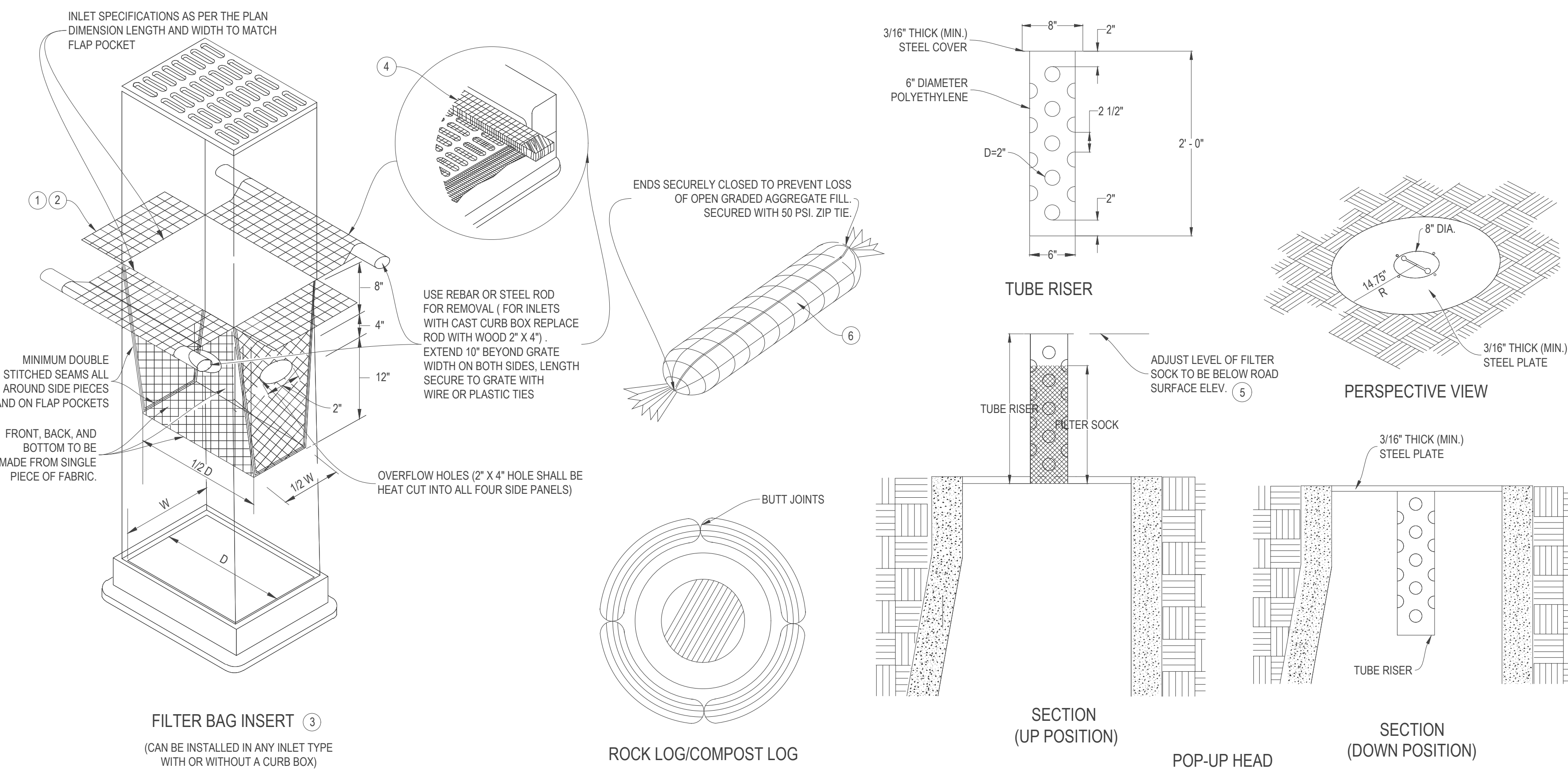
STANDARD DESIGN "F" STORM MANHOLE/CATCH BASIN
SCALE: A1:1



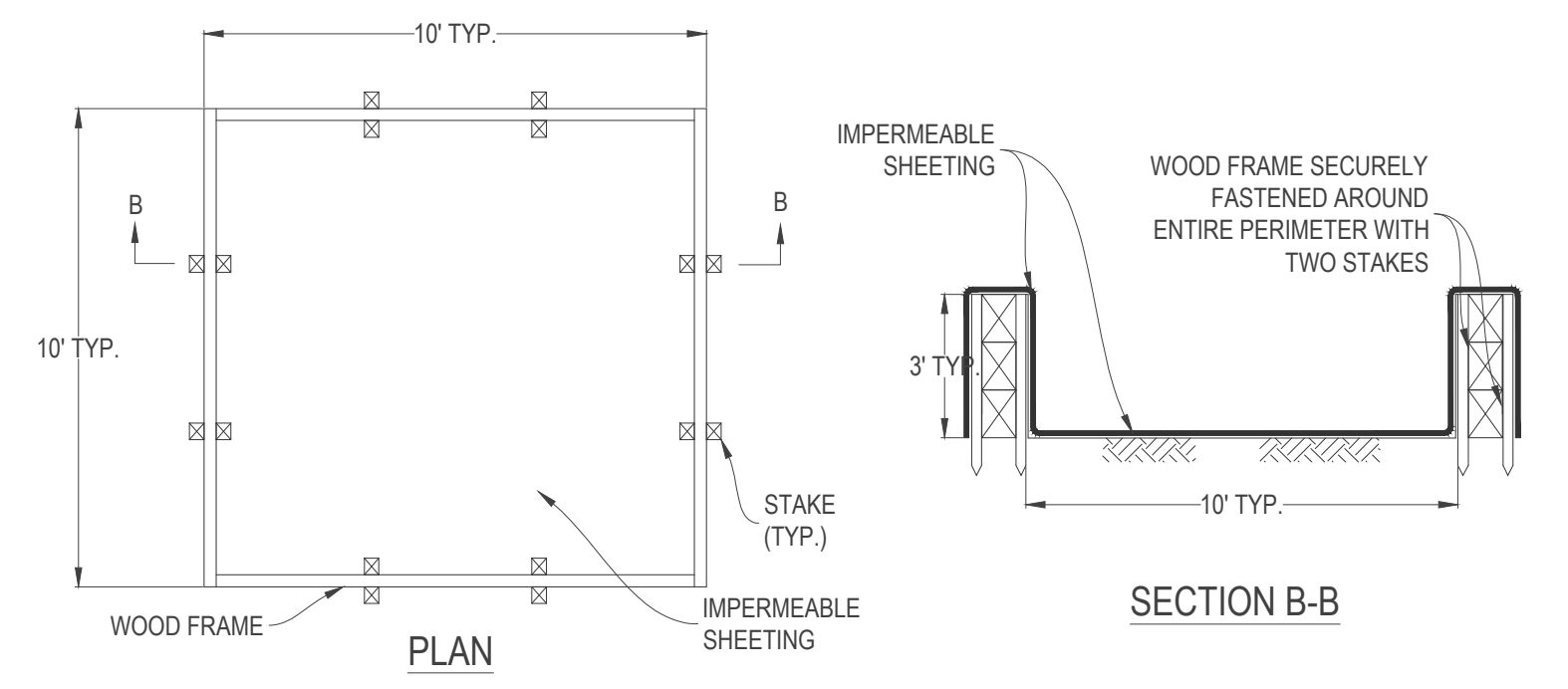
SEGMENTAL RETAINING WALL DETAIL
SCALE: A1:1



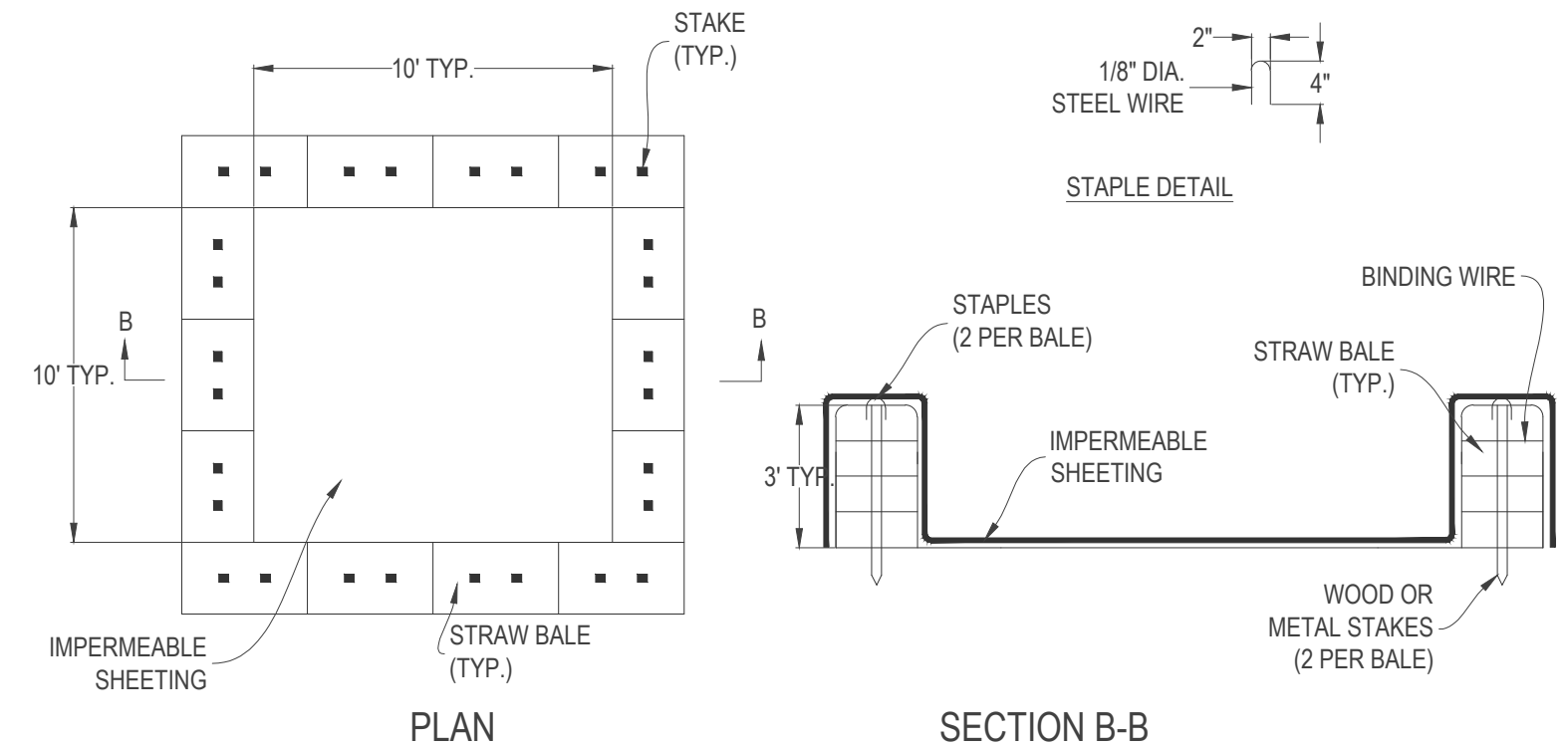
CAST IN PLACE SIDEWALK TRENCH DRAIN
SCALE: A1:1



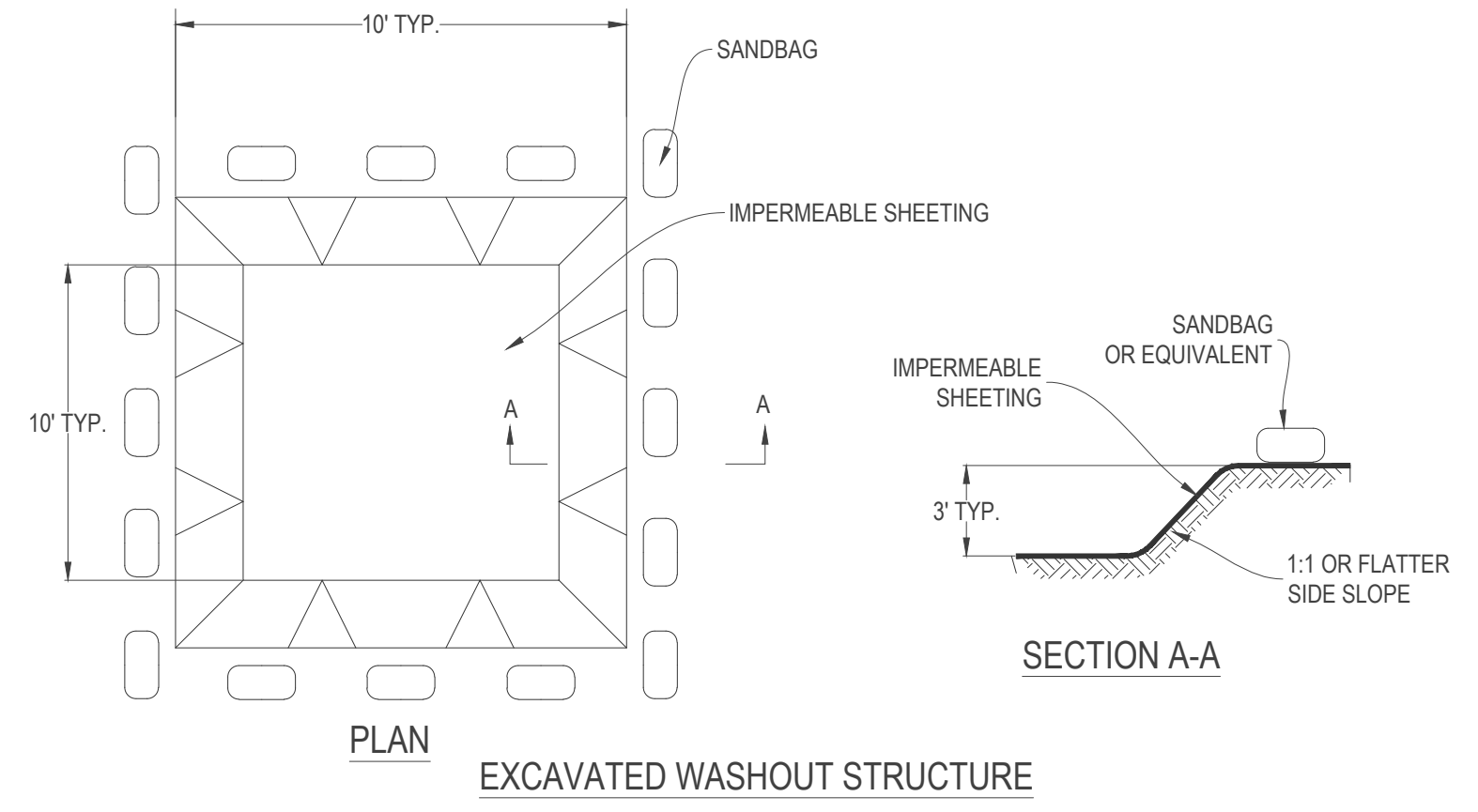
- NOTES:**
SEE SPECS. 2573 & 3882.
- MINIMUM LENGTH SHALL BE THE GREATER OF 50 FEET OR A LENGTH SUFFICIENT TO ALLOW A MINIMUM OF 5 TIRE ROTATIONS ON THE PROVIDED PAD. MINIMUM LENGTH SHALL BE CALCULATED USING THE LARGEST TIRE WHICH WILL BE USED IN TYPICAL OPERATIONS.
 - PROVIDE RADIUS OR WIDEN PAD SUFFICIENTLY TO PREVENT VEHICLE TIRES FROM TRACKING OFF OF PAD WHEN LEAVING SITE.
 - IF RUNOFF FROM DISTURBED AREAS FLOWS TOWARD CONSTRUCTION EXITS, PREVENT RUNOFF FROM DRAINING DIRECTLY TO PUBLIC ROAD OVER CONSTRUCTION EXIT BY CROWNING THE EXIT OR SLOPING TO ONE SIDE. IF SURFACE GRADING IS INSUFFICIENT, PROVIDE OTHER MEANS OF INTERCEPTING RUNOFF.
 - IF RUNOFF FROM CONSTRUCTION EXITS WILL DRAIN OFF OF PROJECT SITE, PROVIDE SEDIMENT TRAP WITH STABILIZED OVERFLOW.
 - IF A TIRE WASH OFF IS REQUIRED THE CONSTRUCTION EXITS SHALL BE GRADED TO DRAIN THE WASH WATER TO A SEDIMENT TRAP.
 - MINIMUM LENGTH OF RUMBLE PAD SHALL BE 20 FEET, OR AS REQUIRED TO REMOVE SEDIMENT FROM TIRES. IF SIGNIFICANT SEDIMENT IS TRACKED FROM THE SITE, THE RUMBLE PAD SHALL BE LENGTHENED OR THE DESIGN MODIFIED TO PROVIDE ADDITIONAL VIBRATION. WASH-OFF LENGTH SHALL BE AS REQUIRED TO EFFECTIVELY REMOVE CONSTRUCTION SEDIMENT FROM VEHICLE TIRES.
 - MAINTENANCE OF CONSTRUCTION EXITS SHALL OCCUR WHEN THE EFFECTIVENESS OF SEDIMENT REMOVAL HAS BEEN REDUCED. MAINTENANCE SHALL CONSIST OF REMOVING SEDIMENT AND CLEANING THE MATERIALS OR PLACING ADDITIONAL MATERIAL (SLASH MULCH OR CRUSHED ROCK) OVER SEDIMENT FILLED MATERIAL TO RESTORE EFFECTIVENESS.



WASHOUT STRUCTURE WITH WOOD PLANKS



WASHOUT STRUCTURE WITH STRAW BALES



EXCAVATED WASHOUT STRUCTURE

- CONSTRUCTION SPECIFICATIONS**
- LOCATE WASHOUT STRUCTURE A MINIMUM OF 50 FEET AWAY FROM OPEN CHANNELS, STORM DRAIN INLETS, SENSITIVE AREAS, WETLANDS, BUFFERS AND WATER COURSES AND AWAY FROM CONSTRUCTION TRAFFIC.
 - SIZE WASHOUT STRUCTURE FOR VOLUME NECESSARY TO CONTAIN WASH WATER AND SOLIDS AND MAINTAIN AT LEAST 4 INCHES OF FREEBOARD. TYPICAL DIMENSIONS ARE 10 FEET X 10 FEET X 3 FEET DEEP.
 - PREPARE SOIL BASE FREE OF ROCKS OR OTHER DEBRIS THAT MAY CAUSE TEARS OR HOLES IN THE LINER. FOR LINER, USE 10 MIL OR THICKER UV RESISTANT, IMPERMEABLE SHEETING, FREE OF HOLES AND TEARS OR OTHER DEFECTS THAT COMPROMISE IMPERMEABILITY OF THE MATERIAL.
 - PROVIDE A SIGN FOR THE WASHOUT IN CLOSE PROXIMITY TO THE FACILITY.
 - KEEP CONCRETE WASHOUT STRUCTURE WATER TIGHT. REPLACE IMPERMEABLE LINER IF DAMAGED (E.G., RIPPED OR PUNCTURED). EMPTY OR REPLACE WASHOUT STRUCTURE THAT IS 75 PERCENT FULL, AND DISPOSE OF ACCUMULATED MATERIAL PROPERLY. DO NOT REUSE PLASTIC LINER. WET VACUUM STORED LIQUIDS THAT HAVE NOT EVAPORATED AND DISPOSE OF IN AN APPROVED MANNER. PRIOR TO FORECASTED RAINSTORMS, REMOVE LIQUIDS OR COVER STRUCTURE TO PREVENT OVERFLOWS. REMOVE HARDENED SOLIDS, WHOLE OR BROKEN UP, FOR DISPOSAL OR RECYCLING. MAINTAIN RUNOFF DIVERSION AROUND EXCAVATED WASHOUT STRUCTURE UNTIL STRUCTURE IS REMOVED.

CONCRETE WASHOUT DETAILS
SCALE: N/A

Project Description:
The work on the project includes the demolition of existing houses/building and the construction of an apartment building along with the associated sewer and water services, and the construction of new parking areas along with the associated storm water utilities. The project is located in Owatonna, MN. The majority of underlying soils on the property are in Hydrologic Soil Group "D" and have low infiltration rates when thoroughly wet. A geotechnical investigation of the site also indicated the presence of a hydrocarbon odor (detected by human perception only) in the underlying soils. This could indicate the presence of contaminated soils, which would restrict the use infiltration BMPs for stormwater volume reduction on the site.

Receiving Waters:
All existing stormwater runoff sheet flows to the west and north to the neighboring property and the storm sewer system in the Cherry Street right-of-way. Runoff ultimately flows to the storm sewer system in the Mineral Springs Road right-of-way via sheet flow and catch basins. All stormwater runoff from proposed impervious surfaces will be captured in catch basins and roof drains and routed to a proposed stormwater detention system. Runoff from the site will be treated by a treatment BMP prior to leaving the site and entering the City's storm sewer system.

Responsible Parties:
The Owner and the Contractor are responsible co-permittees for the implementation of the SWPPP. The Contractor and Owner shall apply for the NPDES Construction General Permit within 24 hours of award of Contract. The complete application must be submitted prior to start of construction activity. The Contractor is responsible for installation, inspection, maintenance, and repair of all erosion prevention and sediment control BMPs before, during, and after active construction. The Contractor shall amend the SWPPP before beginning construction to include the chain of responsibility of all operators on the site, or if not known, the title or position of the responsible party. The Contractor is responsible for identifying a person knowledgeable and experienced in the application of erosion prevention and sediment control BMPs who will oversee the implementation of the SWPPP before and during construction until the construction project is complete, the entire site has undergone Final Stabilization, and an NOI has been submitted to the MPCA. The owner must identify who will be responsible for the long-term operations and maintenance of all permanent stormwater management systems. The Contractor is liable until final stabilization of all disturbed areas is achieved and the Notice of Termination (NOT) / Permit Modification form is submitted to the MPCA (as specified in the NPDES construction permit). Once the identity of Responsible Parties is known, the SWPPP must be amended to include this information in the area below.

Project Engineer	Owner	Contractor
Michael J. Gerber, PE Design Tree Engineering, Inc. 3339 W. St. Germain St. Suite 250 St. Cloud, MN 56301 (320) 217-5557, ext. 203 mgerber@dt-engine.com	LWO Development, LLC	TBD

SWPPP Amendments:
The Owner or Contractor must amend the SWPPP as necessary to include additional requirements, such as additional or modified BMPs that are designed to correct problems identified or address situations whenever:

- There is a change in design, construction, operation, maintenance, weather or seasonal conditions that has a significant effect on the discharge of pollutants to surface water or underground waters.
- Inspections or investigations by site owner or operators, USEPA or MPCA officials indicate the SWPPP is not effective in eliminating or significantly minimizing the discharge of pollutants to surface waters or underground waters or that the discharges are causing water quality standard exceedances.
- The SWPPP is not achieving the general objectives of minimizing pollutants in stormwater discharges associated with construction activity, or the SWPPP is not consistent with the terms and conditions of this permit.
- At any time after the permit coverage is effective, the MPCA deems necessary.

Construction Notes:
Construction shall be governed by MnDOT and City of Owatonna's Specifications, special provisions, amendments and the project specifications and detail plates. Permits and maps relating to this project's SWPPP can be found in the Project Manual. The Contractor shall keep the inspection and maintenance log and NPDES permit on-site at all time during active construction. Please refer to plans and specifications for additional SWPPP information.
Soil Compaction should be minimized and topsoil should be preserved whenever and wherever possible during construction.
All soil stock piling shall include sediment control devices and shall be placed in areas away from surface waters or natural buffers.

Special Water, Impaired Water & TMDL Implementation Plans:
The site is located within 1 mile of an impaired water as identified by the MPCA. The site is located within 1 mile of Maple Creek, which has an EPA-approved impairment for Fecal Coliform. This impairment is considered non-construction related and does not require any additional BMPs or plan review. The site is also located within 1 mile of the Straight River, which has an EPA-approved impairment for: Benthic macroinvertebrate bioassessments, Fecal Coliform, Turbidity. The discharge point of stormwater runoff from the site is not directly connected to the impaired water. All disturbed areas not actively being worked must be stabilized within 7 days. The Owner is responsible for the long term maintenance of all private storm sewer systems. Inlet protection, silt fences, final stabilization, and BMP's must be implemented prior to allowing any water runoff to be discharged off-site.

Calculations:
Area to be Disturbed = 1.60 AC
Pre-Construction Impervious Area = 0.633 AC
Post-Construction Impervious Area = 0.776 AC
Net Increase in Impervious Area = 0.143 AC

- Sequence of Construction:** NPDES Permit needed for this contract, requirements apply:
Contractor to verify that all applicable permits have been obtained and NPDES permit modification form has been submitted to MPCA prior to the start of construction.
- The Contractor must plan for and implement appropriate construction phasing, vegetation buffer strips, horizontal slope grading, and other construction practices that minimize erosion. The location of areas not to be disturbed are shown on Plans.
 - The Contractor shall be responsible for full implementation of and maintenance required by the SWPPP Narrative until the Notice of Termination is approved by the MPCA.
 - The Contractor shall construct Erosion and Sediment Control BMPs in the following construction sequence:
 - Install rock construction entrances where indicated in the Plans.
 - Install silt fence where indicated in the Plans.
 - Install silt fence around proposed infiltration and bioretention BMPs to protect soils from compaction.
 - Locate Portable toilets on flat surfaces away from drainage paths. Stake in areas susceptible to high winds.
 - Construct concrete washout area and provide signage
 - Establish Waste Control Areas
 - Construct temporary sediment basins where 5 acres or more drain to one location.
 - Construct diversions to sediment basins.
 - Rough Grade Site.
 - Leave disturbed area of site in a roughened condition to limit erosion. Temporarily stabilize areas that will be inactive for a period of 7 or more days.
 - Install storm drainage system and place inlet protection as each inlet is installed. Energy dissipation devices shall be in place and functional within 24 hours of connecting pipe outlets to surface waters.
 - Protect and repair BMPs, as necessary.
 - Perform street sweeping as needed.
 - Temporarily stabilize areas not be actively worked.
 - Site construction (Paving, Sidewalks, Buildings, etc.)
 - Final Grading.
 - Final stabilization (seeding, planting). Stabilize soil with or sod or MNDOT Seed Mix 25-151.
 - Remove temporary basins when permanent cover has reduced the acreage of disturbed soil to less than five (5) acres draining to a common location.
 - Construct stormwater infiltration basins & bioretention basins only when contributing drainage area has been constructed and fully stabilized.
 - Remove Erosion Control Devices upon site establishment in accordance with NPDES Notice of Termination.

Final Stabilization:
Final stabilization is not met until all of the following are completed.

- Stabilization by uniform perennial vegetative cover (70% density of it's expected final growth). Sod or MNDOT Seed Mixes 25-151 or 35-241 shall be used for final stabilization.
- Permanent stormwater management system is constructed, meets all requirements, and is operational.
- Drainage ditches fully stabilized.
- All temporary synthetic and structural BMPs are removed.
- Sediment from conveyance systems and sedimentation basins are cleaned out (returned to design capacity).
- Notice of Termination (NOT) is submitted to MPCA.

- Erosion Control Maintenance and Inspection:** BMP inspection and maintenance Responsible Party _____
- Inspect erosion control devices and provide routine maintenance as follows:
 - Inspect erosion control a minimum of once per week and after each rain event measuring 0.5 inches or more. Record inspections on MPCA inspection log sheet.
 - Records of each inspection and maintenance activity shall include:
 - Date and Time of Inspections
 - Name of person (s) conducting inspection
 - Findings of inspection, including recommendations for corrective actions
 - Corrective actions taken (including dates, times, and party completing maintenance activities.
 - Date and amount of all rainfall events greater than 0.5" in 24 hours
 - Documentation of changes made to the SWPPP as required by the NPDES General Stormwater Permit for Construction Activity
 - Inspections are not required where the ground is frozen.
 - Rainfall amounts must be obtained by a properly maintained rain gauge installed onsite, or by a weather station that is within one mile or by a weather reporting system.
 - any discharges that occur during the inspection (s) must be described in writing and photographed.
- Provide Maintenance for all devices as follows:
 - Silt fences and erosion control devices at storm sewer inlets shall be inspected for depth of sediment, tears, to see if fabric is securely attached to support posts or structure, and to see that posts and devices are securely in place.
 - Silt fences, erosion control devices at storm sewer inlets and other erosion control devices shall be cleaned when sediment reached 1/2 of the height of the erosion control device, within 24 hours.
 - Rock Construction Entrances shall be inspected for clogging of river rock. River rock that has become clogged with sediment shall be removed and replace with fresh river rock.
 - Repairs or replacement of all erosion control devices shall occur within 24 hours of discovery.
 - Temporary sediment basins shall be cleaned when sediment reached 1/2 of the outlet's height or half of the basins storage volume, the basin shall be drained and sediment removed within 72 hours.
 - Temporary diversion berms shall be inspected and any breaches promptly repaired.
 - Tracked sediment from construction vehicles onto public streets and paved areas (including paved areas on the construction site) shall be removed within 24 hours of discovery.
 - The bottom and side slopes of proposed storm water treatment basins shall be stabilized within 200 feet of property lines or point of discharges to any surface water, including: curb and gutter, pavement, storm sewer, swales, or other similar storm conveyance devices.
 - Removal of sediment and stabilization of surface waters shall be accomplished within 7 days of discovery.

- Pollution Prevention Management Measures**
- Storage, Handling, and Disposal of Construction Products, Materials and Wastes: The Contractor shall comply with the following to minimize the exposure to stormwater of any of the products, materials, or wastes/ Products or wastes which are either not a source of contamination to stormwater or are designed to be exposed to stormwater are not held to this requirement.
 - Building products that have the potential to leach pollutants must be under cover (e.g. plastic sheeting or temporary roofs) to prevent the discharge of pollutants or protected by a similarly effective means designed to minimize contact with stormwater.
 - Pesticides, herbicides, insecticides, fertilizers, treatment chemicals, and landscape materials must be under cover (e.g. plastic sheeting or temporary roofs) to prevent the discharge of pollutants or protected by similarly effective means designed to minimize contact with stormwater.
 - Hazardous materials, toxic waste (including oil, diesel fuel, gasoline, hydraulic fluids, paint solvents, petroleum-based products, wood preservatives, additives, curing compounds, and acids) must be properly stored in sealed containers to prevent spills, leaks or other discharge. Restricted access storage areas must be provided to prevent vandalism. Storage and disposal of hazardous waste or hazardous materials must be in compliance with Minn. R. Ch. 7045 including secondary containment as applicable.
 - Solid waste must be stored, collected and disposed of properly in compliance with Minn. R. ch. 7035.
 - Portable toilets must be positioned so that they are secure and will not be tipped or knocked over. Sanitary waste must be disposed of properly in accordance with Minn. R. ch. 7041.
 - Fueling and Maintenance of Equipment or Vehicles/Spill Prevention and Response: The Contractor shall take reasonable steps to prevent the discharge of spilled or leaked chemicals, including fuel, from any areas where chemicals or fuel will be loaded or unloaded including the use of drip pans or absorbents unless infeasible. The contractor must conduct fueling in a contained area unless infeasible. The Contractor must ensure adequate supplies are available at all times to clean up discharged materials and that an appropriate disposal method is available for recovered spilled materials. The Contractor must report and clean up spills immediately as required by Minn. Stat. §116.061, using dry clean up measures where possible.
 - Vehicle and Equipment Washing: If the Contractor washes the exterior of vehicles or equipment on the project site, washing must be limited to a defined area of the site. Runoff from the washing area must be contained in a sediment basin or other similarly effective controls an waste from the washing activity must be properly disposed of.
 - The Contractor must properly use and store soaps, detergents, or solvents.
 - No engine idling is allowed on site.
 - Concrete and other washouts waste: The Contractor must provide effective containment for all liquid and solid wastes generated by washout operations (concrete, stucco, paint, form release oils, curing compounds and other construction materials) related to the construction activity. The liquid and solid washout wastes must not contact the ground, and the containments must be designed so that it does not result in runoff from the washout operations or areas. Liquid and solid wastes must be disposed of properly and in compliance with MPCA rules. A sign must be installed adjacent to each washout facility that requires site personnel to utilize the proper facilities for disposal of concrete and other washout wastes.

Dewatering and Basin Draining:
Dewatering or basin draining that may have turbid or sediment laden discharge water must be discharged to a temporary or permanent sedimentation basin on the project site whenever possible. Discharge from the temporary or permanent sedimentation basin must be visually checked to ensure adequate treatment is obtained in the basin and nuisance conditions, impacts to wetlands, and erosion in receiving channels or on downslope properties will not result from the discharge. Adequate sedimentation control measures are required for discharge water that contains suspended solids.
If using filters with backwash water, either haul the backwash water away for disposal, return the backwash water to the beginning of the treatment process, or incorporate the backwash water into the site in a manner that does not erode into runoff.

Timing of BMP Installation:
The Erosion and Sediment Control BMPs shall be installed as necessary to minimize erosion from disturbed surfaces and capture sediment on site and shall meet the NPDES permit Part IV construction activity requirements. Perimeter controls shall be placed prior to the start of any construction. All disturbed areas not actively being worked must be stabilized within 7 days.

Storm Water Pollution Prevention Plan:
The Permittees must implement the entire SWPPP and the requirements of the NPDES permit. The BMPs identified in the SWPPP and in the permit must be selected, installed and maintained in an appropriate and functional manner that is in accordance with manufacturer specifications and accepted engineering practices.

Temporary Sediment Basins:
Project is not required to provide Temporary Sediment Basins for construction.

Future Operation and Maintenance (O&M):
The owner shall be responsible for performing future operations and maintenance of the permanent stormwater management systems on the property.

CONTACTS		
AGENCY	NAME	PHONE NUMBER
Shower County	STEELE COUNTY SWCD	(507) 451-6767
DNR Waters	John Hensch	(218) 739-9238 ext. 232
ACC	St. Paul Office	(651) 292-5375
State Duty Officer	MPCA	(800)422-0798
SWPPP Designer	Mike Gerber, PE	(320) 227-0202
Erosion Control Review	Jeremy C. Anderson, PE	(320) 762-1269 ext. 104
Erosion Control Supervisor	TBD	

LOCATION OF SWPPP REQUIREMENTS		
DESCRIPTION	TITLE	SHEET # OR SPECIFICATION SECTION
RECEIVING SURFACE WATER	City of Owatonna Storm Sewer	C301 - C401
Final Stabilization	Erosion Control Plan	C501
Drainage Plans	Site Grading and Utility Plan	C301 - C304
Drainage Details	Details	C601 - C604
Erosion Control Sheets	Erosion Control Plan	C501
Erosion Control Details	Details	C601 - C604
Erosion & Sediment Control Quantities	Erosion Control Plan	C501
Existing & Proposed Drainage Maps	Final Stormwater Management Study	Project Manual