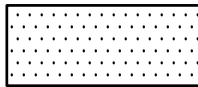




SYMBOL LEGEND

-  REMOVE AND DISPOSE OF EXISTING BITUMINOUS PAVEMENT SECTION
-  REMOVE AND DISPOSE OF EXISTING CONCRETE PAVEMENT SECTION
-  APPROXIMATE PAVEMENT CORE/BORING LOCATION SEE PROJECT GEOTECHNICAL REPORT

KEY NOTES

- ① SAWCUT, REMOVE, AND DISPOSE OF BITUMINOUS PAVEMENT.
- ② REMOVE AND DISPOSE OF CONCRETE PAVEMENT.
- ③ REMOVE AND DISPOSE OF CONCRETE CURB AND GUTTER.
- ④ DEMOLISH AND DISPOSE OF BUILDING, FOOTINGS, AND ANY RELATED INFRASTRUCTURE ITEMS. DEMOLITION AND DISPOSAL SHALL BE IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REQUIREMENTS. INCLUDES BUT NOT LIMITED TO ASBESTOS REMOVAL.
- ⑤ ABANDON EXISTING WATER WELL IN ACCORDANCE WITH MINNESOTA DEPARTMENT OF HEALTH REQUIREMENTS.
- ⑥ REMOVE EXISTING GAS AND ELECTRIC SERVICE. COORDINATE WITH UTILITY PROVIDER.
- ⑦ CLEAR AND GRUB EXISTING TREES, STUMPS, AND ROOTS.

DEMOLITION NOTES

1. Contractor shall verify all existing utility locations.
2. The location of the existing septic is unknown. The contractor shall locate and remove the septic system in accordance with state and County requirements.
3. It is the responsibility of the Contractor to perform or coordinate all necessary utility demotions and relocations from existing utility locations to all onsite amenities and buildings. These connections may include, but are not limited to, water, sanitary sewer, cable tv, telephone, gas, electric, site lighting, etc.
4. 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.
5. Sawcut along the edges of pavements, sidewalks, and curbs to remain. Unless otherwise indicated, concrete removals shall extend to the nearest existing joint.
6. All construction shall be performed in accordance with state and local standard specifications for construction.
7. If tree removal occurs during the active oak wilt season, caution is needed to prevent the introduction of oak wilt. If stumps are not removed at the same time as the tree, they must be painted with a wound sealant of latex paint.

PRELIMINARY NOT FOR CONSTRUCTION

Client:

Project Title:

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Thomas J. Last
First M. Last, P.E.

Date: 08.13.25 Lic. No.: 25520

Rev.	Date	Description
	08.13.25	City Comments

Project #: 12256081.000
 Drawn By: TRK
 Checked By: TJH
 Issue Date: 08.13.25
 Sheet Title:

DEMOLITION PLAN

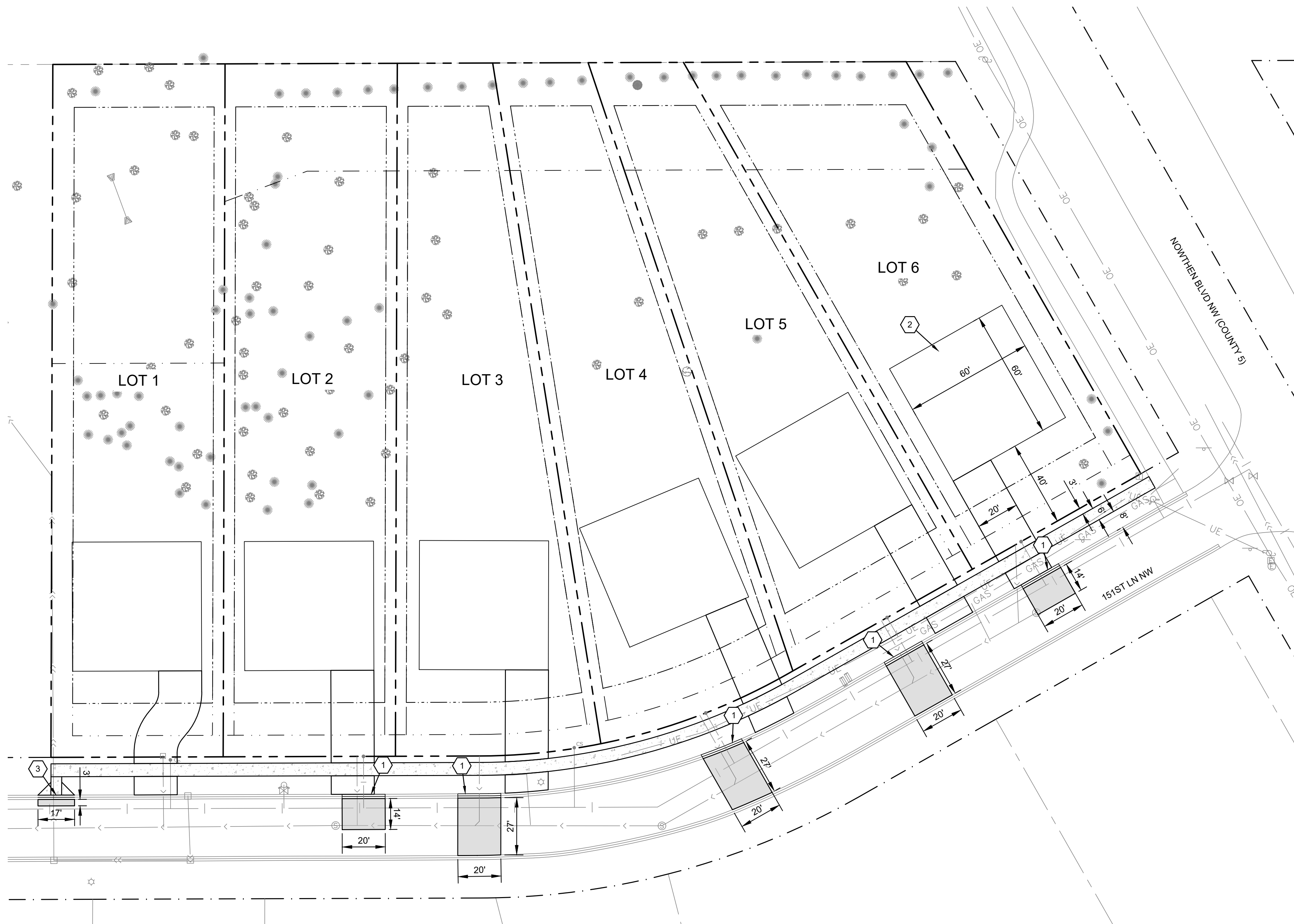
Sheet:
C100

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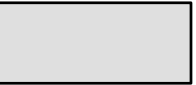
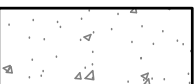
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BROOKSIDE TERRACE CONSTRUCTION
 OAK GROVE, MN





BROOKSIDE TERRACE
 15156 NOWTHEN BOULEVARD, RAMSEY, MN



SYMBOL LEGEND

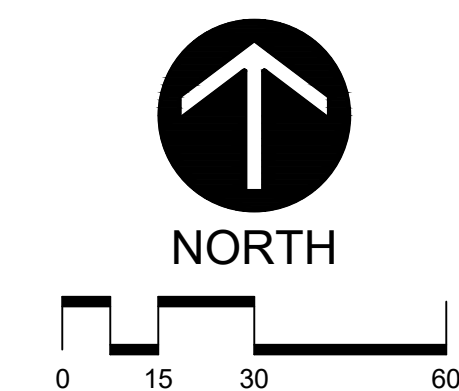
-  NEW BITUMINOUS PAVEMENT
MATCH EXISTING SECTION
SEE DETAIL 4/C501
-  NEW CONCRETE SIDEWALK
SEE DETAIL 2/C501

GENERAL

-  PROPERTY LINE
-  EASEMENT LINE
-  RIGHT-OF-WAY LINE
-  SETBACK LINE

KEY NOTES

- ① NEW SURMOUNTABLE CURB, SEE DETAIL 1/C501 (MATCH EXISTING)
- ② HOUSE PAD (TYPICAL). HOUSE SIZE AND ENVELOPE WILL BE DETERMINED AT THE TIME OF HOME CONSTRUCTION. DRIVEWAYS WILL BE CONSTRUCTED AT THE TIME OF HOME CONSTRUCTION. TIMING OF SIDEWALK CONSTRUCTION IS TO BE DETERMINED.
- ③ NEW PERPENDICULAR PEDESTRIAN RAMP PER MNDOT STANDARD PLATES (SEE DETAIL 1/C503)



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BROOKSIDE CONSTRUCTION
 OAK GROVE, MN

BROOKSIDE TERRACE
 15156 NOWTHEN BOULEVARD, RAMSEY, MN

PRELIMINARY NOT FOR CONSTRUCTION

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Thomas M. Last
 First M. Last, P.E.
 Date: 08.13.25 Lic. No.: 25520

Rev.	Date	Description
	08.13.25	City Comments

Project #: 12256081.000
 Drawn By: TRK
 Checked By: TJH
 Issue Date: 08.13.25
 Sheet Title:

SITE PLAN

Sheet:
C200

KEY NOTES

- 1 SILT FENCE, SEE DETAIL 1/C500
- 2 ROCK CONSTRUCTION ENTRANCE, SEE DETAIL 5/C500
- 3 CATCH BASIN INLET PROTECTION, SEE DETAIL 2/C500
- 4 RIP RAP, SEE DETAIL 3/C500
- 5 EROSION CONTROL BLANKET, SEE DETAIL 6/C501
- 6 SEDIMENT LOG, SEE DETAIL 4/C500

SYMBOL LEGEND

- 950 --- EXISTING CONTOURS
 - 950 --- PROPOSED CONTOURS - MAJOR INTERVAL
 - 949 --- PROPOSED CONTOURS - MINOR INTERVAL
 - - - - - GRADE BREAK LINE
 - 2.0% GRADE SLOPE
 - SILT FENCE
 - SEDIMENT LOG
 - X-X-X- TREE PROTECTION FENCE
 - RIP-RAP / ROCK CONST. ENTRANCE
 - EROSION CONTROL BLANKET
 - INLET PROTECTION
- SPOT ABBREVIATIONS:**
 C - CONCRETE
 G - FINISHED GRADE
 TC - TOP OF CURB
 GL - GUTTER LINE OF CURB
 (*) - EXISTING TO BE VERIFIED

GRADING NOTES

1. Grading of house pads shall be performed at the time of home construction.
2. 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.
3. All elevations with an asterisk (*) shall be field verified. If elevations vary significantly, notify the Engineer for further instructions.
4. Grades shown in paved areas represent finish elevation.
5. All disturbed areas to receive 4" of topsoil and seed (see specifications). Topsoil is defined as black dirt composed of unconsolidated material, largely undecomposed organic matter which is suitable foundation for vegetative growth. The composition of topsoil should contain no more than 35% sand content.
6. All construction shall be performed in accordance with state and local standard specifications for construction.
7. Once the infiltration basin has been constructed, an infiltration test shall be performed. The test shall be performed prior to placement of pre-mixed planting medium. If infiltration rates exceed 8.3 in/hr, soil corrections shall be conducted to reduce infiltration rates to below 8.3 in/hr, but not below 0.6 in/hr.
8. A sweeper must be available to the site within 3 hours notice from the City.
9. Send weekly and 0.5" rainfall event Inspection Reports to the City Inspector.
10. Roof leaders shall direct roof runoff to the back yards to drain the proposed infiltration basin. The roof leaders on lot 1 shall direct roof runoff to the swale between lots 1 and 2.
11. Driveways shall be designed to direct at least 50% of the driveway surface across the turf yard area adjacent to the driveway.



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BROOKSIDE CONSTRUCTION
 OAK GROVE, MN

BROOKSIDE TERRACE
 15156 NORTHEN BOULEVARD, RAMSEY, MN

Client: _____
 Project Title: _____

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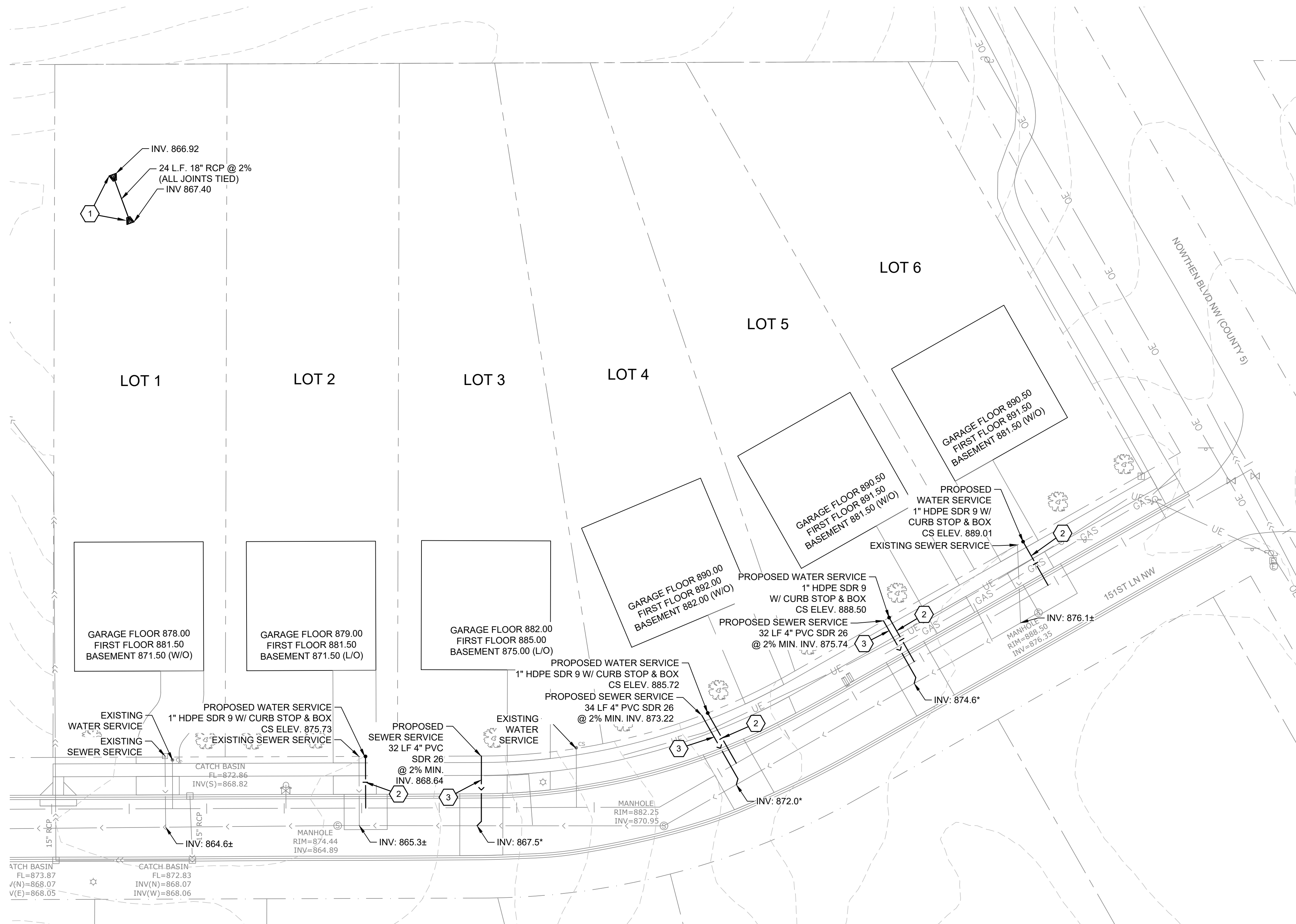
Thomas J. Last
 First M. Last, P.E.
 Date: 08.14.25 Lic. No.: 25520

Rev.	Date	Description
	08.14.25	City Comments

Project #: 12256081.000
 Drawn By: TRK
 Checked By: TJH
 Issue Date: 08.14.25
 Sheet Title:

GRADING PLAN

Sheet: **C300**



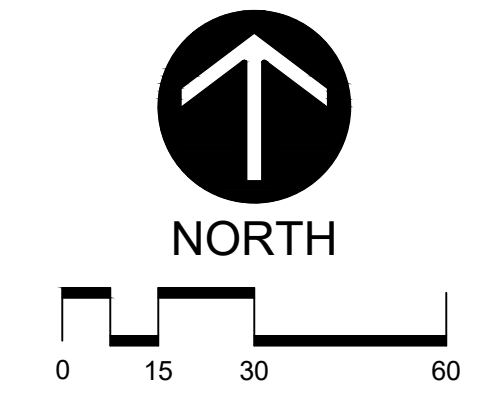
SYMBOL LEGEND

○	STORM MANHOLE	⊗	HYDRANT
○	CATCH BASIN	▶	GATE VALVE & BOX
◻	CURB INLET	⊗	WATER SHUTOFF
▲	FLARED END	☀	LIGHT POLE
○	SANITARY MANHOLE		

— T —	TELEPHONE LINE
— OE —	ELECTRIC OVERHEAD LINE
— UE —	ELECTRIC UNDERGROUND LINE
— FBO —	FIBER OPTIC UNDERGROUND LINE
— GAS —	NATURAL GAS UNDERGROUND LINE
— S —	SANITARY SEWER PIPE
— SS —	STORM SEWER PIPE
— T —	TELEPHONE UNDERGROUND LINE
— W —	WATERMAIN PIPE
— D —	DRAINTILE PIPE

- ### KEY NOTES
- 1 NEW FLARED END SECTION, SEE DETAIL 5/C501
 - 2 NEW WATER SERVICE, SEE DETAIL 7/C500
 - 3 NEW SEWER SERVICE, SEE DETAIL 8/C500

- ### 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. Utility connections (sanitary sewer, watermain, and storm sewer) may require a permit from the City.
 3. The contractor shall verify the elevations at proposed connections to existing utilities prior to any demolition or excavation. All elevations with an asterisk (*) shall be field verified. If elevations vary significantly, notify the Engineer for further instructions.
 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 4714.1107 where located within 10 feet of waterlines or the building.
 6. HDPE storm sewer piping shall meet ASTM F2306 and fittings shall meet ASTM D3212 joint pressure test. Installation shall meet ASTM C2321.
 7. Maintain a minimum of 8' of cover over all water lines and sanitary sewer lines. Where 8' of cover is not provided, install 2" rigid polystyrene insulation (MNDOT 3760) with a thermal resistance of at least 5 and a compressive strength of at least 25 psi. Insulation shall be 8' wide, centered over pipe with 6" sand cushion between pipe and insulation. Where depth is less than 5', use 4" of insulation.
 8. Install water lines 18" above sewers. Where the sewer is less than 18" below the water line (or above), install sewer piping of materials approved for inside building use for 10 feet on each side of the crossing.
 9. See Project Specifications for bedding requirements.



PRELIMINARY NOT FOR CONSTRUCTION

Client: Brookside Terrace Construction, Oak Grove, MN
Project Title: Brookside Terrace, 15156 Nowthen Boulevard, Ramsey, MN

I hereby certify that this plan, specifications 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.

Thomas J. Last
 First M. Last, P.E.
 Date: 08.14.25 Lic. No.: 25520

Rev.	Date	Description
	08.14.25	City Comments

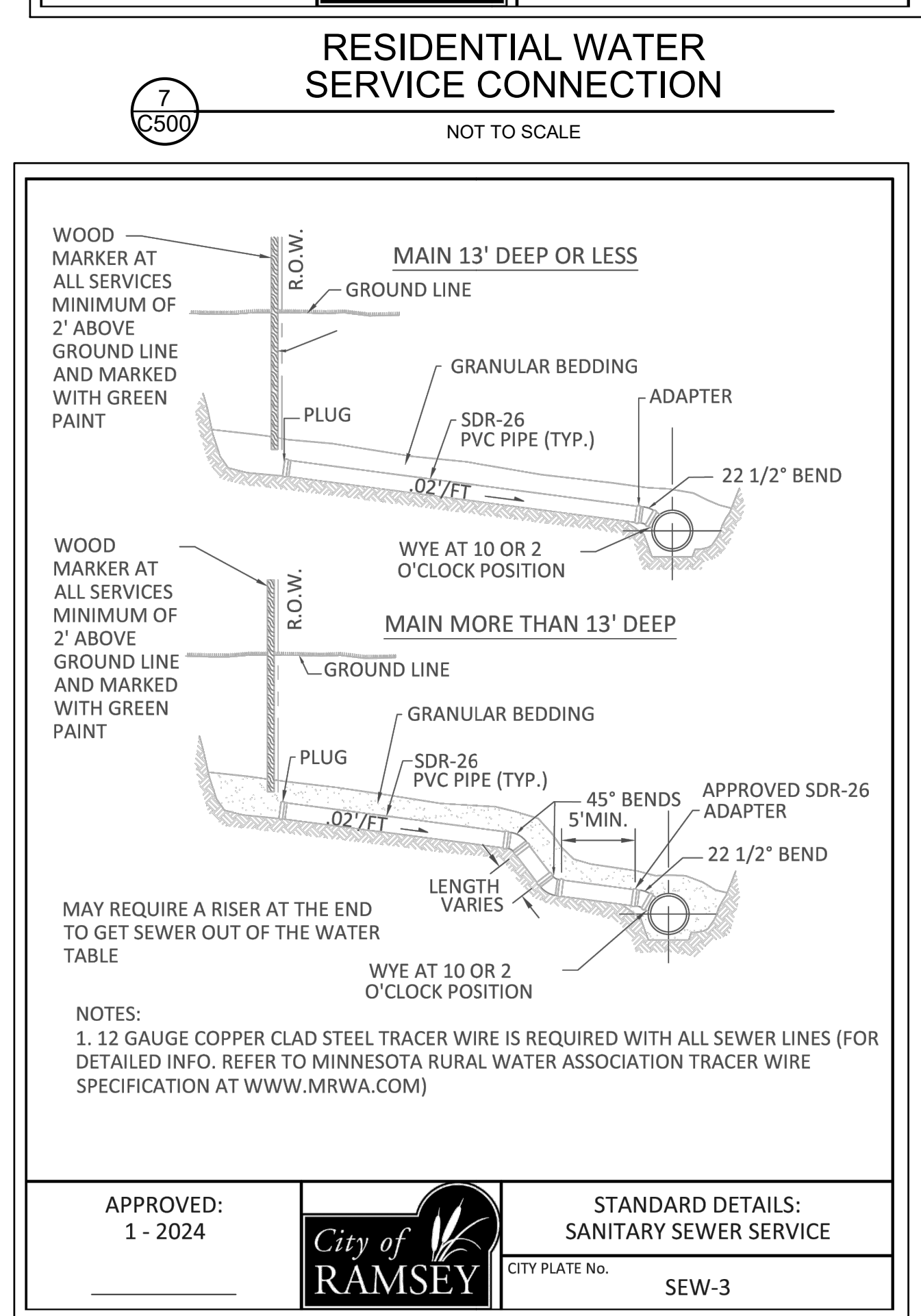
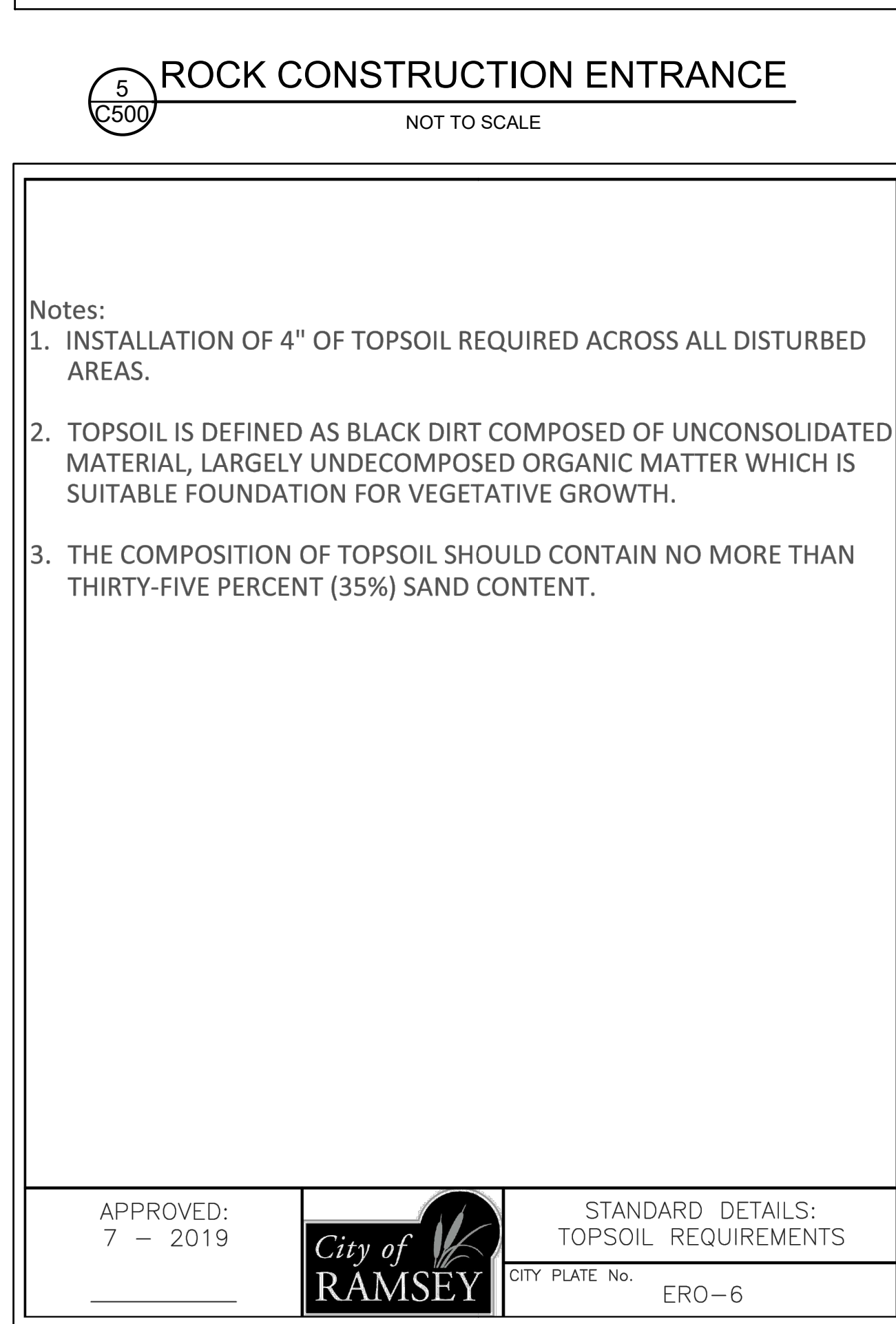
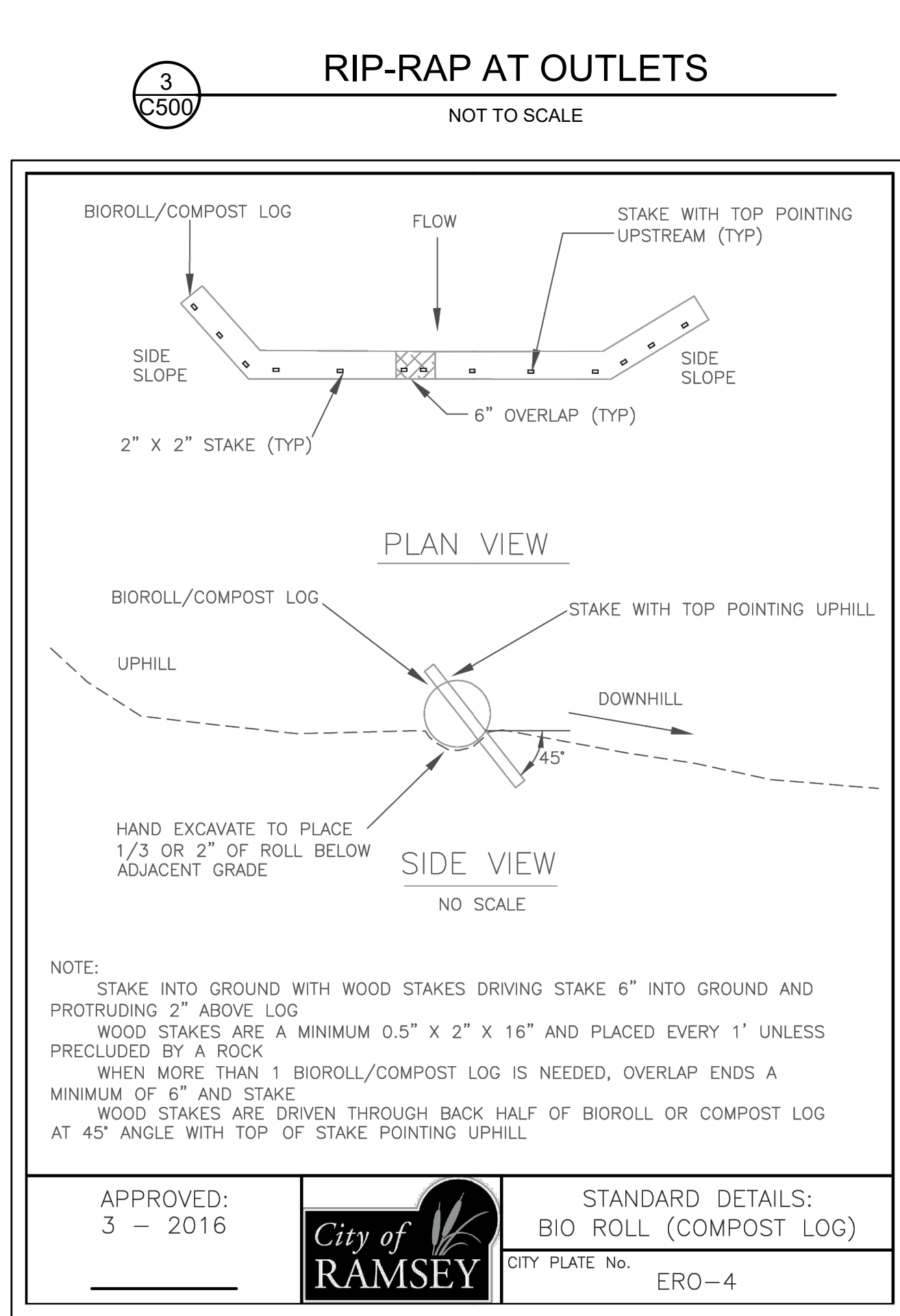
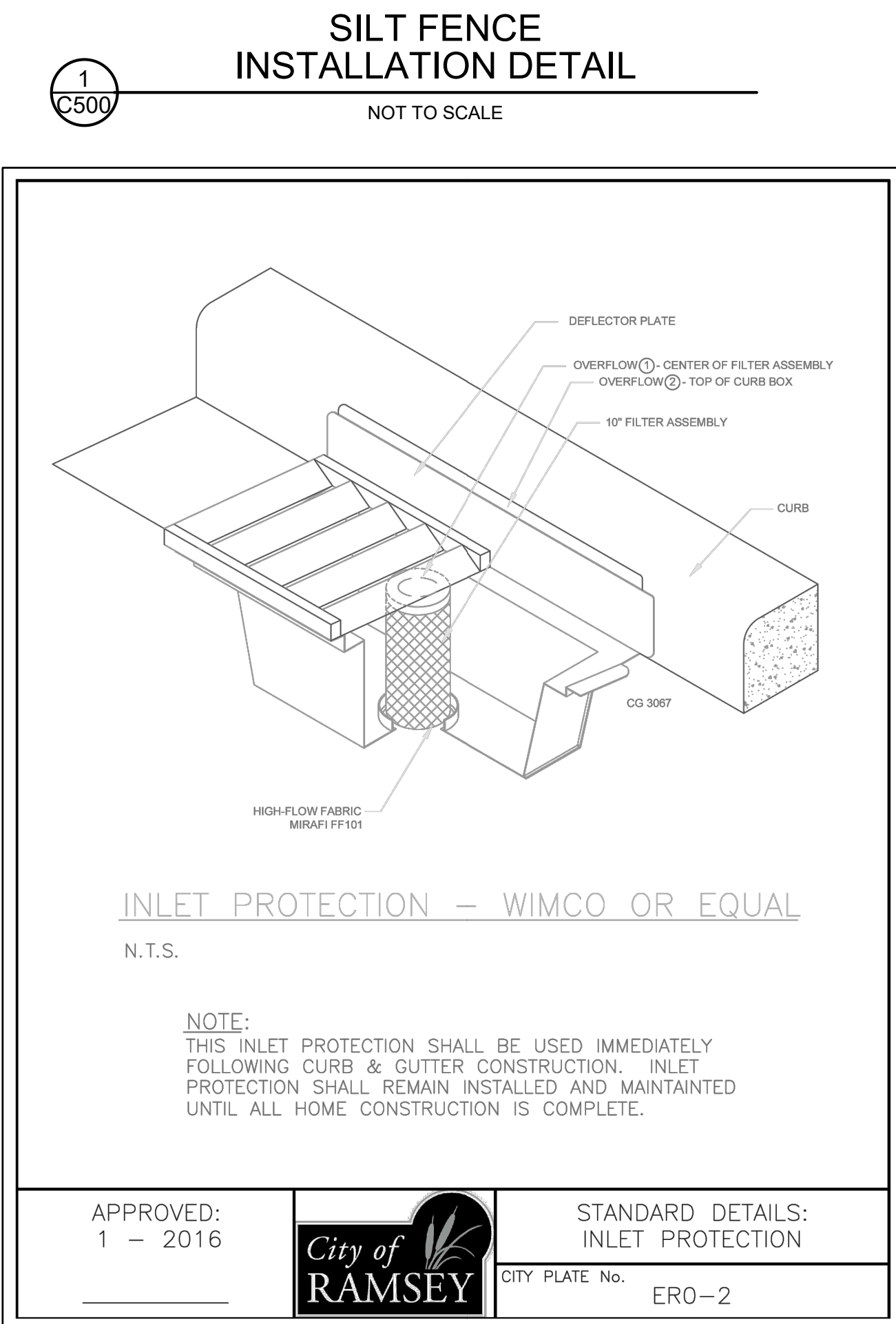
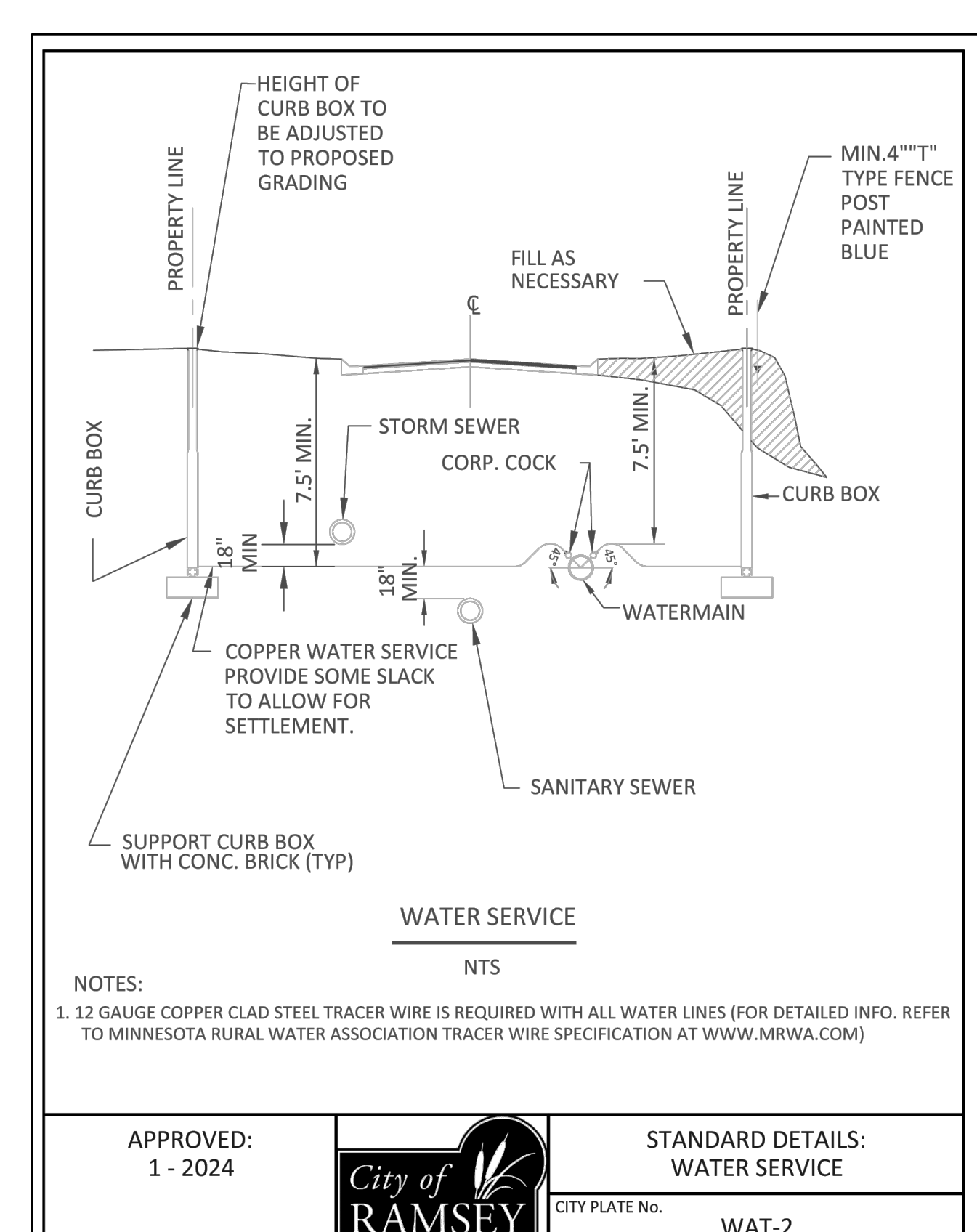
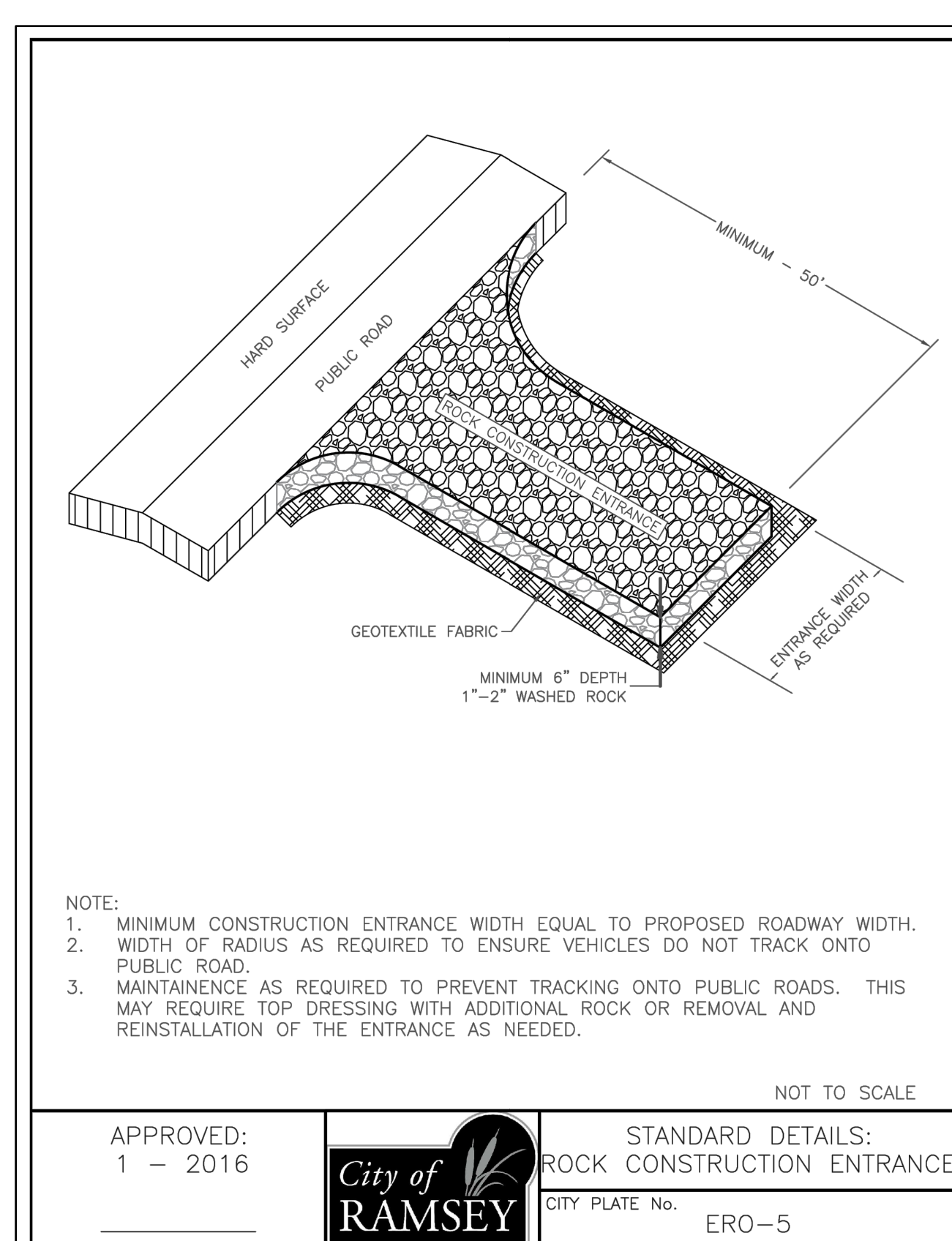
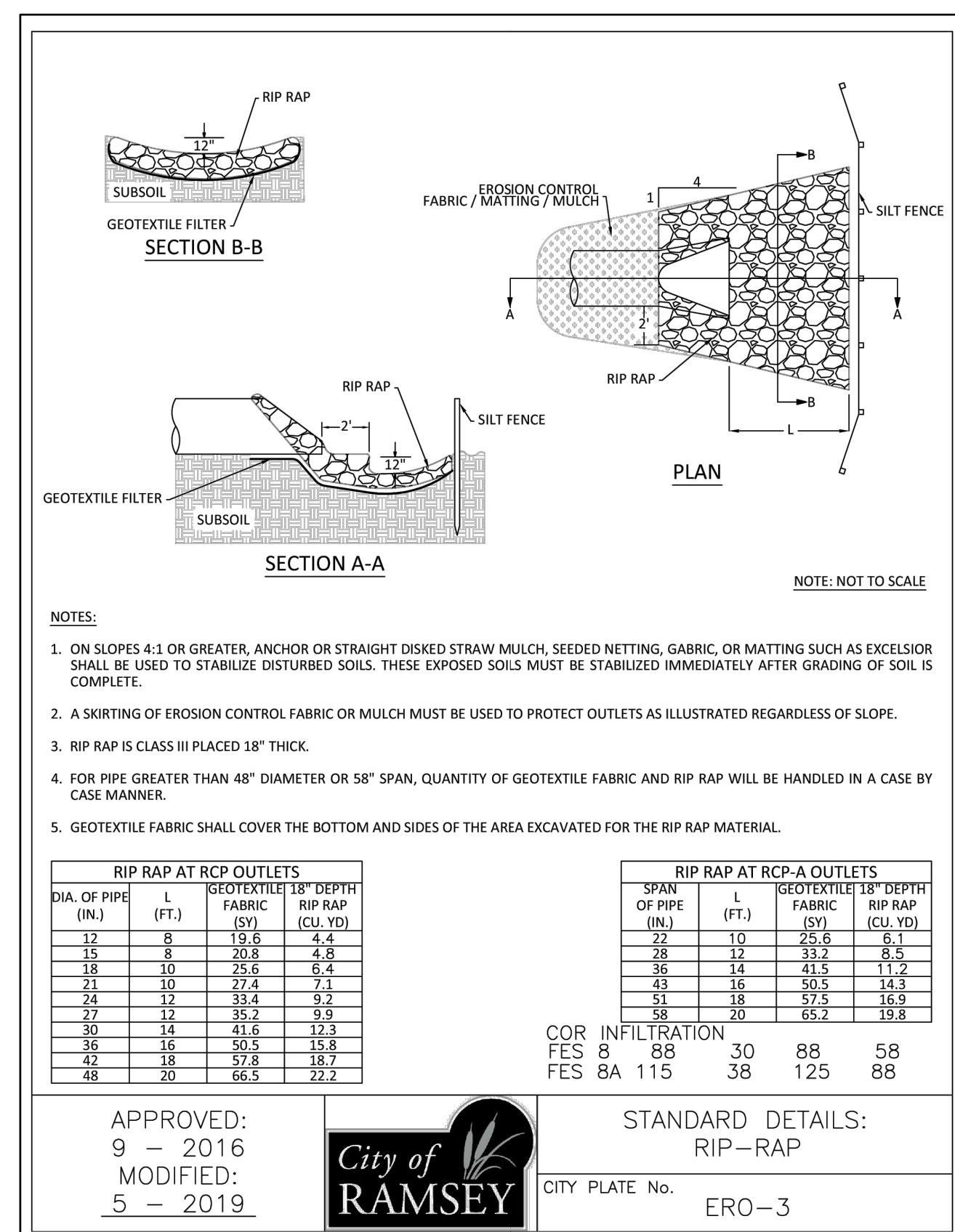
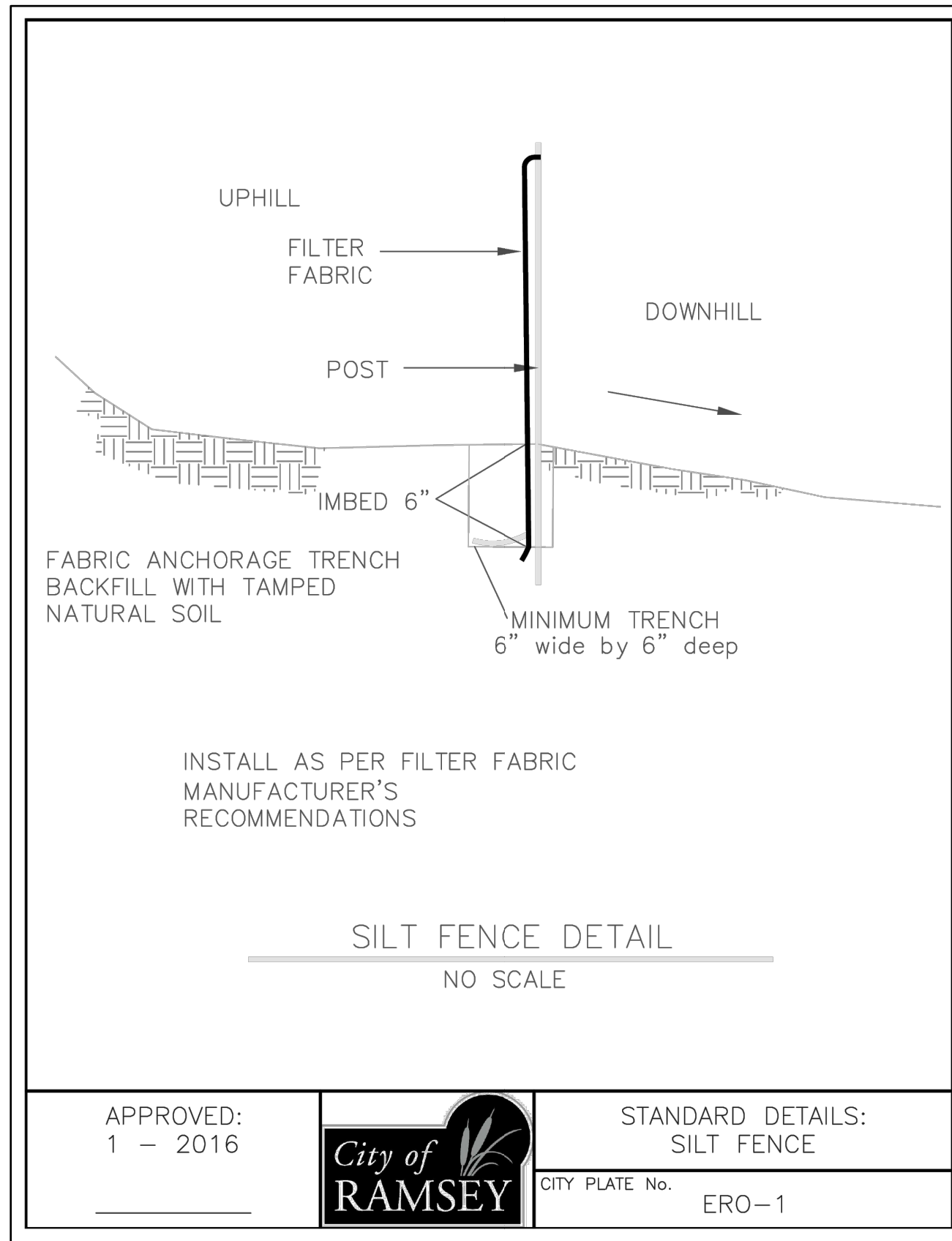
Project #: 12256081.000
 Drawn By: TRK
 Checked By: TJH
 Issue Date: 08.14.25
 Sheet Title:

UTILITY PLAN

Sheet: **C400**

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1
C500
SILT FENCE INSTALLATION DETAIL
NOT TO SCALE

3
C500
RIP-RAP AT OUTLETS
NOT TO SCALE

5
C500
ROCK CONSTRUCTION ENTRANCE
NOT TO SCALE

7
C500
RESIDENTIAL WATER SERVICE CONNECTION
NOT TO SCALE

4
C500
SEDIMENT LOG DETAIL
NOT TO SCALE

6
C500
TOPSOIL DETAIL
NOT TO SCALE

8
C500
RESIDENTIAL SANITARY SERVICE CONNECTION
NOT TO SCALE

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BROOKSIDE TERRACE CONSTRUCTION
OAK GROVE, MN

Client: **BROOKSIDE TERRACE CONSTRUCTION**
15156 NOWTHEN BOULEVARD, RAMSEY, MN

Project Title: **BROOKSIDE TERRACE**
15156 NOWTHEN BOULEVARD, RAMSEY, MN

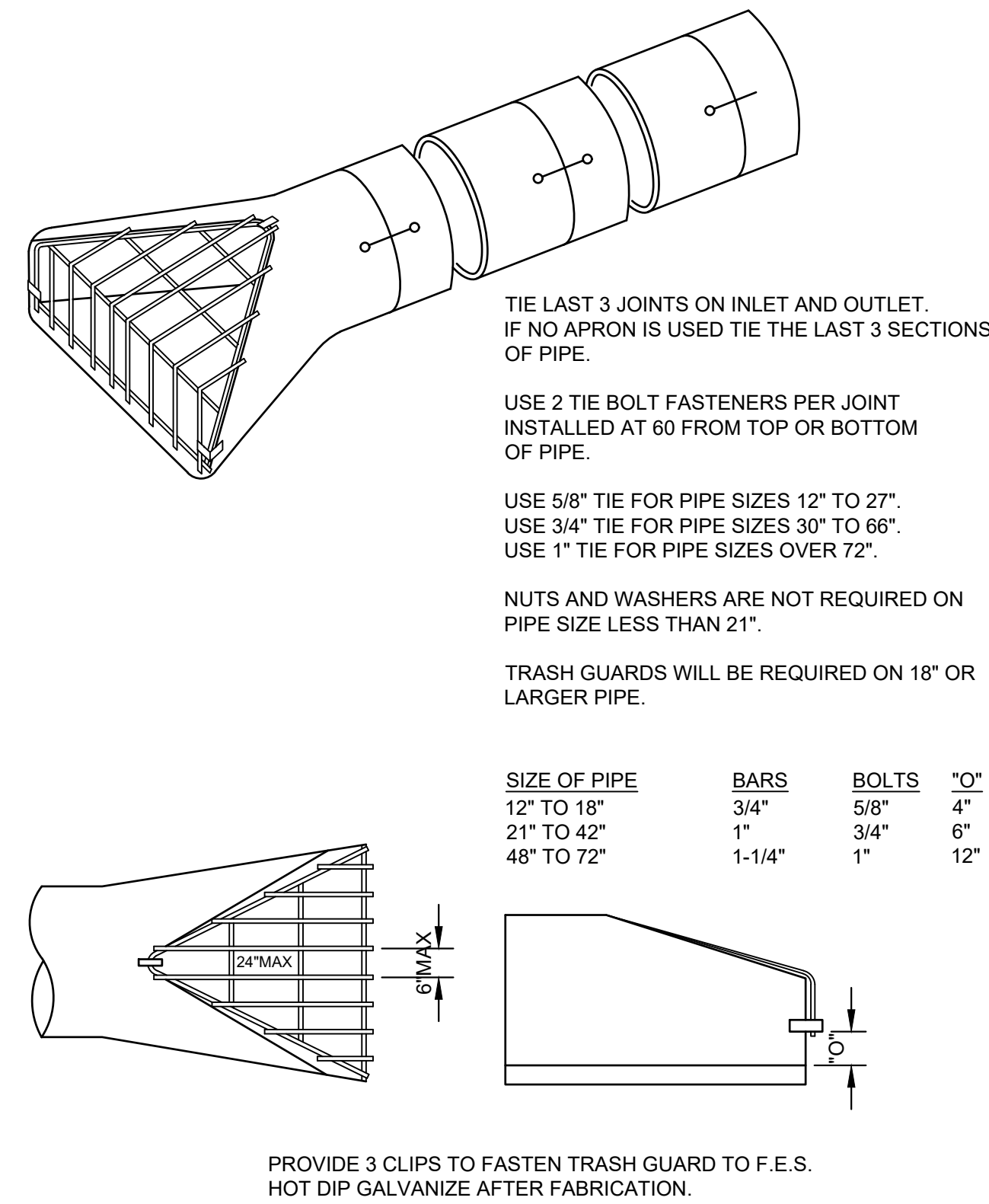
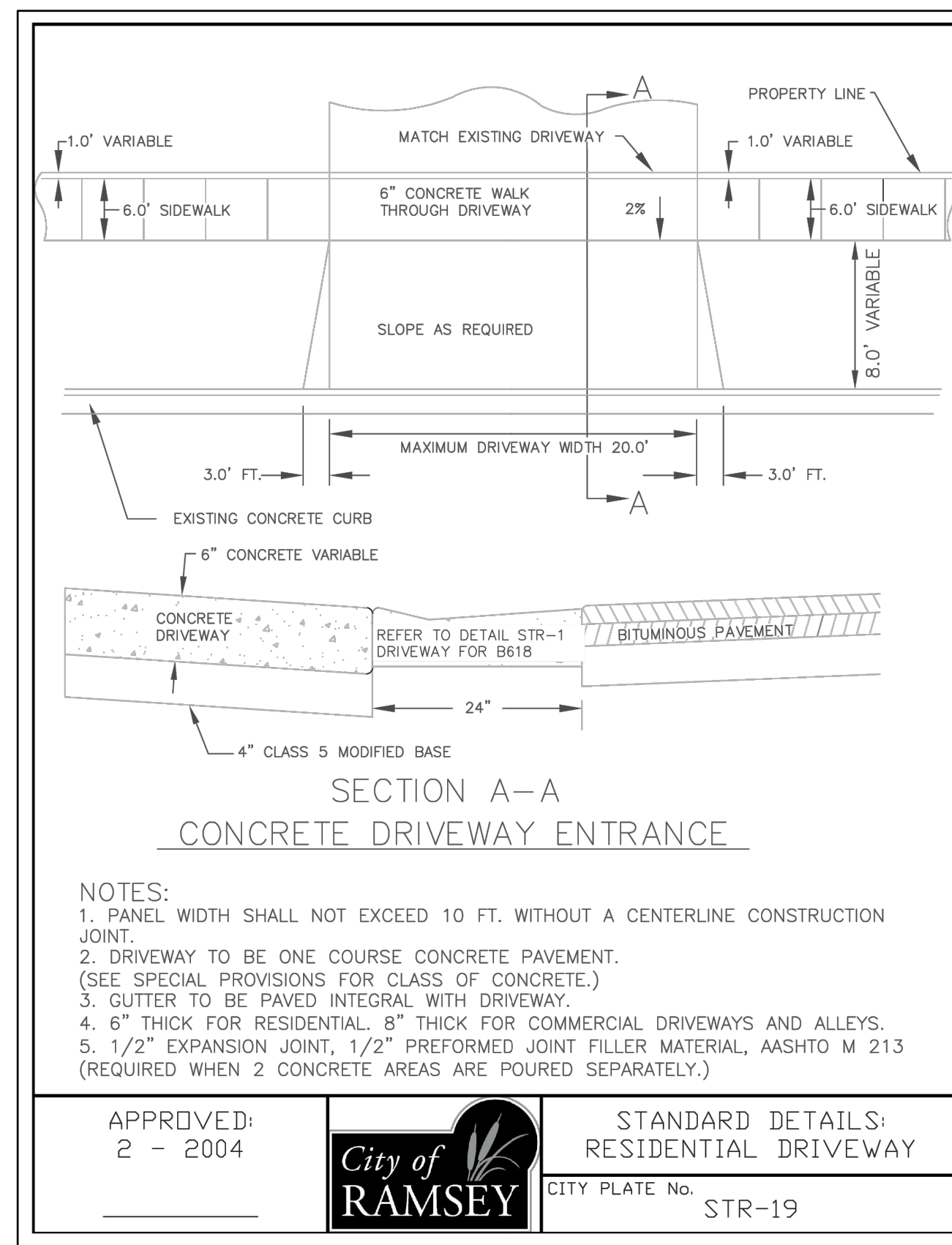
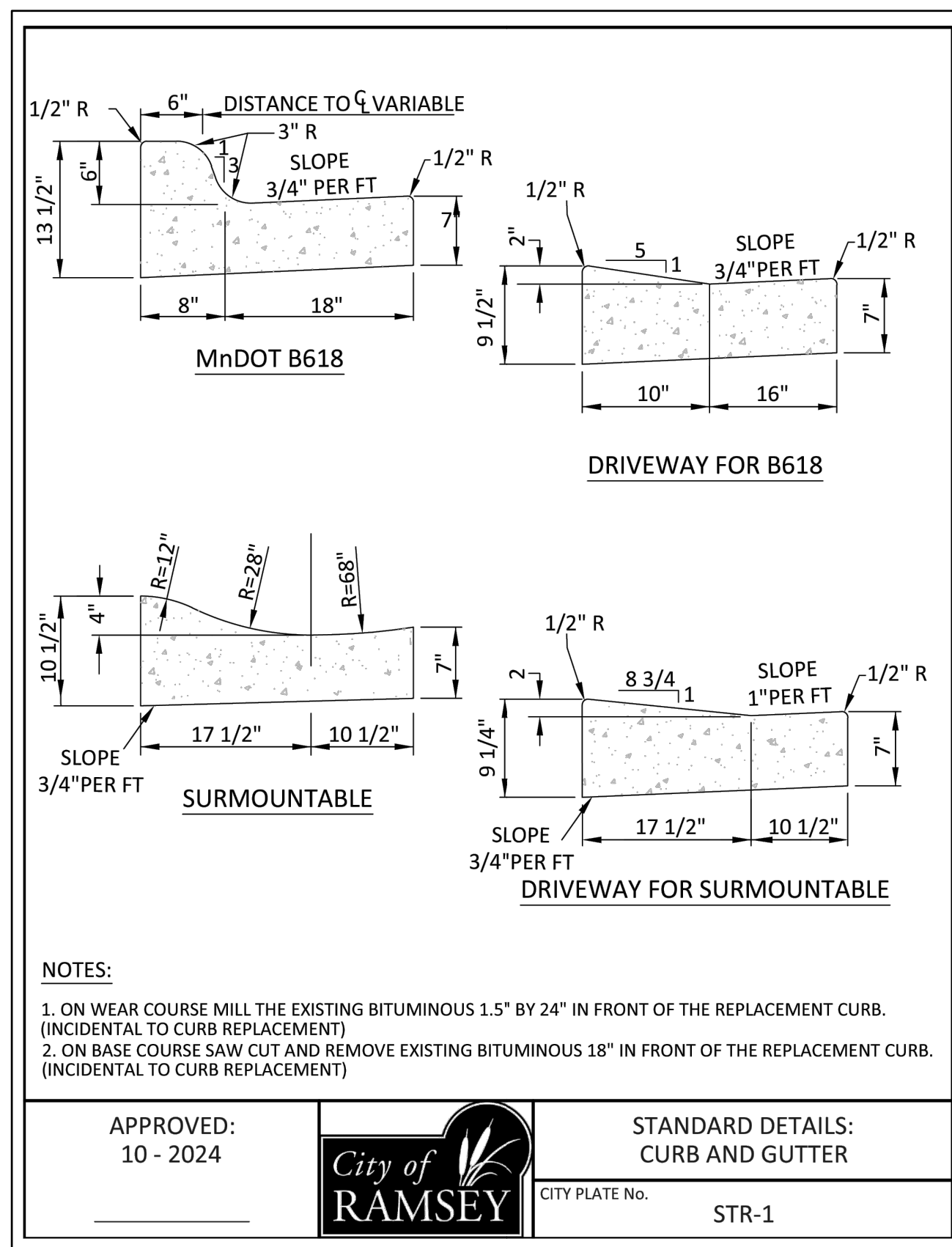
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Thomas J. Johnson
First M. Last, P.E.
Date: 08.13.25 Lic. No.: 25520

Rev.	Date	Description
08.13.25		City Comments

Project #: 12256081.000
Drawn By: TRK
Checked By: TJH
Issue Date: 08.13.25
Sheet Title: DETAILS

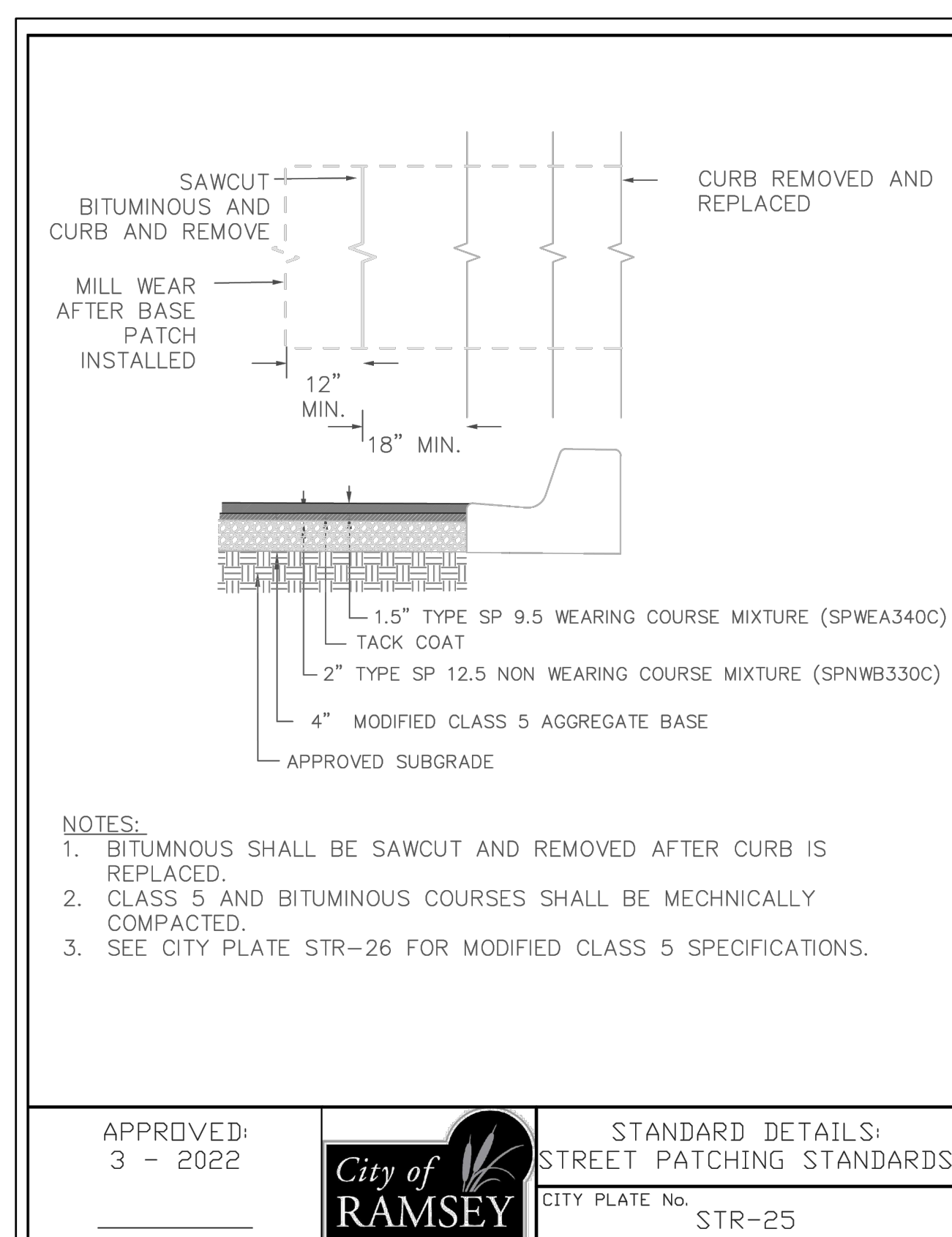
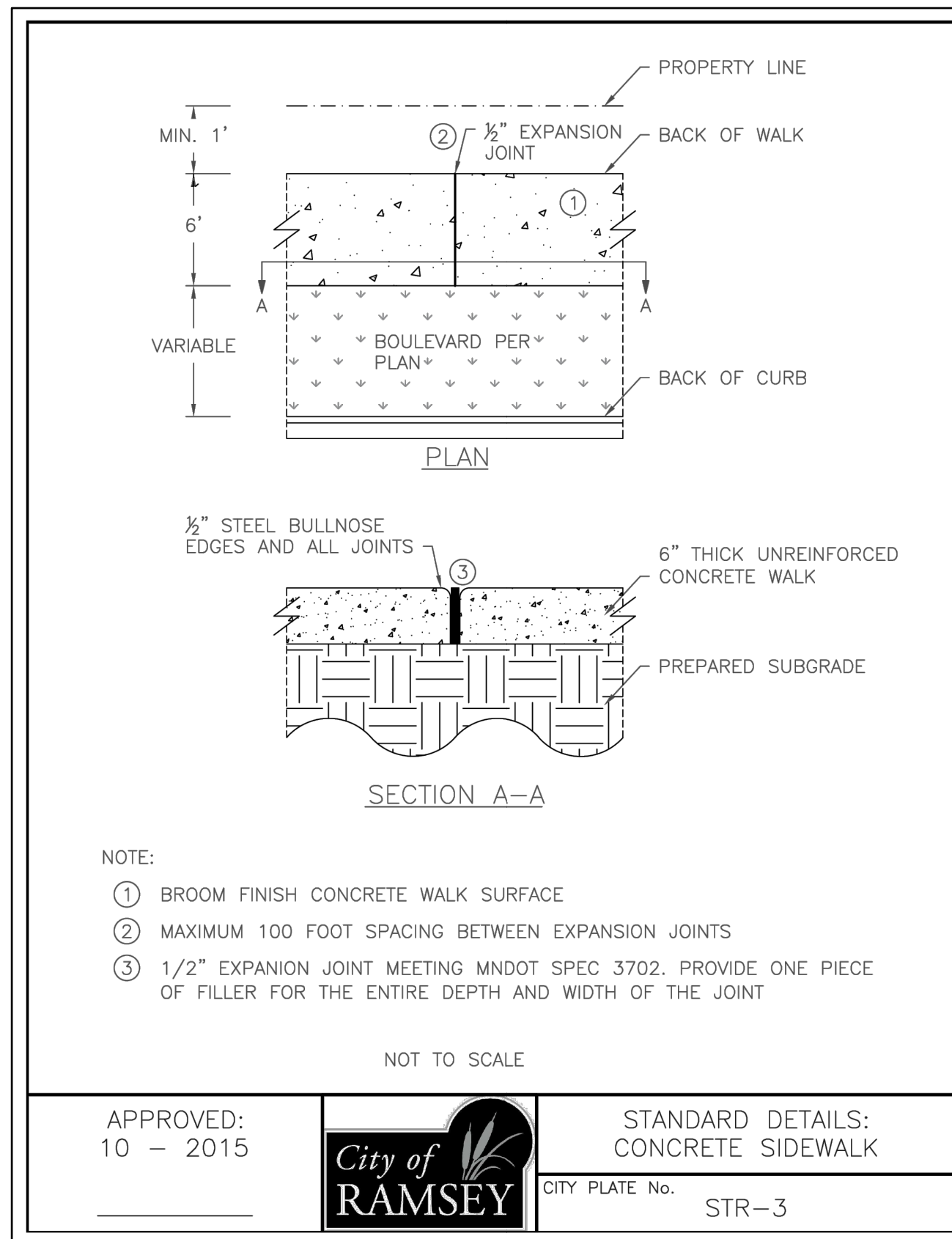
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1 C501 NOT TO SCALE

3 C501 NOT TO SCALE

5 C501 NOT TO SCALE



2 C501 NOT TO SCALE

4 C501 NOT TO SCALE

6 C501 NOT TO SCALE

PRELIMINARY NOT FOR CONSTRUCTION

Client: Project Title:

BROOKSIDE TERRACE CONSTRUCTION

OAK GROVE, MN

BROOKSIDE TERRACE

15156 NOWTHEN BOULEVARD, RAMSEY, MN

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Thomas J. Hildebrand

First M. Last, P.E.

Date: 08.13.25 Lic. No.: 25520

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	08.13.25	City Comments

Project #: 12256081.000
 Drawn By: TRK
 Checked By: TJH
 Issue Date: 08.13.25
 Sheet Title:

DETAILS

Sheet: **C501**

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STYLE "CB"™ SEWER SADDLE

SEWER

MATERIAL SPECIFICATIONS

CASTINGS: Ductile iron per ASTM 536, Grade 65-45-12. Protected with a yellow shopcoat.

ADJUSTABLE STRAP: 3 1/2" wide, stainless steel per ASTM A240, type 304.

BOLTS: 1/2" UNC rolled thread, 304 stainless steel.

NUTS: Stainless steel per ASTM A194, type 304. Coated to prevent galling.

WASHERS: Stainless steel, type 304 and plastic lubricating washers.

GASKET: SBR per ASTM D2000 MBA 710, compounded for water and sewer service. Other compounds available on request.



CB-4.80UN
PATENT #4494780



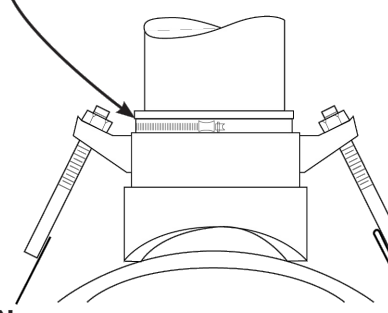
NOM. BRANCH SIZE	NOM. PIPE SIZE	RANGE	BRANCH TYPE	BRANCH O.D.	CATALOG NUMBER	LIST PRICE	ADD-ON EPOXY	APPROX. WEIGHT (lbs.)
4"	6" - 12" 48" strap	16.27 - 14.40 Regular Gasket	PVC Sewer	4.215	CB-4.215	\$218.20		10 #
			Yseal	4.28	CB-4.28			
			C.I. Soil-No Hub	4.38	CB-4.38			
			PVC	4.50	CB-4.50			
			Universal ¹	4.20 - 4.80	CB-4.80UNLS ¹			
	14" - 24" 96" strap	14.40 - 25.80 Large O.D. Gasket	Clay ¹	5.00 - 5.38	CB-5.38LS ¹	277.47	\$66.37	11 #
			PVC Sewer	4.215	CB-4.215LS			
			Yseal	4.28	CB-4.28LS			
			C.I. Soil-No Hub	4.38	CB-4.38LS			
			PVC	4.50	CB-4.50LS			
6"	8" - 12" 48" strap	18.00 - 14.40 Regular Gasket	Universal ¹	4.20 - 4.80	CB-4.80UNLS ¹	514.98		13 #
			Clay ¹	5.00 - 5.38	CB-5.38LS ¹			
			PVC Sewer	4.215	CB-4.215XLS			
			Yseal	4.28	CB-4.28XLS			
			C.I. Soil-No Hub	4.38	CB-4.38XLS			
	14" - 24" 96" strap	14.40 - 25.80 Large O.D. Gasket	PVC	4.50	CB-4.50XLS	290.88		12 #
			Universal ¹	4.20 - 4.80	CB-4.80UNXLS ¹			
			Clay ¹	5.00 - 5.38	CB-5.38XLS ¹			
			PVC Sewer	4.215	CB-4.215XLS			
			Yseal	4.28	CB-4.28XLS			
24" - 48" 192" strap	25.80 - 54.00 Large O.D. Gasket	C.I. Soil-No Hub	4.38	CB-4.38XLS	347.34	100.38	13 #	
		PVC	4.50	CB-4.50XLS				
		Universal ¹	4.20 - 4.80	CB-4.80UNXLS ¹				
		Clay ¹	5.00 - 5.38	CB-5.38XLS ¹				
		PVC Sewer	4.215	CB-4.215XLS				
6"	8" - 12" 48" strap	18.00 - 14.40 Regular Gasket	C.I. Soil-No Hub	6.27 - 6.30	CB-6.30	584.86		15 #
			Universal ¹	6.27 - 6.66	CB-6.66UNLS ¹			
			Cast Iron-D.I.	6.90	CB-6.90			
			Clay ¹	7.19 - 8.00	CB-8.00LS ¹			
			PVC Sewer	6.27 - 6.30	CB-6.30LS			
14" - 24" 96" strap	14.40 - 25.80 Large O.D. Gasket	C.I. Soil-No Hub	6.27 - 6.66	CB-6.66UNLS ¹	347.34	100.38	13 #	
		Universal ¹	6.27 - 6.66	CB-6.66UNLS ¹				
		Cast Iron-D.I.	6.90	CB-6.90LS				
		Clay ¹	7.19 - 8.00	CB-8.00LS ¹				
		PVC Sewer	6.27 - 6.30	CB-6.30XLS				
24" - 48" 192" strap	25.80 - 54.00 Large O.D. Gasket	C.I. Soil-No Hub	6.27 - 6.66	CB-6.66UNXLS ¹	584.86		15 #	
		Universal ¹	6.27 - 6.66	CB-6.66UNXLS ¹				
		Cast Iron-D.I.	6.90	CB-6.90XLS				
		Clay ¹	7.19 - 8.00	CB-8.00XLS ¹				
		PVC Sewer	6.27 - 6.30	CB-6.30XLS				

¹ CB Sewer Saddles for Universal and Clay pipe include stainless steel hose clamp.

² Regular gaskets are NOT interchangeable with large gaskets.

BRANCH SIZE	SIZE	GASKET	SADDLE CASTING	SLIDING BOLT	HOSE CLAMP ¹	STRAP
4"	6 - 12"	\$71.13	\$76.51	\$26.01	\$21.15	REG (48") \$70.56
	14 - 24"	97.02				LS (96") 103.93
	24 - 48"	97.02				XLS (192") 341.46
6"	8 - 12"	125.26	95.05	26.01	22.51	
	14 - 24"	148.35				
	24 - 48"	148.35				

STAINLESS STEEL HOSE CLAMP SUPPLIED FOR UNIVERSAL GASKET



TO ORDER: Specify catalog number.

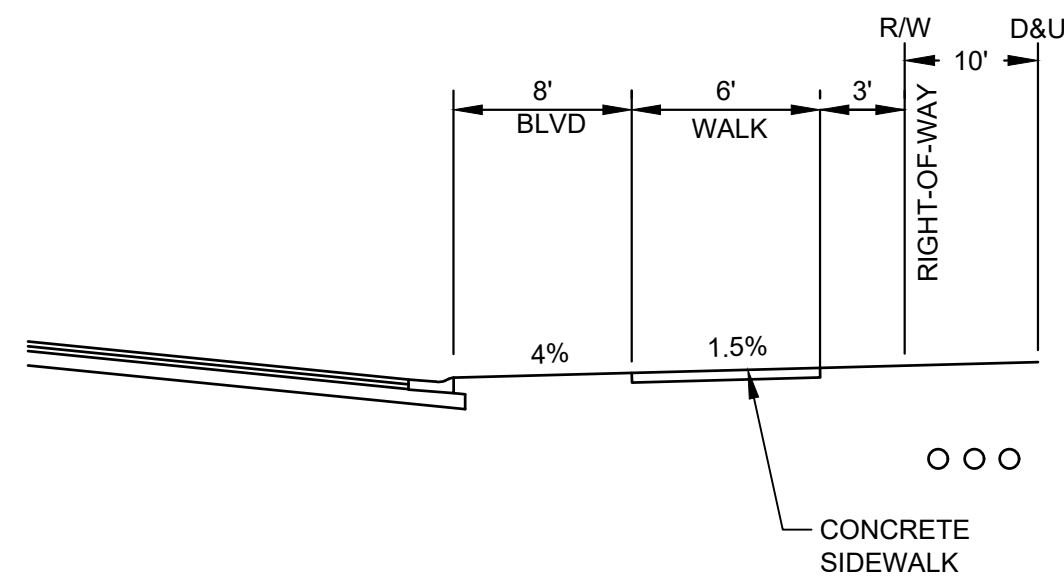
EXAMPLE: To fit 4" branch to 6" - 12" nominal pipe with branch 4.20 - 4.80, order **CB-4.80UN**

Manufactured with Domestic and import material. For Domestic requirements please contact our Quotations Department.

JANUARY 10, 2022

7-5

1 C502 SEWER SERVICE CONNECTION NOT TO SCALE

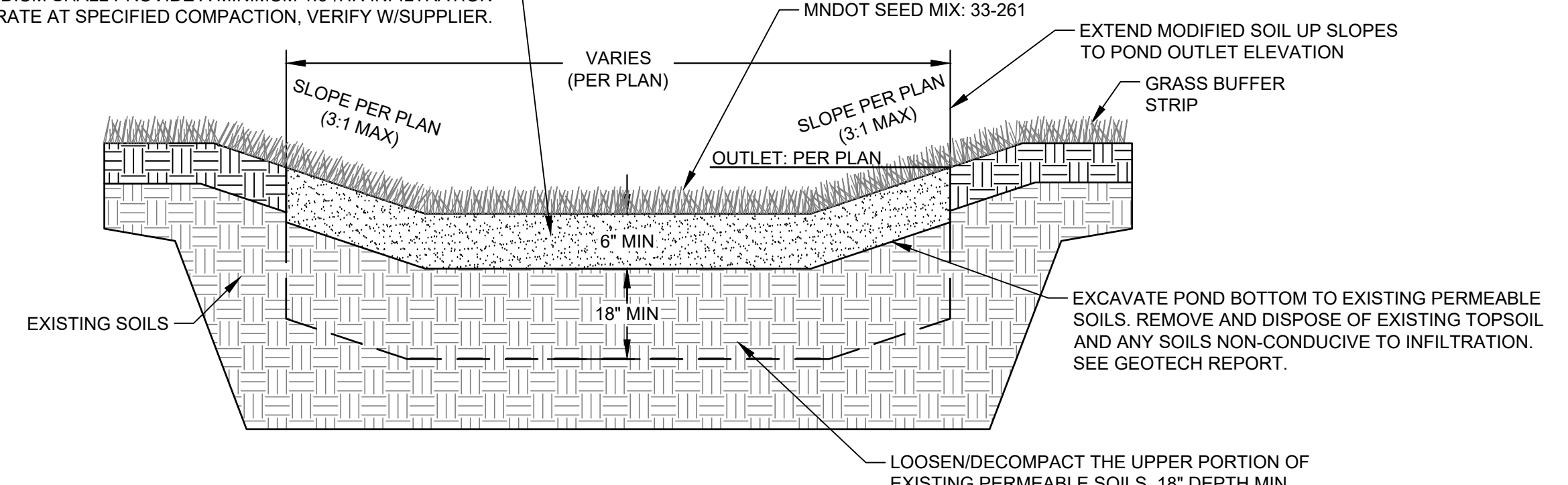


3 C502 TYPICAL BOULEVARD SECTION NOT TO SCALE

BASIN CONSTRUCTION NOTES:

- ALL SOILS WITHIN INFILTRATION AREAS SHALL BE PROTECTED FROM COMPACTION DUE TO CONSTRUCTION TRAFFIC. AREAS SHALL BE STAKED AND MARKED OFF, WITH ONLY LOW IMPACT EQUIPMENT (TRACKED OR SIMILAR) ALLOWED.
- TEMPORARY SEDIMENT BASINS DURING CONSTRUCTION SHALL BE LOCATED AWAY FROM PLANNED INFILTRATION AREAS TO MINIMIZE NATIVE SOIL DISTURBANCE AND POTENTIAL SEDIMENT DEPOSITS.
- INSTALL TEMPORARY EROSION CONTROL (SILT FENCE OR EQUAL) AROUND ALL INFILTRATION AREAS TO PREVENT SEDIMENT ENTRY DURING CONSTRUCTION. TEMPORARY EROSION CONTROL SHALL REMAIN UPSTREAM UNTIL SATISFACTORY TURF ESTABLISHMENT. FINAL BASIN GRADING AND PLANTING MEDIUM PLACEMENT SHALL NOT OCCUR UNTIL PERIMETER BMP'S ARE IN PLACE.
- PROVIDE AN AS BUILT TOPOGRAPHIC SURVEY OF THE EXCAVATION BOTTOM, BERM, OUTLET ELEVATION, FLARED END SECTION, AND STORM STRUCTURES PRIOR TO FINAL SEEDING AND RESTORATION TO VERIFY CORRECT SLOPES AND DEPTHS. FINAL RESTORATION SHALL NOT BE PERFORMED UNTIL TOPOGRAPHIC SURVEY IS REVIEWED AND APPROVED BY THE ENGINEER.

PRE-MIXED PLANTING MEDIUM: PLAISTED'S RAIN GARDEN PEAT MIX (80% SAND, 20% PEAT), OR EQUAL. PLANTING MEDIUM SHALL PROVIDE A MINIMUM 1.6"/HR INFILTRATION RATE AT SPECIFIED COMPACTION. VERIFY W/SUPPLIER.



2 C502 INFILTRATION BASIN CROSS SECTION DETAIL NOT TO SCALE

PRELIMINARY NOT FOR CONSTRUCTION

Client:

BROOKSIDE TERRACE CONSTRUCTION
OAK GROVE, MN

Project Title:

I hereby certify that this plan, specifications 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.

Thomas J. Last

First M. Last, P.E.

Date: 08.13.25 Lic. No.: 25520

Rev.	Date	Description
	08.13.25	City Comments

Project #: 12256081.000
Drawn By: TRK
Checked By: TJH
Issue Date: 08.13.25

Sheet Title:

DETAILS

Sheet:

C502

Larson Engineering, Inc.
3524 Labore Road
White Bear Lake, MN 55110
651.481.9120
www.larsonengr.com

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Client:

Project Title:

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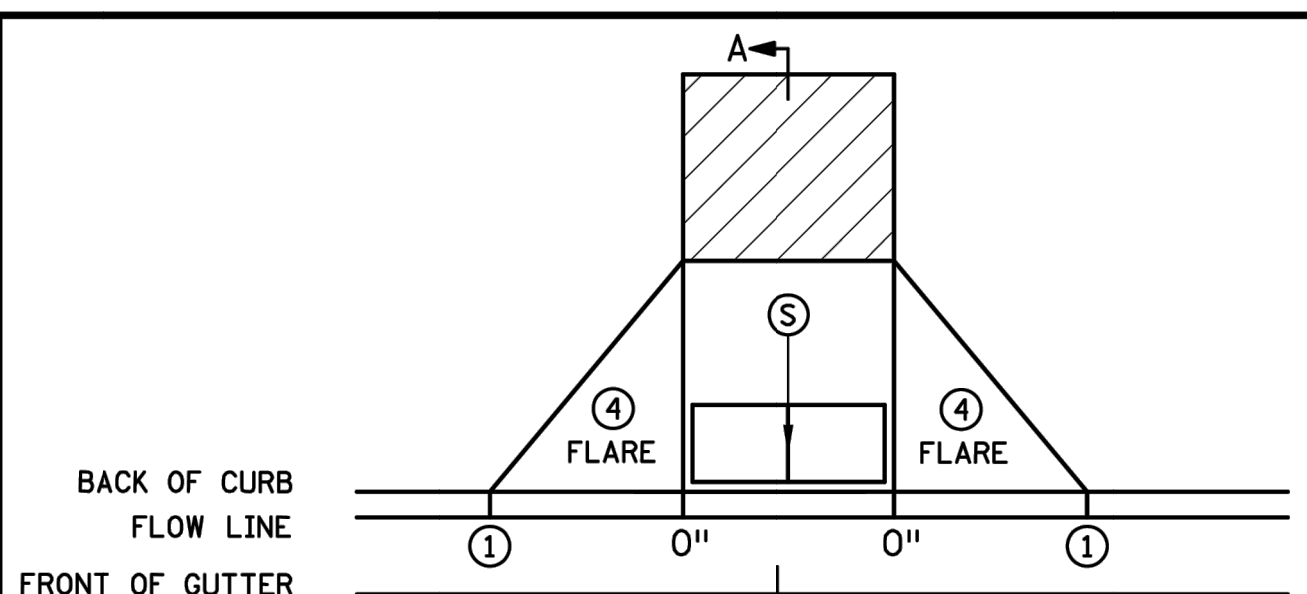
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Rev.	Date	Description
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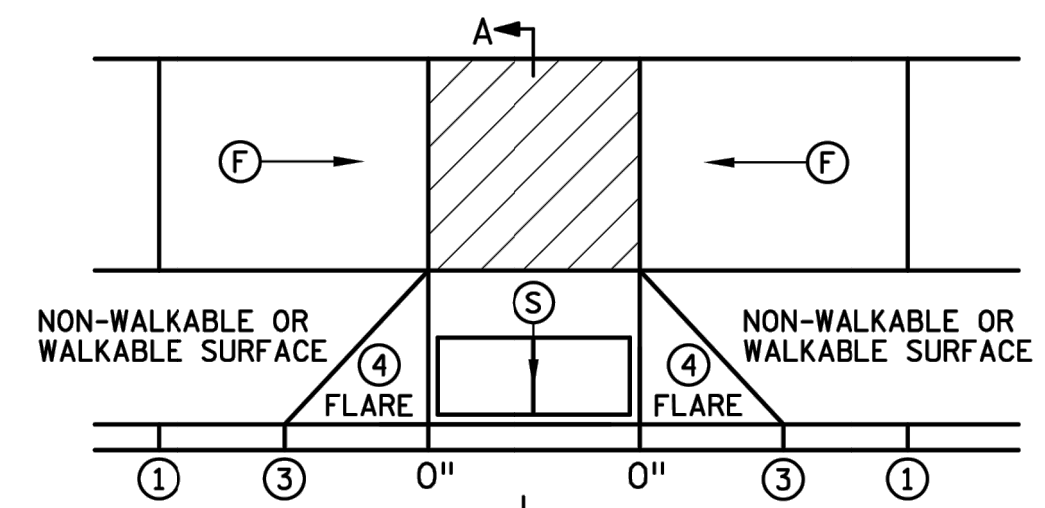
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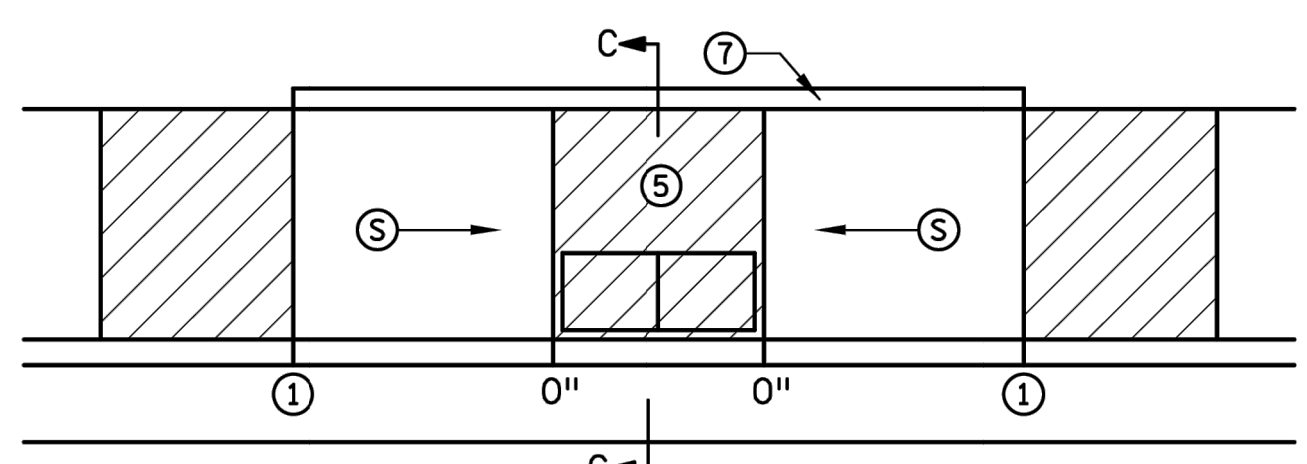
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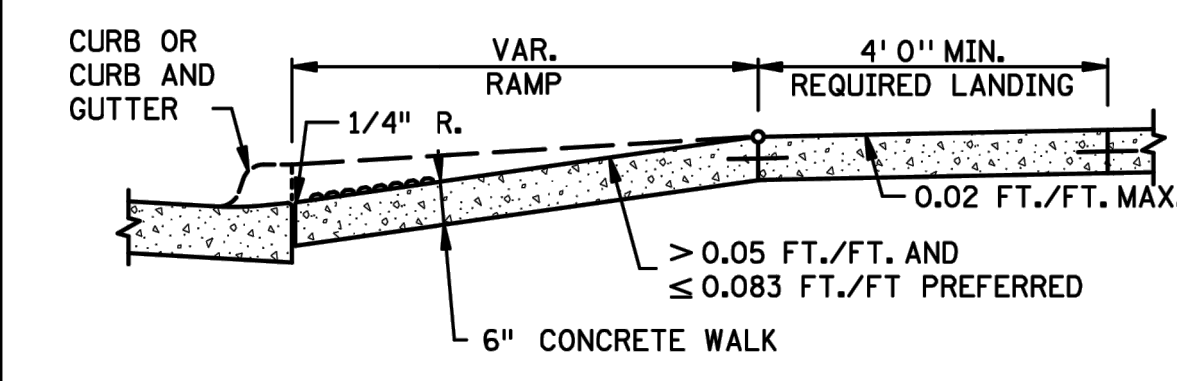
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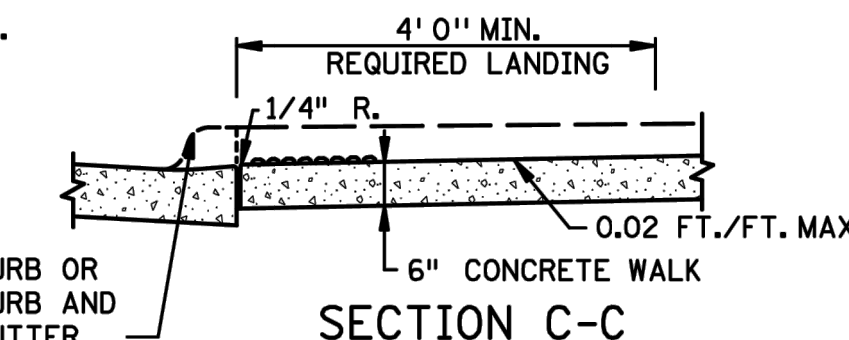
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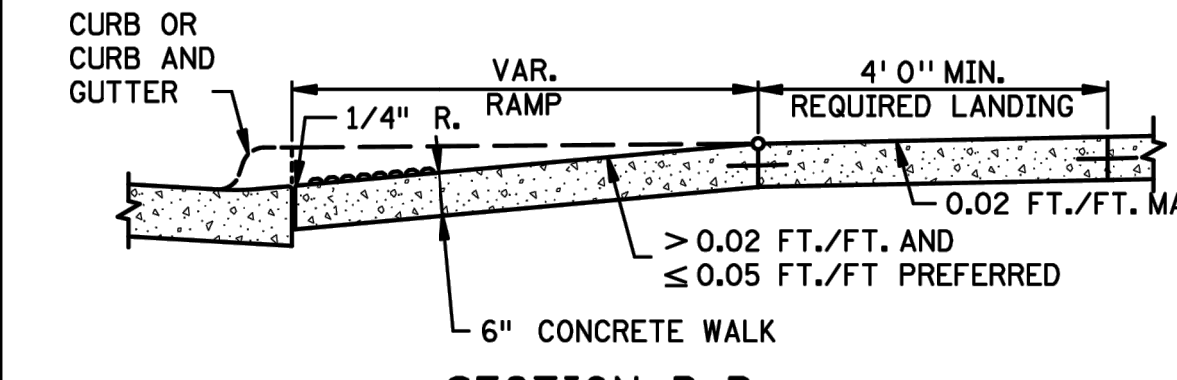
PARALLEL



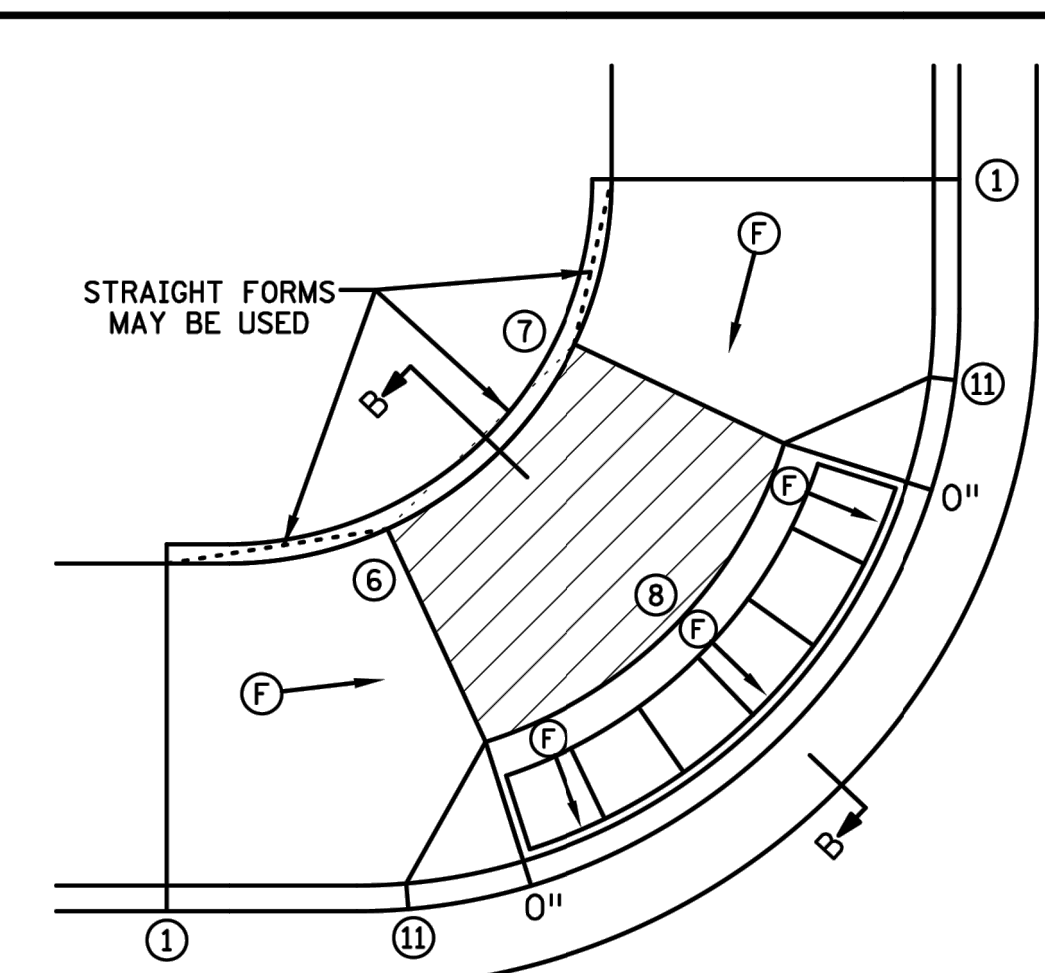
SECTION A-A
 PERPENDICULAR/TIERED/DIAGONAL



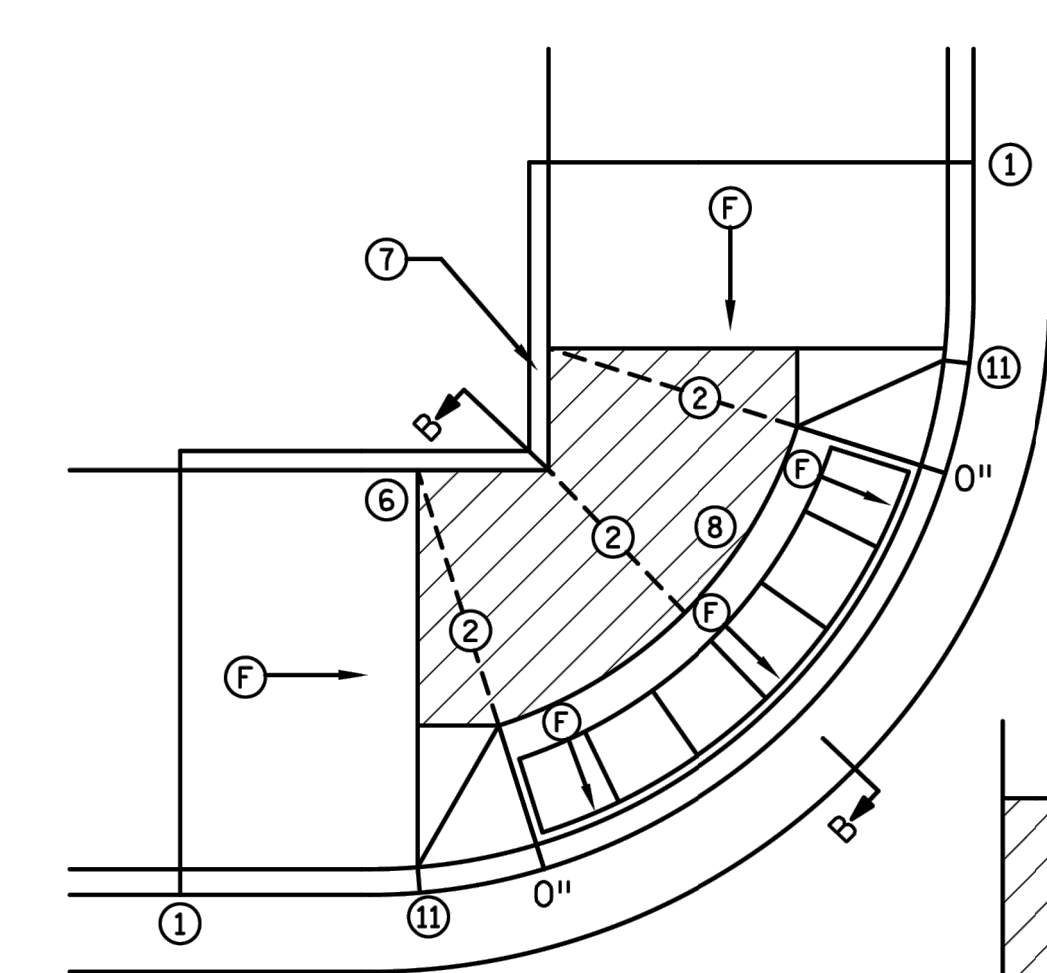
SECTION C-C
 PARALLEL/DEPRESSED CORNER



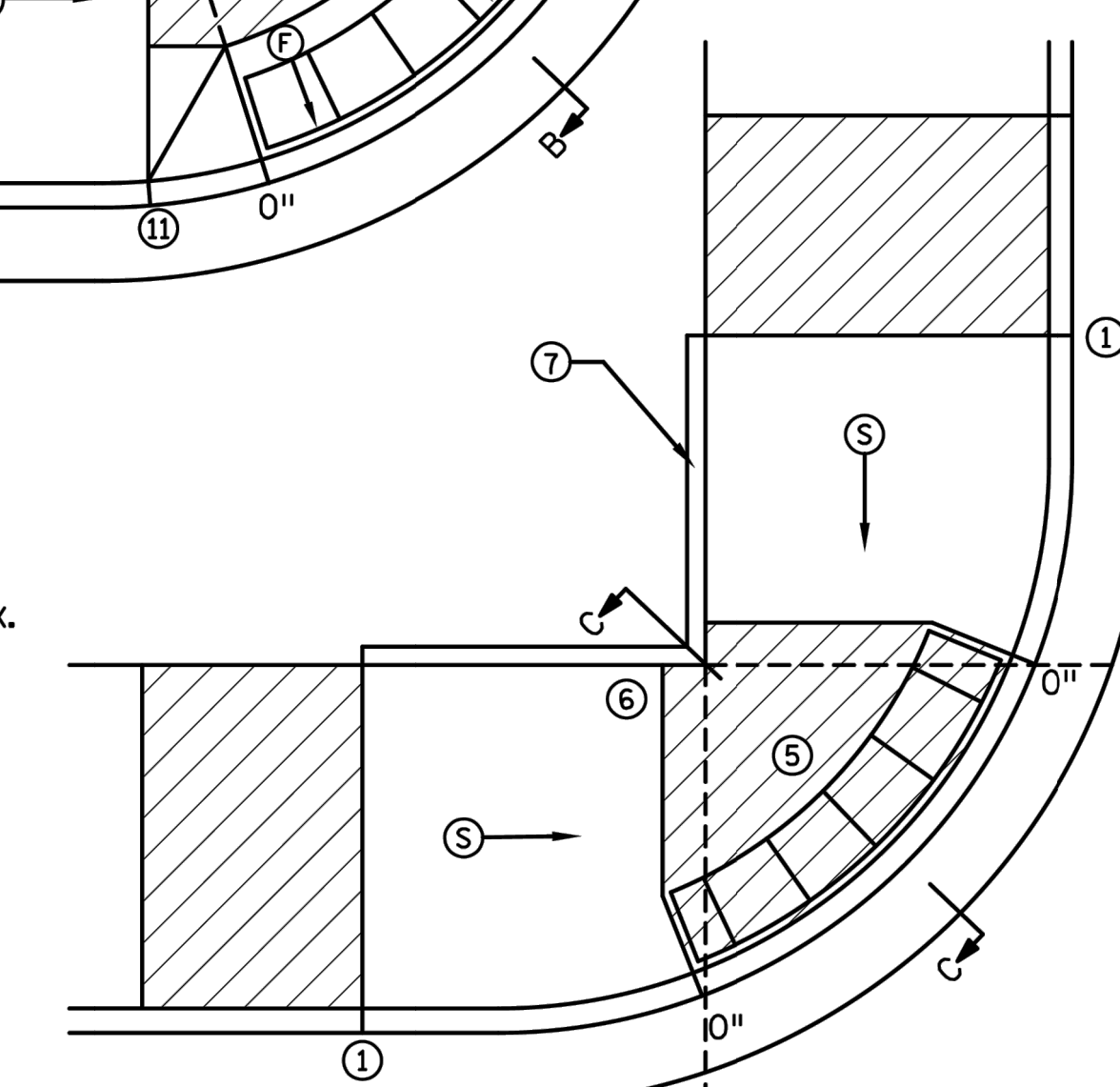
SECTION B-B
 FAN



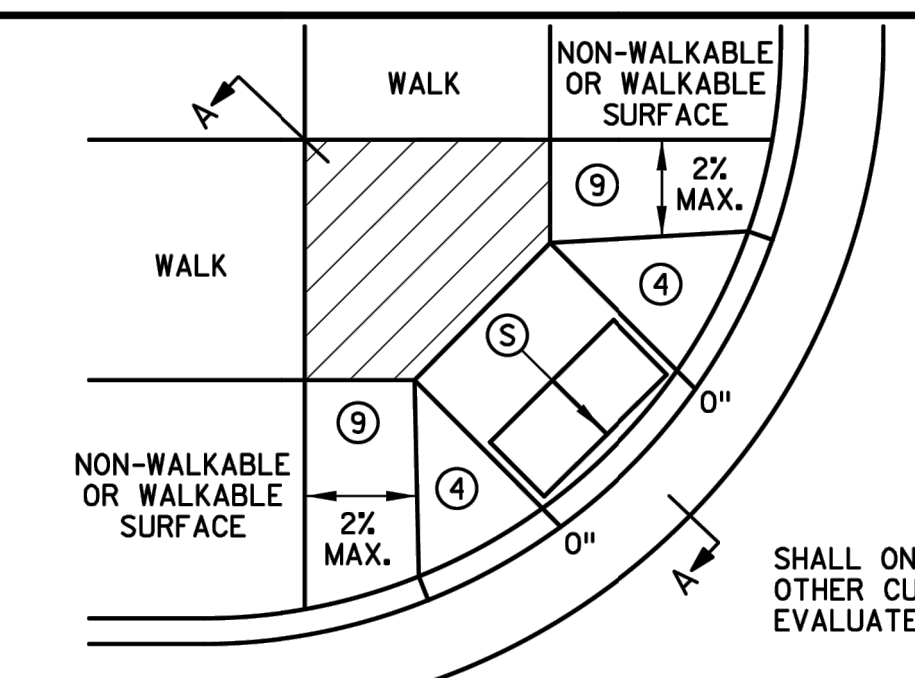
FAN 10



MODIFIED FAN 10
 USED WHEN RIGHT-OF-WAY IS CONSTRAINED



DEPRESSED CORNER



DIAGONAL

SHALL ONLY BE USED AFTER ALL OTHER CURB RAMP TYPES HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL

NOTES:

- LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE (PAR) CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE GREATER THAN 2%.
- INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE, ONLY APPLICABLE WHEN THE INITIAL RAMP RUNNING SLOPE IS OVER 5.0%.
- SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30" OF VERTICAL RISE WHEN THE LONGITUDINAL RUNNING SLOPE IS GREATER THAN 5.0%.
- CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PAR. 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOPS OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.
- ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL, THUS BOTH SIDES OF A SLOPED WALKING SURFACE MUST BE EQUAL LENGTH, (EXCEPT AS NOTED IN 6) BELOW.
- TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, ALL INITIAL LANDINGS AT A TOP OF A RAMPED SURFACE (RUNNING SLOPE GREATER THAN 2%) SHALL BE FORMED AND PLACED SEPARATELY IN AN INDEPENDENT CONCRETE POUR, FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 6 OF 6 FOR ALL SEPARATELY POURED INITIAL LANDINGS.
- WHEN SIDEWALK IS AT BACK OF CURB, TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE. MAINTAIN POSITIVE BOULEVARD DRAINAGE TO TOP OF CURB.
- ALL RAMP TYPES SHOULD HAVE A MINIMUM 3' LONG RAMP LENGTH.
- 4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MIN. OF 24" IN THE PATH OF TRAVEL. DETECTABLE WARNING TO COVER THE ENTIRE PAR WIDTH OF SHARED-USE PATHS AND THE ENTIRE PAR WIDTH OF THE WALK WITH THE EXCEPTION OF 3" MAXIMUM ON EACH OUTSIDE EDGE WHICH ENSURES THE DETECTABLE WARNINGS ARE ENCASED IN CONCRETE WHEN ADJACENT TO TURF. WHEN ADJACENT TO CONCRETE FLARES 0" - 3" OFFSET IS ALLOWED.
- WHEN DESIGNING OR ORDERING RECTANGULAR DETECTABLE WARNING SURFACES SHOULD BE 6" LESS THAN THE INCOMING PAR. ARC LENGTH OF THE RADIAL DETECTABLE WARNINGS SHOULD NOT BE GREATER THAN 20 FEET.
- RECTANGULAR DETECTABLE WARNINGS SHALL BE SETBACK 3" FROM THE BACK OF CURB. RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB.
- 1 MATCH FULL HEIGHT CURB.
- 2 4' MINIMUM DEPTH LANDING REQUIRED ACROSS TOP OF RAMP.
- 3 3" HIGH CURB WHEN USING A 3' LONG RAMP, 4" HIGH CURB WHEN USING A 4' LONG RAMP.
- 4 SEE SHEET 4 OF 6, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.
- 5 DETECTABLE WARNINGS MAY BE PART OF THE 4' X 4' MIN. LANDING AREA IF IT IS NOT FEASIBLE TO CONSTRUCT THE LANDING OUTSIDE OF THE DETECTABLE WARNING AREA.
- 6 THE GRADE BREAK SHALL BE PERPENDICULAR TO THE BACK OF WALK. THIS WILL ENSURE THAT THE GRADE BREAK IS PERPENDICULAR TO THE DIRECTION OF TRAVEL. (TYPICAL FOR ALL)
- 7 WHEN ADJACENT TO GRASS, GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS LESS THAN 5% RUNNING SLOPE SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.
- 8 A 7' MIN TOP RADIUS GRADE BREAK IS REQUIRED TO BE CONSTRUCTIBLE.
- 9 PAVE FULL WALK WIDTH.
- 10 "S" SLOPES ON FANS SHALL ONLY BE USED WHEN ALL OTHER FEASIBLE OPTIONS HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL.
- 11 INTERMEDIATE CURB HEIGHTS TAPER SHALL RISE AT 8-10% TO A MINIMUM 3" CURB HEIGHT. REDUCE INTERMEDIATE CURB HEIGHT TO 2+ INCHES IF NECESSARY TO MATCH ADJACENT BOULEVARD OR SIDEWALK GRADES.

LEGEND

	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.
	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.
	LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PARS.
	X" CURB HEIGHT

REVISION:
 APPROVED: 11-04-2021
Jeff J. Pel...
 OPERATIONS DIVISION



STANDARD PLAN 5-297.250 1 OF 6
 APPROVED: 11-04-2021
 REVISION:
 THOMAS TYRIBICKI
 STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

STATE PROJ. NO. (TH) SHEET NO. OF SHEETS

1 C503 PEDESTRIAN RAMP DETAIL NOT TO SCALE

PROJECT SPECIFIC SWPPP INFORMATION:

I. GENERAL CONSTRUCTION ACTIVITY INFORMATION

PROJECT NAME: BROOKSIDE TERRACE
PROJECT LOCATION: 15156 NOWHEN BLVD NW
 RAMSEY, MN 55303

PROJECT CONTACTS
OWNER: RON SIVIGNY
 1971 208TH LANE NW
 OAK GROVE, MN 55011
 CONTACT: 612-919-4812
 BROOKSIDECONSTINC@GMAIL.COM

ENGINEER: LARSON ENGINEERING, INC.
 3524 LABORE ROAD
 WHITE BEAR LAKE, MN 55110
 CONTACT: TOM HERKENHOFF, P.E., 320-428-5824,
 THERKENHOFF@LARSONENGR.COM

CONTRACTOR: COMPANY (TBD)
 ADDRESS
 CITY, STATE, ZIP
 CONTACT: NAME, PHONE, EMAIL

CITY WHERE WORK WILL TAKE PLACE: RAMSEY, MN
COUNTY WHERE WORK WILL TAKE PLACE: ANOKA

LATITUDE/LONGITUDE OF APPROXIMATE CENTROID OF PROJECT: 45° 14' 45" N, 93° 24' 57" W

PROJECT TYPE (CIRCLE ONE): RESIDENTIAL COMMERCIAL/INDUSTRIAL

ROAD CONSTRUCTION RESIDENTIAL & ROAD CONSTRUCTION

OTHER (DESCRIBE): _____

DATES OF CONSTRUCTION (ESTIMATED):
 Construction start date: 09/2025
 Construction completion date: 06/2026

PROJECT DESCRIPTION:
 This project will consist of the construction of a 6 new lots from an existing 3.2 acre parcel. The lots will have access from existing 151st Lane NW. The project will include lot grading, sidewalk, sanitary and water services, stormwater basin, and restoration.

PROJECT LIMITS:
 See the project plans, in particular the grading & erosion control plans, for site disturbance limits.

SITE DISTURBANCE SUMMARY (to nearest tenth acre):
 Total number of acres to be disturbed: 2.0
 Pre-Construction acres of impervious: 0.1
 Post-Construction acres of impervious: 0.7
 Total new impervious acres: 0.6

II. RECEIVING WATERS

RECEIVING WATERS (WITHIN ONE MILE OF PROJECT PROPERTY EDGE):

NAME OF WATER BODY	TYPE	SPECIAL WATER?	IMPAIRED WATER?
unnamed wetland	wetland	No	No

TOTAL MAXIMUM DAILY LOAD (TMDL) WATERS
 N/A

IDENTIFY WETLAND IMPACTS:

1. Will construction result in any potential adverse impacts to wetlands, including excavation, degradation of water quality, draining, filling, permanent inundation or flooding, conversion to a stormwater pond?
 No.

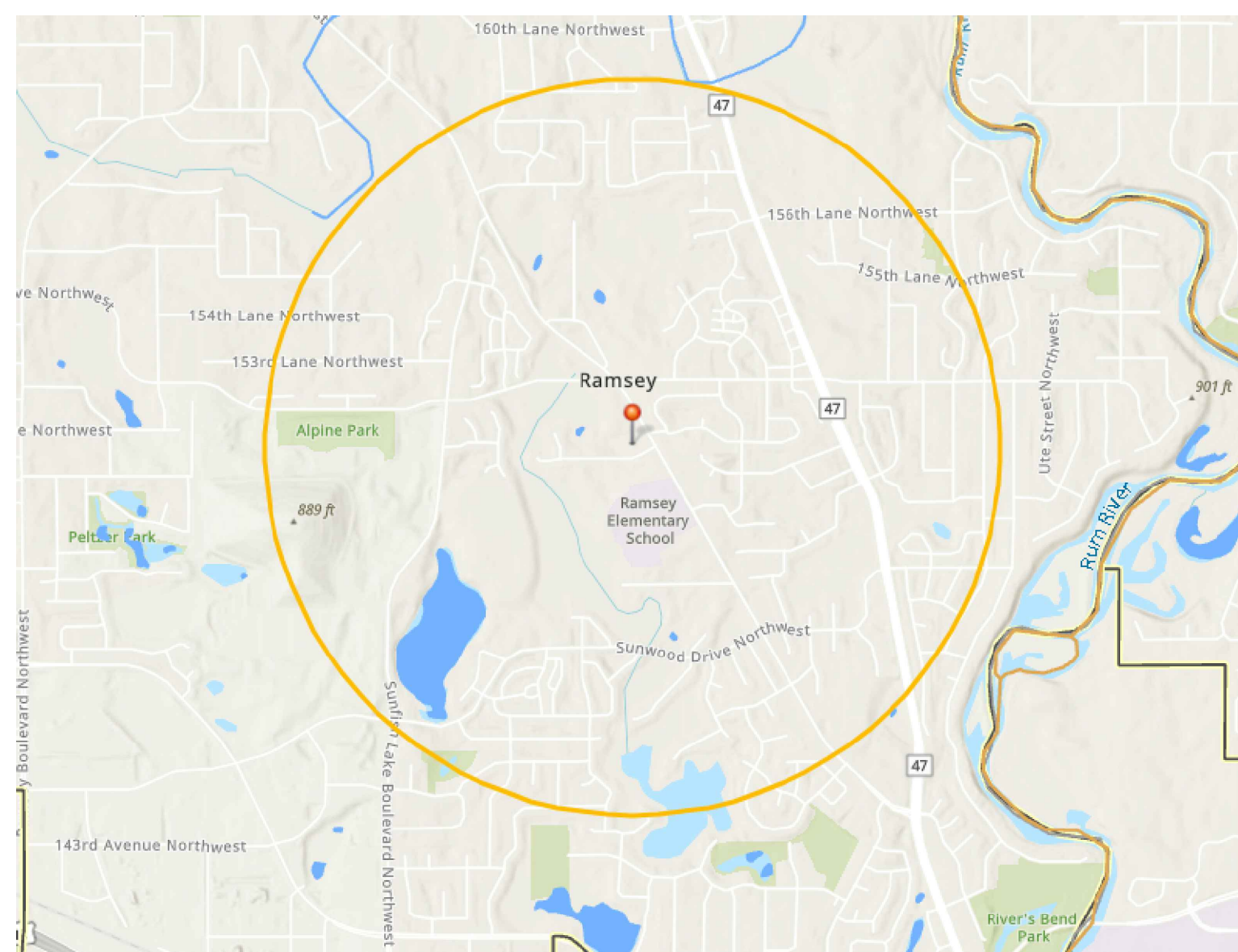
If yes, describe impacts and mitigation measures that were taken to address the impacts and include copies of permits or approvals from an official state wide wetland program issued specifically for this project or site:
 N/A

ENVIRONMENTALLY SENSITIVE AREAS:

1. Identify adjacent public waters where the MN DNR has declared "work in water restrictions" during fish spawning timeframes:
 None identified.

2. Describe any stormwater mitigation measures that will be implemented, as a result of an environmental review, endangered or threatened species review or archeological site review:
 N/A

PROJECT LOCATION AND RECEIVING WATERS MAP:



III. PROJECT PLANS AND SPECIFICATIONS

Refer to the project plans, specifications, geotechnical report, and stormwater calculations which depict various features that are relevant to this project. Such features may include, but are not limited to, the following:

- Project location and construction limits.
- Existing and final grades, including dividing lines and direction of flow for all pre and post-construction stormwater runoff drainage areas located within the project limits.
- Soil types at the site.
- Locations of impervious surfaces.
- Locations of areas not to be disturbed (e.g., buffer zones, wetlands, etc.)
- Steep slope locations.
- Locations of areas where construction will be phased to minimize duration of exposed soils.
- Locations of all temporary and permanent erosion control and sediment control best management practices (BMP's).
- Buffer zones as required in item 9.17 and 23.11 of the permit.
- Locations of potential pollution-generating activities identified in Section 12 of the permit.
- Standard details for erosion and sediment control BMP's to be installed at the site.

The anticipated erosion prevention and sediment control BMP quantities needed for the life of this project include the following. These quantities are estimated only and shall be verified by the Contractor.

BMP	Estimated Quantity	Final Quantity
Rock Construction Entrance	1 EA	_____
Silt Fence	860 LF	_____
Inlet Protection	3 EA	_____
Bioroll	580 LF	_____
FES Outlet Rip-Rap	1 EA (size per plan)	_____
Turf Seeding	2.0 ACRE	_____
Erosion Blanket	1,250 SY	_____

SOIL INFORMATION

Refer to geotechnical report for site specific soil information.

TEMPORARY SEDIMENT CONTROL (SITE SPECIFIC ITEMS)

1. Is the project required to install a temporary sediment basin due to 10 or more acres draining to a common location, or 5 acres or more if the site is located within 1 mile of a special or impaired water?
 No.
 If yes, describe (or attach plans) showing how the basin will be designed and constructed in accordance with Section 14.
 N/A
2. Will the project include dewatering, basin draining?
 No.
 If yes, describe measures to be used to treat/dispose of turbid or sediment-laden water and method to prevent erosion or scour of discharge points (see Section 10 of the permit):
 N/A. Based on soil boring results, dewatering is not anticipated.
3. Will the project include use of filters for backwash water?
 No.
 If yes, describe how filter backwash water will be managed on the site or properly disposed of:
 N/A

PERMANENT STORMWATER MANAGEMENT (SITE SPECIFIC ITEMS)

1. Will the project result in one acre or more of new impervious surface or result in one acre or more of new impervious in total if the project is part of a larger plan of development?
 No.
 If yes, a water quality volume of one inch of runoff from the cumulative new impervious surfaces must be retained on site (Section 15) through infiltration unless prohibited due to one of the reasons in item 16.14 through 16.21. If infiltration is prohibited, identify other methods of stormwater treatment used (e.g. filtration, wet sedimentation basin, regional ponding, or equivalent method).
 One (1) new infiltration basin is proposed as part of the project to provide the required water quality volume from the total new and fully reconstructed impervious areas.
2. Attach design parameters for the planned permanent stormwater management system, including volume calculations, discharge rate calculations, construction details including basin depth, outlet configurations, location, design of pre-treatment devices, and timing for installation.
 See the project plans and stormwater calculations.
3. For infiltration systems, provide at least one soil boring, test pit, or infiltrometer test in the location of the infiltration practice for determining infiltration rates.
 See the geotechnical evaluation reports contained within the stormwater calculations. Additional in-field testing and geotechnical observations are planned during construction to verify soil characteristics at the proposed basin location.
4. For projects that discharge to trout streams, including tributaries to trout streams, identify method of incorporating temperature controls into the permanent stormwater management system.
 N/A

SEQUENCE OF CONSTRUCTION ACTIVITIES

1. Install stabilized rock construction entrances.
2. Install perimeter erosion control BMP's (silt fence, bio-logs, etc).
3. Install temporary construction fencing at infiltration areas and other areas not be disturbed.
4. Install inlet protection throughout project area and downstream inlets.
5. Construct temporary sediment basins/traps as necessary.
6. Strip and stockpile topsoil.
7. Complete rough grading of site.
8. Stabilize denuded areas and stockpiles.
9. Install site utilities.
10. Install temporary inlet protection at newly installed catch basins/inlets.
11. Install curb and gutter and pavement sections.
12. Place topsoil and final grading of areas to be vegetated.
13. Remove accumulated sediment from basins / ponds.
14. Final grade pond and infiltration areas, including soil de-compaction as specified.
15. Complete stormwater basin as-built surveys (as required by project specifications and/or local jurisdictional authorities).
16. Complete permanent stabilization including plantings, seeding, and mulch.
17. Upon completion of construction activity and satisfactory vegetation establishment, remove remaining temporary erosion and sediment control BMPs.
18. Reseed / restore any areas disturbed during BMP removal.

SEEDING NOTES AND REQUIREMENTS:

1. The Contractor is responsible to salvage and preserve existing topsoil as necessary for final stabilization. All topsoil to be salvaged and re-used shall be processed as necessary to meet project specifications.
2. Prior to final seeding, all areas to be vegetated shall be scarified/decompacted and amended as specified in the plans and specifications.
3. Unless otherwise noted, all seed mixes and applications shall be in accordance with MNDOT Seeding Manual, latest edition.
4. See the project plans and specifications for seed mixtures, mulch, slope stabilization, and all other landscaping requirements.

FINAL STABILIZATION:

Ensure Final Stabilization of the site. Final Stabilization is not complete until all of the following requirements are complete:

1. All soil disturbing activities at the site have been completed and soils are stabilized by a uniform perennial vegetative cover with a density of 70 percent of its expected final growth over the entire pervious surface area, or other equivalent means necessary to prevent soil erosion under erosive conditions.
2. The permanent stormwater management system is constructed and operating as designed. Temporary or permanent sedimentation basins that are to be used as permanent water quality management basins have been cleaned of any accumulated sediment. All sediment has been removed from conveyance systems and ditches are stabilized with permanent cover.
3. All temporary synthetic and structural erosion prevention and sediment control BMPs (such as silt fence, bio-logs, etc.) have been removed from the site. BMPs designed to decompose on site may be left in place.
4. Upon correction of all erosion and sediment items and achieving vegetative cover, temporary erosion prevention and sediment control BMPs will be removed and properly disposed/recycled.
5. Within 30 days of final stabilization, a notice of termination shall be submitted to the MPCA (see Permit Termination Req's).

GENERAL SWPPP NOTES:

1. The Contractor and all Subcontractors involved with construction activity that disturbs soil, or implements a pollution control measure as part of the Storm Water Pollution Prevention Plan (SWPPP) for this project, must comply with the requirements of the National Pollution Discharge Elimination System (NPDES) / State Disposal System (SDS) Program, General Permit MNR10001, Dated August 1, 2023.
2. The Contractor and all Subcontractors shall be responsible for reviewing the NPDES Permit in its entirety, to ensure that all SWPPP measures are in place and permit requirements fulfilled throughout the duration of the project.

SWPPP TRAINING (SECTION 21):

SWPPP PREPARER: COMPANY: LARSON ENGINEERING, INC.
 CONTACT: TORRY KRAFTSON, 651-260-5159,
 TKRAFTSON@LARSONENGR.COM

COURSE, INSTRUCTOR: DESIGN OF SWPPP, ONLINE COURSE
TRAINING ENTITY: UNIVERSITY OF MINNESOTA
EXPIRATION: MAY 31, 2027

SWPPP CONTACT: CONTRACTOR: (TBD)
 CONTACT: NAME, PHONE, EMAIL
COURSE, INSTRUCTOR:
TRAINING ENTITY:
EXPIRATION:

This SWPPP was prepared by personnel certified in design of construction SWPPP's as listed above. Copies of respective certifications are available upon request. In accordance with Section 21 of the permit, the following individuals must receive training, and the content and extent of the training is commensurate with the individual's job duties and responsibilities with regard to activities covered under the permit:

- a. Individuals preparing the SWPPP for the project.
- b. Individuals overseeing implementation of, revising and/or amending the SWPPP, and individuals performing inspections for the project.
- c. Individuals performing or supervising the installation, maintenance and repair of BMP's.

Individuals must receive training from local, state, federal agencies, professional organizations, or other entities with expertise in erosion prevention, sediment control, permanent stormwater treatment and the MN NPDES/SDS Construction Stormwater permit. Individuals shall attend a refresher-training course every three (3) years.

SWPPP IMPLEMENTATION RESPONSIBILITIES:

1. Unless otherwise directed, the Contractor shall obtain the MPCA-NPDES permit. Contractor shall be responsible for all fees pertaining to this permit. The SWPPP shall be kept onsite at all times.
2. The Owner and Contractor are Permittee(s) as identified by the NPDES permit.
3. The Contractor shall be responsible for all on-site implementation of the SWPPP, including all Subcontractor activities.
4. The Contractor shall provide knowledgeable and experienced person(s) in the application, installation, and maintenance of Erosion and Sediment Control BMP's throughout the project.
5. The Contractor shall provide person(s) meeting the training requirements of the NPDES permit to conduct inspection and maintenance of all erosion prevention and sediment control BMP's in accordance with permit requirements. One of these individuals must be available for an on-site inspection within 72 hours upon request by the MPCA.
6. The Contractor shall provide training documentation for all individual(s) required by the permit. This training documentation shall be recorded in the SWPPP prior to construction, or as soon as personnel for the project have been determined. Documentation shall include:
 - a. Names of personnel associated with the project required to be trained (as listed above and under Section 21 of the permit).
 - b. Dates of training, name of instructor, and entity providing training.
 - c. Content of training course or workshop including number of hours of training.

INSPECTIONS AND MAINTENANCE:

1. The Contractor shall provide person(s) meeting the training requirements to conduct inspection and maintenance of all erosion prevention and sediment control BMP's under this project in accordance with permit requirements.
2. An example MPCA construction stormwater checklist can be found at the link below. Note: This template inspection report does not address all aspects of the NPDES Permit. The completion of this checklist does not guarantee that all permit requirements are in compliance; it is the responsibility of the Permittee(s) to read and understand the full permit requirements.

<https://www.pca.state.mn.us/sites/default/files/wq-strm2-36.docx>

RECORDS RETENTION:

The SWPPP, including all changes/amendments, and inspections and maintenance records shall be kept on site during normal working hours by individuals who have operational control of that portion of the site.

All Owner(s) shall keep the SWPPP, along with the following additional records, on file for three (3) years after submittal of the NOT as outlined in Section 4:

- a. The Final SWPPP;
- b. Any other stormwater related permits required for the project;
- c. Records of all inspection and maintenance conducted during construction;
- d. All permanent operation and maintenance agreements that have been implemented, including all Right-Of-Way, Contracts, Covenants, and other binding requirements regarding perpetual maintenance; and
- e. All required calculations for design of the temporary and permanent stormwater management systems.

PRELIMINARY NOT FOR CONSTRUCTION

Client:

Project Title:

BROOKSIDE TERRACE
 15156 NOWHEN BOULEVARD, RAMSEY, MN

I hereby certify that this plan, specifications 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.

Thomas J. Last
 First M. Last, P.E.

Date: 08.13.25 Lic. No.: 25520

Rev.	Date	Description
	08.13.25	City Comments

Project #: 12256081.000
 Drawn By: TRK
 Checked By: TJH
 Issue Date: 08.13.25

Sheet Title:

SWPPP

Sheet:

C600

Larson Engineering, Inc.
 3524 Labore Road
 White Bear Lake, MN 55110
 651.481.9120
 www.larsonengr.com



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GENERAL SWPPP REQUIREMENTS AND NOTES:

SWPPP AMENDMENTS (SECTION 6):

- One of the individuals described in item 21.2.a or 21.2.b of the permit or another qualified individual must complete all SWPPP changes. Changes involving the use of less stringent BMPs must include a justification describing how the replacement BMP is effective for the site characteristics.
- The SWPPP shall be amended to include additional or modified BMPs as necessary to correct problems identified or address situations whenever there is a change in design, construction, operation, maintenance, weather or seasonal conditions having a significant effect on the discharge of pollutants to surface waters or groundwater.
- The SWPPP shall be amended to include additional or modified BMPs as necessary to correct problems identified or address situations whenever inspections or investigations by the site owner or operator, USEPA or MPCA officials indicate the SWPPP is not effective in eliminating or significantly minimizing the ischarge of pollutants to surface waters or groundwater or the discharges are causing water quality standard exceedances (e.g., nuisance conditions as defined in Minn. R. 7050.0210, subp. 2 or the SWPPP is not consistent with the objectives of the USEPA approved TMDL.

BMP SELECTION AND INSTALLATION (SECTION 7):

- All BMPs identified in the SWPPP document and construction plans shall be selected, installed, and maintained in an appropriate and functional manner in accordance with relevant manufacturer specifications and accepted engineering practices.
- Do not disturb more land (i.e., phasing) than can be effectively inspected and maintained in accordance with Section 11.

TEMPORARY EROSION PREVENTION PRACTICES (SECTION 8)

- Prior to beginning any construction work at the site, locations of areas not to be disturbed must be delineated (e.g., with flags, stakes, signs, silt fence, snow fence, etc.) throughout the project site.
- Minimize the need for disturbance of portions of the project with steep slopes. For those sloped areas which must be disturbed, use techniques such as phasing and stabilization practices designed for steep slopes (e.g., slope draining and terracing).
- Stabilize all exposed soil areas (including stockpiles). Stabilization must be initiated immediately to limit soil erosion whenever any construction activity has permanently or temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days (or 7 days if within one mile of an identified impaired water). Stabilization must be completed no later than 14 calendar days (or 7 days if within one mile of an identified impaired water) after the construction activity has ceased.
- Stabilization is not required on constructed base components of roads, parking lots, and similar surfaces. Stabilization is not required on temporary stockpiles without significant silt, clay or organic components (e.g., clean aggregate stockpiles, demolition concrete stockpiles, sand stockpiles) but sediment controls must be placed at the base of the stockpile.
- For Public Waters that the Minnesota Department of Natural Resources has promulgated "work in water restrictions" during specified fish spawning time frames, all exposed soil areas that are within 200 feet of the water's edge, and drain to these waters must complete the stabilization activities within 24 hours during the restriction period.
- Stabilize the normal wetted perimeter of the last 200 linear feet of temporary or permanent drainage ditches or swales that drain water from the site within 24 hours after connecting to a surface water or property edge. Stabilize remaining portions of temporary or permanent ditches or swales within 14 calendar days (or 7 days if within one mile of an identified impaired water) after connecting to a surface water or property edge and construction in that portion of the ditch temporarily or permanently ceases.
- Temporary or permanent ditches or swales being used as sediment containment systems during construction (with properly designed rock-ditch checks, bio rolls, silt dikes, etc.) do not need to be stabilized during the temporary period of use as a sediment containment system. These areas must be stabilized within 24 hours after no longer being used for as a sediment containment system.
- Applying mulch, hydromulch, tackifier, polyacrylamide or similar erosion prevention practices is not acceptable within any portion of the normal wetted perimeter of a temporary or permanent drainage ditch or swale section with a continuous slope of greater than 2 percent.
- Pipe outlets must be provided with temporary or permanent energy dissipation within 24 hours after connection to a surface water or permanent stormwater treatment system.
- Route water around unstabilized areas on the site and to reduce erosion, unless infeasible. Use erosion controls and velocity dissipation devices such as check dams, sediment traps, riprap, or grooved riprap at outlets within and along the length of any constructed stormwater conveyance channel, and at any outlet, to provide a non-erosive flow velocity, to minimize erosion of channels and their embankments, outlets, adjacent stream banks, slopes, and downstream waters during discharge conditions.
- Unless infeasible due to lack of pervious or vegetated areas, direct discharges from BMPs to vegetated areas of the site (including any natural buffers) in order to increase sediment removal and maximize stormwater infiltration. Use velocity dissipation devices if necessary to prevent erosion when directing stormwater to vegetated areas.
- Infiltration areas shall not be excavated until all upstream areas have been stabilized and/or upstream BMPs are in place to properly prevent sediment deposition. Only low impact equipment shall be allowed in infiltration areas which shall be clearly identified, staked, and marked/fenced off.
- Project phasing shall be implemented to ensure land disturbance and temporary erosion control measures can be effectively inspected and maintained throughout the duration of the project in accordance with the Inspection and Maintenance requirements of Section 11.

TEMPORARY SEDIMENT CONTROL PRACTICES (SECTION 9)

- Sediment control practices must be established on all down gradient perimeters and be located upgradient of any buffer zones. The perimeter sediment control practices must be in place before any upgradient land-disturbing activities begin. These practices shall remain in place until Final Stabilization has been established.
- If downgradient sediment controls become overloaded, based on frequent failure or excessive maintenance requirements, additional upgradient sediment control practices or redundant BMPs shall be installed to eliminate the overloading concerns. All changes shall be recorded in the SWPPP.
- Temporary or permanent drainage ditches and sediment basins designed as part of a sediment containment system (e.g., ditches with rock-check dams) require sediment control practices only as appropriate for site conditions.
- A floating silt curtain placed in the water is not an acceptable sediment control BMP except when working on a shoreline or below the waterline. Immediately after construction activity (e.g., installation of rip rap along the shoreline) in that area is complete, upland perimeter control practices shall be installed if exposed soils still drain to a surface water.
- Re-install all sediment control practices that have been adjusted or removed to accommodate short-term activities such as clearing or grubbing, or passage of vehicles, immediately after the short-term activity has been completed. Complete any short-term activity that requires removal of sediment control practices as quickly as possible and re-install sediment control practices before the next precipitation event even if the short-term activity is not complete.
- All storm drain inlets must be protected by appropriate BMPs during construction until all sources with potential for discharging to the inlet have been stabilized. Inlet protection may be removed for a particular inlet if a specific safety concern (street flooding/freezing) has been identified by the Permittee(s) or the jurisdictional authority (e.g., city/county/township/MnDOT engineer).The Permittee(s) must document the need for removal in the SWPPP.
- Temporary soil stockpiles must have silt fence or other effective sediment controls, and cannot be placed in any natural buffers or 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.
- Where vehicle traffic leaves any part of the site (or onto paved roads within the site) install a vehicle tracking BMP to minimize the track out of sediment from the construction site. Examples of vehicle tracking BMPs include (but are not limited to) rock pads, mud mats, slash mulch, concrete or steel wash racks, or equivalent systems. Use street sweeping if such vehicle tracking BMPs are not adequate to prevent sediment from being tracked onto the street.
- The Permittee(s) must install temporary sedimentation basins as required in accordance with permit requirements.
- Minimize soil compaction by restricting vehicle access in areas where final vegetative stabilization will occur, unless otherwise infeasible.
- Discharges from BMPs shall be directed to vegetated areas unless infeasible.
- Preserve a 50 foot natural buffer or (if a buffer is infeasible on the site) provide redundant (double) perimeter sediment controls when a surface water is located within 50 feet of the project's earth disturbances and stormwater flows to the surface water.
- Perimeter sediment controls shall be installed at least 5 feet apart unless limited by lack of available space. Natural buffers are not required adjacent to road ditches, judicial ditches, county ditches, stormwater conveyance channels, storm drain inlets, and sediment basins. If preserving the buffer is infeasible, the reasons for which shall be recorded in the SWPPP.
- The use of polymers, flocculants, or other sedimentation treatment chemicals, if used on the project, shall be used in accordance with accepted engineering practices, dosing specifications, and sediment removal design specifications provided by the product manufacturer or supplier. Use conventional erosion and sediment controls prior to the chemical addition to ensure effective treatment. Chemicals may only be applied where treated stormwater is directed to a sediment control system which allows or filtration of settlement of the floc prior to discharge.
- If the proposed project as shown on the plans has 10 or more acres draining to a common location or 5 acres or more if the site is within one mile of a special or impaired water (as identified in Section II - Receiving Waters and Environmentally Sensitive Areas), then a temporary sediment basin must be constructed as shown on the plans. Temporary sediment basins will have a minimum of 3,600 cubic feet of storage per acre draining to the basin. The basin outlet shall provide for discharging water from the surface to minimize discharging of pollutants. A stabilized emergency overflow shall be constructed.

DEWATERING AND BASIN DRAINING (SECTION 10)

- Discharge turbid or sediment-laden waters related to dewatering or basin draining (e.g., pumped discharges, trench/ditch cuts for drainage) to a temporary or permanent sediment basin on the project site unless infeasible. Discharge from the temporary or permanent sedimentation basins to surface waters if the basin water has been visually checked to ensure adequate treatment has been obtained in the basin and that nuisance conditions will not result from the discharge. If the water cannot be discharged to a sedimentation basin prior to entering the surface water, it must be treated with the appropriate BMPs, such that the discharge does not adversely affect the receiving water or downstream properties.
- Discharge water that contains oil or grease, must use an oil-water separator or suitable filtration device (e.g. cartridge filters, absorbents pads) prior to discharging the water.
- All water from dewatering or basin-draining activities must be discharged in a manner that does not cause nuisance conditions, erosion in receiving channels or downslope properties, erosion or scour in the immediate vicinity of discharge points, or inundation in wetlands causing significant adverse impact to the wetland.
- The use of filters with backwash water, 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 cause erosion. Discharge backwash water to the sanitary sewer if permission is granted by the sanitary sewer authority. Replace and clean the filter media used in dewatering devices when required to retain adequate function.

INSPECTIONS AND MAINTENANCE (SECTION 11)

- Owner and Contractor shall ensure that a trained person (as identified in item 21.2.b) of the permit will inspect the entire construction site at a minimum:
 - Once every seven (7) days during active construction, and
 - Within 24 hours after a rainfall event greater than 1/2 inch in 24 hours
- Inspect all erosion prevention and sediment control BMPs and Pollution Prevention Management Measures to ensure integrity and effectiveness during all routine and post-rainfall event inspections. All nonfunctional BMPs must be repaired, replaced, or supplemented with functional BMPs by the end of the next business day after discovery, or as soon as field conditions allow access unless another time frame is specified below. Investigate and comply with the following Inspection and Maintenance requirements:
 - All perimeter control devices must be repaired, replaced, or supplemented when they become nonfunctional or the sediment reaches one-half (1/2) of the height of the device. These repairs must be made by the end of the next business day after discovery, or thereafter as soon as field conditions allow access.
 - Temporary and permanent sedimentation basins must be drained and the sediment removed when the depth of sediment collected in the basin reaches one-half (1/2) the storage volume. Drainage and removal must be completed within 72 hours of discovery, or as soon as field conditions allow access.
 - Inspect and photograph dewatering discharges at the beginning and at least once every 24 hours during operation.
 - Surface waters, including drainage ditches and conveyance systems, must be inspected for evidence of erosion and sediment deposition during each inspection. Remove all deltas and sediment deposited in surface waters, including drainage ways, catch basins, and other drainage systems, and restabilize the areas where sediment removal results in exposed soil. The removal and stabilization must take place within seven (7) days of discovery unless precluded by legal, regulatory, or physical access constraints. Use all reasonable efforts to obtain access. If precluded, removal and stabilization must take place within seven (7) calendar days of obtaining access. Contact all local, regional, state and federal authorities and receiving any applicable permits, prior to conducting any work in surface waters.
 - Construction site vehicle exit locations must be inspected for evidence of off-site sediment tracking onto paved surfaces. Tracked sediment must be removed from all paved surfaces both on and off site within 24 hours of discovery, or if applicable, within a shorter time.
 - Streets and other areas adjacent to the project must be inspected for evidence of off-site accumulations of sediment. If sediment is present, it must be removed in a manner and at a frequency sufficient to minimize off-site impacts (e.g., fugitive sediment in streets could be washed into storm sewers by the next rain and/or pose a safety hazard to users of public streets).
- Inspection frequency adjustment:
 - Inspections of areas with permanent cover can be reduced to once per month, even if construction activity continues on other portions of the site; or
 - where sites have permanent cover on all exposed soil and no construction activity is occurring anywhere on the site, inspections can be reduced to once per month and, after 12 months, may be suspended completely until construction activity resumes. The MPCA may require inspections to resume if conditions warrant; or
 - where construction activity has been suspended due to frozen ground conditions, inspections may be suspended. Inspections must resume within 24 hours of runoff occurring, or upon resuming construction, whichever comes first.
- All inspections and maintenance activities within 24 hours of being conducted must be recorded and retained in the SWPPP. These records must include:
 - Date and time of inspections
 - Name of person(s) conducting inspections
 - Findings of inspections, including the specific location where corrective actions are needed
 - Corrective actions taken (including dates, times, and party completing maintenance activities)
 - Date and amount of all rainfall events greater than 1/2 inch (0.5 inches) in 24 hours. Rainfall amounts must be obtained by a properly maintained rain gauge installed onsite, a weather station that is within 1 mile of your location or a weather reporting system that provides site specific rainfall data from radar summaries.
 - If any discharge is observed to be occurring during the inspection, a record of all points of the property from which there is a discharge must be made, and the discharge should be described (i.e., color, odor, floating, settled, or suspended solids, foam, oil sheen, and other obvious indicators of pollutants) and photographed.
 - Any amendments to the SWPPP proposed as a result of the inspection must be documented within seven (7) calendar days.
- All infiltration areas must be inspected to ensure that no sediment from ongoing construction activity is reaching the infiltration area. All infiltration areas must be inspected to ensure that equipment is not being driven across the infiltration area.

POLLUTION PREVENTION MANAGEMENT MEASURES (SECTION 12)

Implement the following pollution prevention management measures on the site:

- Storage, Handling, and Disposal of Construction Products, Materials, and Wastes 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: Take reasonable steps to prevent the discharge of spilled or leaked chemicals, including fuel, from any area where chemicals or fuel will be loaded or unloaded including the use of drip pans or absorbents unless infeasible. Conduct fueling in a contained area unless infeasible. 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. Report and clean up spills immediately as required by Minn. Stat. § 115.061, using dry clean up measures where possible.
- Vehicle and equipment washing: Wash 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 and waste from the washing activity must be properly disposed of. Properly use and store soaps, detergents, or solvents. No engine degreasing is allowed on site.
- Concrete and other washouts waste: 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 containment 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.

PERMIT TERMINATION (SECTIONS 4 AND 13)

- Permittees must submit a NOT within 30 days after all termination conditions listed in Section 13 are complete.
- Permittees must submit a NOT within 30 days after selling or otherwise legally transferring the entire site, including permit responsibility for roads (e.g., street sweeping) and stormwater infrastructure final clean out, or transferring portions of a site to another party. The permittees' coverage under the permit terminates at midnight on the submission date of the NOT.
- Permittees may terminate permit coverage prior to completion of all construction activity if they meet all of the following conditions:
 - Construction activity has ceased for at least 90 days; and
 - at least 90 percent (by area) of all originally proposed construction activity has been completed and permanent cover has been established on those areas; and
 - on areas where construction activity is not complete, permanent cover has been established; and
 - the site complies with items 13.3 through 13.7 of the permit.

After permit coverage is terminated under this item, any subsequent development on the remaining portions of the site will require permit coverage if the subsequent development itself or as part of the remaining common plan of development or sale will result in land disturbing activity of one (1) or more acres in size.
- Permittees may terminate coverage upon MPCA approval after submitting information documenting the owner canceled the project.
- Permittees must complete all construction activity and must install permanent cover over all areas prior to submitting the NOT. Vegetative cover must consist of a uniform perennial vegetation with a density of 70 percent of its expected final growth. Vegetation is not required where the function of a specific area dictates no vegetation, such as impervious surfaces or the base of a sand filter.
- Permittees must clean the permanent stormwater system of any accumulated sediment and must ensure the system meets all applicable requirements in Section 15 through 19 of the permit and is operating as designed.
- Permittees must remove all sediment from conveyance systems prior to submitting the NOT.
- Permittees must remove all temporary synthetic erosion prevention and sediment control BMPs prior to submitting the NOT. BMPs designed to decompose on-site may be left in place.
- For residential construction only, permit coverage terminates on individual lots if the structures are finished and temporary erosion prevention and downgradient perimeter control is complete, the residence sells to the homeowner, and the permittee distributes the MPCA's "Homeowner Fact Sheet" to the homeowner.
- For construction projects on agricultural land (e.g., pipelines across cropland), disturbed land must be returned to its preconstruction agricultural condition prior to submitting the NOT.
- When submitting the NOT, permittees must include either ground or aerial photographs showing vegetative cover requirements have been met as listed above. All submitted photographs shall include the date and specific site location.

LONG TERM OPERATION AND MAINTENANCE:

- Upon the completion of construction activity and NPDES permit termination, in accordance with Sections 4 and 13, the Property Owner shall become the responsible party for long term operation and maintenance (O&M) of all permanent stormwater management features under this project.
- All associated operations, inspections, maintenance, and record keeping shall be performed by trained individual(s) familiar with the site stormwater management system.
- Record keeping of inspections and maintenance items shall be maintained by the Owner in accordance with applicable Maintenance Agreements/Declarations as required by local jurisdictional authorities.

Client:

Project Title:

BROOKSIDE TERRACE CONSTRUCTION

OAK GROVE, MN

PRELIMINARY NOT FOR CONSTRUCTION

BROOKSIDE TERRACE

15156 NORTHEN BOULEVARD, RAMSEY, MN

I hereby certify that this plan, specifications 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.

Thomas J. Hahn
 First M. Last, P.E.
 Date: 08.13.25 Lic. No.: 25520

Rev.	Date	Description
	08.13.25	City Comments

Project #: 12256081.000
 Drawn By: TRK
 Checked By: TJH
 Issue Date: 08.13.25

Sheet Title:
 SWPPP

Sheet:
C601