



January 18, 2025

Mr. Sean Homyen
Planning & Zoning Administrator
City of the Village of Douglas
86 W Center Street
Douglas, MI 49406-0757

Re: Golfview Drive Reconstruction
Westshore Condominiums
City of the Village of Douglas, Allegan County

Dear Sean:

Enclosed are the following documentation for the reconstruction of Golfview Drive:

- As-built record plans. These are a revision to the previously published record plans.
- Inspection and testing reports from October 7 thru October 11, 2024, during the course of the field construction work.
- Engineers certificate.

Based on Ken Bosma's email dated February 20, 2024, we provide the following comments:

- Soils and Structures must be on site as note in the Special Conditions 1.
 - *Soils & Structures completed all inspection and testing per the approved plans and their initial report dated December 20, 2023.*
- An Engineer's Certificate will need to be provided to the City that the complete improvements were completed be the approved specifications and drawings.
 - *This is included with this submittal.*
- Testing requirements are completed per the report and copies submitted to the City.
 - *Soils & Structures completed all inspection and testing per the approved plans and their initial report dated December 20, 2023.*
- Drain tiles are installed as noted in the "Drainage Considerations for Pavement Areas" of Soils and Structures report. (We note that the proposal did not include any of this.)
 - *The only drain tile that was added was at the existing catchbasin at the end of the road. Based on Soils & Structures inspection and contractor proof rolling on October 8, 2024, no additional drain tiles were necessary.*

- If Option 2 – Crush and Shape is chosen, any reduction in valley curb due to increase in road height shall be reviewed that drainage is not increased at driveway location.
 - *This option was not used. Full depth mill and overlay (Option 3) was implemented.*
- All “soft spots”, if any, will be addressed as noted per Soils and Structures report. (We note the proposal does not appear to include any of this work.)
 - *No soft spots were encounter during the work as documented by the Soils & Structures inspection and testing reports.*
- The record drawings will need to be provided to indicate when the road work was completed, include any added drainage items, and submit to the City.
 - *As built record plans are included with this submittal.*

We request review and approval of the abovementioned documents at your earliest convenience.

If you have any questions or need additional information, please contact me at (616) 575-5190 or via email at jbarr@nederveld.com.

Sincerely,



Jack Barr, P.E.
Director of Engineering

Enclosures

cc: Ken Bosma P.E. - Prein & Newhof
Ric Dyk - BDR



Daily Report

Project Title:	Golfview Drive Reconstruction	Project No.:	2024.2038
Project Location:	Douglas, MI	Date:	10/07/2024
Client:	BDR Inc	Weather:	Sunny
Inspected By:	Marlee Lechner	Temperature (°F):	61

Type of Inspection:	X	Soil		Concrete		Masonry
	X	Pavement		Steel		Other: X

Summary of Work Performed, Observations and Recommendations:

Soils & Structures arrived onsite to observe Dykgraaf Excavating remove approximately 18,929 square feet of asphalt. Dykgraaf excavating utilized a CAT D5G XL Bulldozer to remove the asphalt and a Komatsu WA320 Front Loader to haul the asphalt to dump trucks to be hauled offsite. A CAT 304 mini excavator and a CAT 255 skidsteer were also used to aid in the removal of the asphalt.

Soils & Structures performed hand auger depth checks on the aggregate base to verify 8" of aggregate base is present throughout the site. Five hand augers were performed with depths of aggregate base ranging between 9 and 11 inches.

Photo 1	Photo 2	Photo 3	Photo 4

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(800) 933-3959

BENCHMARK #13: ELEV.= 611.17 (NGVD29)
SET RAILROAD SPIKE IN NORTH SIDE OF UTILITY POLE LOCATED 6' SOUTH OF THE SOUTH EDGE OF PAVEMENT FOR CENTER STREET & 7' WEST OF THE EAST LINE OF THE EXISTING BUILDING TO THE NORTH.

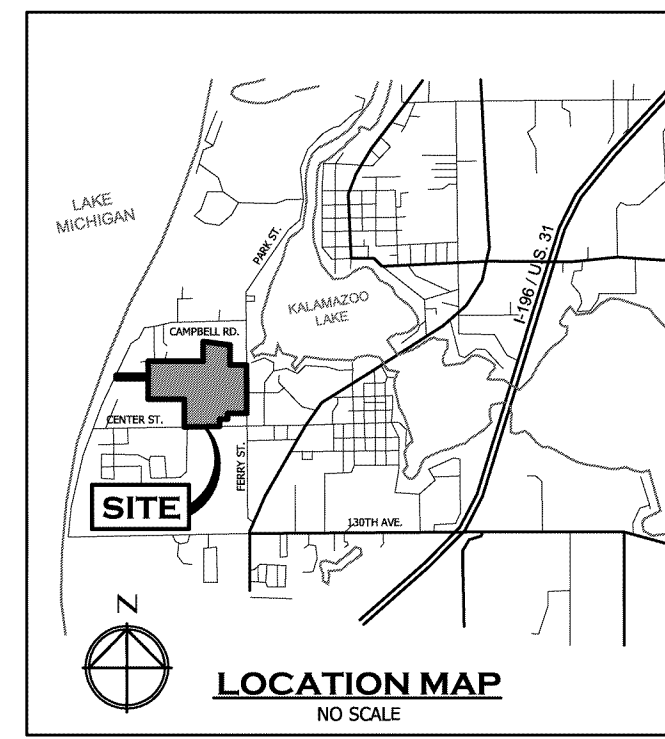
BENCHMARK #20: ELEV.= 634.92 (NGVD29)
SET RAILROAD SPIKE IN NORTH SIDE OF 60' ASH TREE LOCATED 28' EAST OF THE END OF GOLVIEW DRIVE & 360' SOUTH OF THE NORTH SIDE OF PAVEMENT FOR GOLVIEW DRIVE.

BENCHMARK #2144: ELEV.= 621.77 (NGVD29)
RAILROAD SPIKE IN NORTH SIDE OF UTILITY POLE LOCATED 9' EAST OF THE EAST EDGE OF PAVEMENT FOR FERRY STREET & 1000' NORTH OF THE EAST 1/4 CORNER OF SECTION 17.

BENCHMARK #2212: ELEV.= 627.02 (NGVD29)
RAILROAD SPIKE IN WEST SIDE OF UTILITY POLE LOCATED 9' EAST OF THE EAST EDGE OF PAVEMENT FOR FERRY STREET & 630' NORTH OF THE EAST 1/4 CORNER OF SECTION 17.

LEGEND

- EX. GRADE CONTOUR
- PROP. GRADE CONTOUR
- PROP. GRADE ELEV. (BLACKTOP)
- PROP. GRADE ELEV. (GUTTER)
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- PROP. SANITARY SEWER
- PROP. WATERMAIN
- PROP. LIMITS OF GRADING
- PROP. SILT FENCE
- WETLAND BOUNDARY FLAGS
- WETLAND AREA
- MONITORING WELL
- EXIST. TREELINE
- SOIL EROSION CONTROL MATTING
- SOIL BORING LOCATION



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Soil Erosion/Sedimentation
Control and Grading Plan
of
Golfview Drive (Private)
WESTSHORE PHASE 1B

**DOUGLAS PROPERTY
DEVELOPMENT, LLC**
Attention:
Kevin Einfeld
5510 Cascade Road SE, Suite 21
Grand Rapids, MI 49506
Phone: (616) 458-8505

date	comment	no.	date	comment	no.	date	comment	no.	date	comment	no.
03/14/13	CONSTRUCTION PLAN SUBMITTAL	1	03/14/13	CONSTRUCTION PLAN SUBMITTAL	1	03/14/13	CONSTRUCTION PLAN SUBMITTAL	1	03/14/13	CONSTRUCTION PLAN SUBMITTAL	1
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sheet no.:
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Know what's below.
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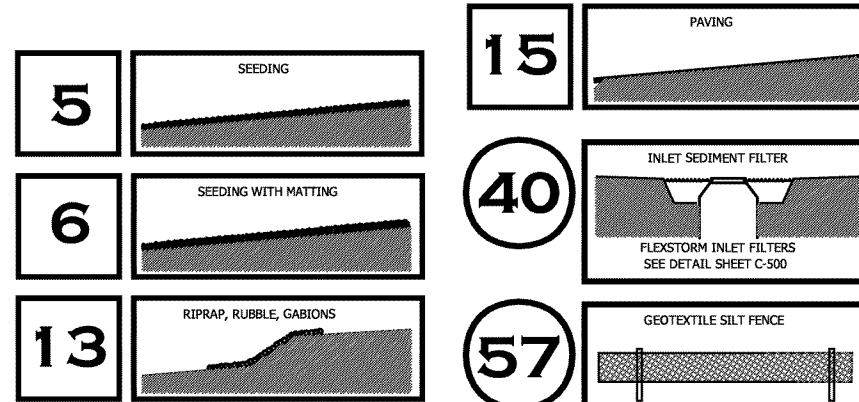
UTILITY LOCATIONS ARE DERIVED FROM ACTUAL MEASUREMENTS OR AVAILABLE RECORDS. THEY SHOULD NOT BE INTERPRETED TO BE EXACT LOCATIONS NOR SHOULD IT BE ASSUMED THAT THEY ARE THE ONLY UTILITIES IN THIS AREA.

NOTE:
EXISTING UTILITIES AND SERVICE LINES IDENTIFIED AS "PLAN" WERE OBTAINED FROM AVAILABLE CITY AS-BUILT RECORD DRAWINGS. THE CONTRACTOR SHALL VERIFY THE LOCATION, DEPTH AND STATUS OF ALL UTILITIES AND SERVICE LINES PRIOR TO NEW CONNECTIONS.

NOTE:
SEDIMENT BASIN #1 TO BE BUILT & STABILIZED FIRST BEFORE ANY OTHER CONSTRUCTION WORK. STORM DISCHARGE TO THE SEDIMENT BASIN SHOULD NOT OCCUR UNTIL THE BASIN IS FULLY STABILIZED.

ALL WORK WITHIN REGULATED WETLANDS SHALL BE COMPLETED IN ACCORDANCE WITH MDEQ PERMIT #

NOTE: ALL FILL AREAS, INCLUDING UTILITY TRENCHES, BUILDING ENVELOPES AND STREETS ARE TO BE COMPACTED IN 12" LOOSE LIFTS (CLAY AREAS: 4" - 6" LIFTS) TO 95% MAX. DRY DENSITY AS DETERMINED BY MICHIGAN CONE OR MODIFIED PROCTOR (ASTM D-1557) TESTING.



SOIL EROSION AND SEDIMENTATION CONTROL NOTES:

- 1) CONTRACTOR SHALL POSSESS THE SOIL EROSION AND SEDIMENTATION CONTROL PERMIT PRIOR TO START OF ANY EARTHWORK.
- 2) CONTRACTOR SHALL MODIFY THIS SOIL EROSION AND SEDIMENTATION CONTROL PLAN TO SHOW THE ADDITIONAL CONTROL MEASURES INTENDED TO BE USED DURING CONSTRUCTION. SUBMIT MODIFICATIONS TO THE CONTROLLING AGENCY, THE OWNER, AND THE ENGINEER.
- 3) EROSION PROTECTION SHALL BE PROVIDED AT ALL STORM SEWER INLETS AND OUTLETS. ALL BARE EARTH SHALL BE STABILIZED WITH SEEDING.
- 4) LOCATION AND TYPE OF EROSION CONTROL MEASURES ARE IDENTIFIED ON THE SKETCH BY KEY NUMBERS, 5-40, RELATING TO THE MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY (MDEQ) EROSION CONTROL AND BEST MANAGEMENT PRACTICES.
- 5) A 150 FOOT LONG, 6 INCH DEEP CRUSHED CONCRETE ENTRANCE SHALL BE INSTALLED WHERE EARTH MOVERS WILL BE ENTERING & EXITING THE SITE. ALL DIRT, CLAY ROCK, AND OTHER SOIL SHALL BE CLEARED FROM THE ROAD RIGHT-OF-WAY.
- 6) ALL DIRT STOCKPILES SHALL HAVE SILT FENCE AROUND THEM.
- 7) ALL INLET FILTERS AND SILT FENCE SHALL BE INSPECTED WEEKLY AND AFTER STORM EVENTS TO ENSURE THOSE CONTROLS ARE WORKING OPTIMALLY.
- 8) VEGETATIVE FILTER STRIPS SHALL BE PLACED ON ALL AREAS OF THE DEVELOPMENT WHERE SLOPES EXCEED 1% BUT ARE LESS THAN 5% AND MUST BE AT LEAST 20' WIDE. WORKER MULCH BARRIERS SHALL BE PLACED IMMEDIATELY OVER SCAFFOLD SLOPES AND MAINTAINED UNTIL VISIBLE VEGETATIVE GROWTH HAS BEEN ESTABLISHED. SLOPES GREATER THAN 5% SHOULD HAVE DIVERSIONS OR ANY OTHER CONCEIVABLE CONTROL TO CARRY WATER AWAY FROM THESE AREAS UNTIL VEGETATIVE GROWTH OCCURS.



Daily Report

Project Title:	Golfview Drive Reconstruction	Project No.:	2024.2038
Project Location:	Douglas, MI	Date:	10/08/2024
Client:	BDR Inc	Weather:	Sunny
Inspected By:	Marlee Lechner	Temperature (°F):	62

Type of Inspection:	X	Soil		Concrete		Masonry
		Pavement		Steel		Other: X

Summary of Work Performed, Observations and Recommendations:

Soils and Structures arrived onsite to observe Dykgraaf Excavating install ring wrap at the catch basin in the easternmost section of the work area. Dykgraaf excavating also rough graded and compacted the site.

Dykgraaf Excavating utilized the CAT 304 mini excavator to dig out the trench for the ring wrap. The trench was lined with nonwoven geotextile fabric. The ring wrap was surrounded by pea stone. The fabric was wrapped around the ring wrap and pea stone before being covered up with the aggregate base. The curb inlet casting was adjusted to lower the finished elevation. Dykgraaf Excavating sealed the ring wrap penetration and the casting to the catch basin with grout. The aggregate base was compacted with a Wacker Neuson plate compactor.

Dykgraaf Excavating used a CAT D5G XL Bulldozer to rough grade the aggregate base and a CAT CS54 vibratory smooth drum roller for compaction.

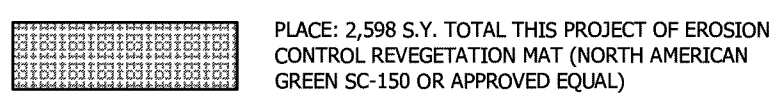
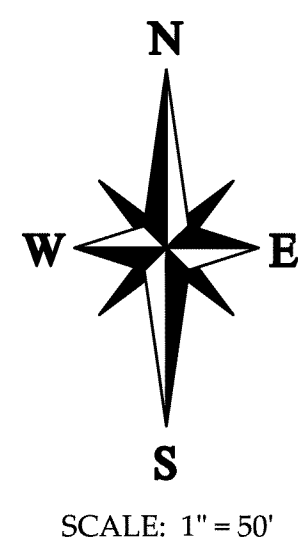
Dykgraaf Excavating performed a proof roll with a fully loaded dump truck over the aggregate base, no pumping, rutting, or deflection was observed.



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RAILROAD SPIKE IN WEST SIDE OF UTILITY POLE LOCATED 9' EAST OF THE
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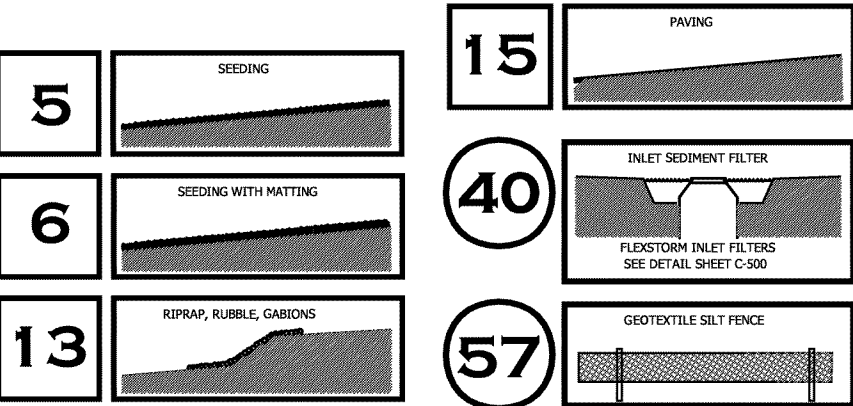
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	SOIL BORING LOCATION



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SOIL EROSION AND SEDIMENTATION CONTROL NOTES:

- | | |
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|--|--|

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Soil Erosion/Sedimentation
Control and Grading Plan
of
Golfview Drive (Private)

WESTSHORE PHASE 1B

PART OF OF SECTION 17, T3N, R16W,
CITY OF DOUGLAS, ALLEGAN COUNTY, MICHIGAN

DOUGLAS PROPERTY

Attention:
Kevin Finfeld

5510 Cascade Road SE, Suite 21
Grand Rapids, Michigan 49546

checked	date	no.	comment	date
	09/14/13	1	CONSTRUCTION PLAN SUBMITTAL	03/14/13
	09/22/13	2	ALLEGAN COUNTY 3595C AGENT	03/22/13
	08/07/13	3	CITY ENGINEER	03/27/13
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project no.:
13200132

C-300

sheet no.:
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Daily Report

Project Title:	Golfview Drive Reconstruction	Project No.:	2024.2038
Project Location:	Douglas, MI	Date:	10/09/2024
Client:	BDR Inc	Weather:	Sunny
Inspected By:	Marlee Lechner	Temperature (°F):	61

Type of Inspection:	X	Soil		Concrete		Masonry
		Pavement		Steel		Other: X

Summary of Work Performed, Observations and Recommendations:

Soils and Structures arrived onsite to observe Bruce's Blacktop finish grade the aggregate base and Dykgraaf Excavating perform final compaction.

Dykgraaf Excavating supplied a sanitary sewer casting to replace one that was damaged during construction operations near the westernmost section of the work area. Dykgraaf Excavating removed the damaged casting and installed the new casting on the manhole. The casting connection was sealed with grout.

Bruce's Blacktop used a Takeuchi TL230 skidsteer with a grader attachment to finish grade the aggregate base and Dykgraaf Excavating used CAT CS54 vibratory smooth drum roller for compaction. Minimal material was removed from the site to reach final grade.



Ann Arbor

Muskegon

Traverse City

Upper Peninsula

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File No.	2024.2038
Project	Golfview Drive Reconstruction
Date	10/09/2024
Arrival Time	11:10 AM
Tested By	Jalen Salazar
Ordered By	BDR Inc

Field Density & Compaction Test Report

Test No.	Description of Soil	Max. Density (pcf)	Wet Density (pcf)	Water Content (%)	Dry Density (pcf)	Compaction (%)
1	Gravel : Brown	126.6	137.5	8.9	126.3	99.7
2	Gravel : Brown	126.6	138.1	10.0	125.5	99.2
3	Gravel : Brown	126.6	138.3	9.1	126.8	100.1
4	Gravel : Brown	126.6	134.8	7.7	125.2	98.9
5	Gravel : Brown	126.6	137.4	8.1	127.1	100.4
6	Gravel : Brown	126.6	139.4	7.3	129.9	102.6

Test No.	Test Elevation	Probe Depth	Area Represented	Location of Tests
1	99.7	6	Aggregate Base : Roadway : Eastbound lane. : 723 Golfview Drive.	
2	99.7	6	Aggregate Base : Roadway : Westbound lane. : Next to the WestShore sign.	
3	99.7	6	Aggregate Base : Roadway : Eastbound lane. : 719 Golfview Drive.	
4	99.7	6	Aggregate Base : Roadway : Westbound lane. : 711 Golfview Drive.	
5	99.7	6	Aggregate Base : Roadway : Eastbound lane. : 798 Golfview Drive.	
6	99.7	6	Aggregate Base : Roadway : Westbound lane. : 699 Golfview Drive.	
Elevation Ref.: 100.0 = F. Asphalt Compaction Method: Vibratory Roller Lift Thickness (inches): 8" If Observed: No Weather: Sunny Temperature (F°): 57				

Test Results Reported To Dykgraaf Excavating

X Does Meet 98% compaction specifications where tested.

_ Does not meet compaction specifications where tested. Action taken: .

Remarks:

DISCLAIMER: The above tests are only intended to represent the soil and elevation which was tested. They are not a substitute for a complete soil investigation.

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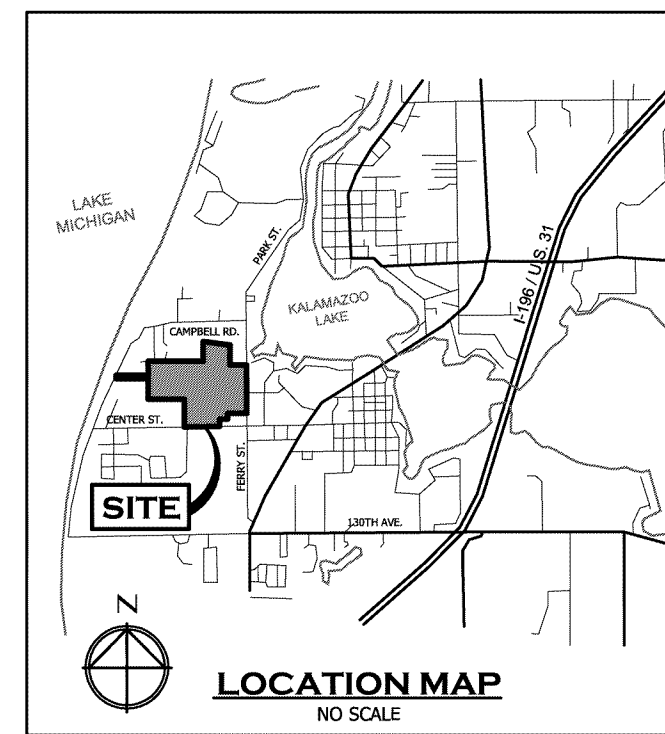
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13200132-02-PR-1B

DATE: 03/26/13

DRAWN BY: BEM

CHECKED BY: RJB

DATE: 03/13/13

11:35

13200132-02-PR-1B

13200132-02-PR-1B

13200132-02-PR-1B

13200132-02-PR-1B

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Daily Report

Project Title:	Golfview Drive Reconstruction	Project No.:	2024.2038
Project Location:	Douglas, MI	Date:	10/10/2024
Client:	BDR Inc	Weather:	Sunny
Inspected By:	Jalen Salazar	Temperature (°F):	60

Type of Inspection:		Soil		Concrete		Masonry
	X	Pavement		Steel		Other:

Summary of Work Performed, Observations and Recommendations:

Soils & Structures arrived onsite to observe Bruce's Blacktop perform paving operations for the asphalt leveling course. The leveling course was installed from 723 Golfview Drive to 702 Golfview Drive - approximately 18,929 square feet . Bruce's Blacktop performed the work using a Carlson CP130 rubber track paver. A Volvo DD30B vibratory roller was used for primary compaction, and a Wacker Neuson RD12 vibratory roller was used for secondary compaction of the hot-mix asphalt. Asphalt temperatures ranged from 280 to 295 degrees Fahrenheit as measured with an infrared thermometer at the hopper of the paver.

Asphalt Material Type: 4EML

Design Thickness: 2 inches

Area: 2,103 Square Yards

Tonnage Placed: 217.44 tons

Calculated Yield: 1.88 inches

Photo 1	Photo 2	Photo 3	Photo 4
			

Ann Arbor

Muskegon

Traverse City

Upper Peninsula

(800) 933-3959



File No.	2024.2038
Project	Golfview Drive Reconstruction
Date	10/10/2024
Arrival Time	12:16 PM
Tested By	Jalen Salazar
Ordered By	BDR Inc

Field Density & Compaction Test Report

Test No.	Description of Soil	Max. Density (pcf)	Wet Density (pcf)	Water Content (%)	Dry Density (pcf)	Compaction (%)
1	Asphalt : 4EML	157.5	148.2	6.7	138.9	94.1
2	Asphalt : 4EML	157.5	152.4	6.2	143.5	96.8
3	Asphalt : 4EML	157.5	151.1	6.8	141.5	95.9
4	Asphalt : 4EML	157.5	149.0	5.5	141.2	94.6
5	Asphalt : 4EML	157.5	152.7	6.0	144.1	97.0
6	Asphalt : 4EML	157.5	153.4	6.1	144.6	97.4
7	Asphalt : 4EML	157.5	149.8	6.8	140.3	95.1

Test No.	Test Elevation	Probe Depth	Area Represented	Location of Tests
1	99.8	BS	Asphalt Base : Roadway : 723 Golfview Drive. : Eastbound lane.	
2	99.8	BS	Asphalt Base : Roadway : Next to the West Shore sign. : Eastbound lane.	
3	99.8	BS	Asphalt Base : Roadway : 719 Golfview Drive. : Eastbound lane.	
4	99.8	BS	Asphalt Base : Roadway : 711 Golfview Drive. : Eastbound lane.	
5	99.8	BS	Asphalt Base : Roadway : 707 Golfview Drive. : Eastbound lane.	
6	99.8	BS	Asphalt Base : Roadway : 702 Golfview Drive. : Eastbound lane.	
7	99.8	BS	Asphalt Base : Roadway : 716 Golfview Drive. : Eastbound lane.	
Elevation Ref.: 100.0 = F. Asphalt Compaction Method: Vibratory Roller Lift Thickness (inches): 2" If Observed: Yes Weather: Sunny Temperature (F°): 60				

Test Results Reported To Bruce's Blacktop

X Does Meet 94% compaction specifications where tested.

_ Does not meet compaction specifications where tested. Action taken: .

Remarks:

DISCLAIMER: The above tests are only intended to represent the soil and elevation which was tested. They are not a substitute for a complete soil investigation.

Ann Arbor Muskegon Traverse City Upper Peninsula
(800) 933-3959



File No.	2024.2038
Project	Golfview Drive Reconstruction
Date	10/10/2024
Arrival Time	01:26 PM
Tested By	Jalen Salazar
Ordered By	BDR Inc

Field Density & Compaction Test Report

Test No.	Description of Soil	Max. Density (pcf)	Wet Density (pcf)	Water Content (%)	Dry Density (pcf)	Compaction (%)
1	Asphalt : 4EML	157.5	152.8	6.4	143.6	97.0
2	Asphalt : 4EML	157.5	150.4	7.0	140.6	95.5
3	Asphalt : 4EML	157.5	148.7	6.6	139.5	94.4
4	Asphalt : 4EML	157.5	153.0	6.2	144.1	97.1
5	Asphalt : 4EML	157.5	151.2	5.8	142.9	96.0
6	Asphalt : 4EML	157.5	153.3	6.4	144.1	97.3
7	Asphalt : 4EML	157.5	150.6	5.8	142.3	95.6

Test No.	Test Elevation	Probe Depth	Area Represented	Location of Tests
1	99.8	BS	Asphalt Base : Roadway : 723 Golfview Drive. : Westbound lane.	
2	99.8	BS	Asphalt Base : Roadway : Next to the West Shore sign. : Westbound lane.	
3	99.8	BS	Asphalt Base : Roadway : 719 Golfview Drive. : Westbound lane.	
4	99.8	BS	Asphalt Base : Roadway : 711 Golfview Drive. : Westbound lane.	
5	99.8	BS	Asphalt Base : Roadway : 707 Golfview Drive. : Westbound lane.	
6	99.8	BS	Asphalt Base : Roadway : 702 Golfview Drive : Westbound lane.	
7	99.8	BS	Asphalt Base : Roadway : 716 Golfview Drive. : Westbound lane.	
Elevation Ref.: 100.0 = F. Asphalt Compaction Method: Vibratory Roller Lift Thickness (inches): 2" If Observed: Yes Weather: Sunny Temperature (F°): 60				

Test Results Reported To Bruce's Blacktop

X Does Meet 94% compaction specifications where tested.

_ Does not meet compaction specifications where tested. Action taken: .

Remarks:

DISCLAIMER: The above tests are only intended to represent the soil and elevation which was tested. They are not a substitute for a complete soil investigation.

Ann Arbor Muskegon Traverse City Upper Peninsula
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REPORT OF COMPACTED HMA CORE DENSITY & PERCENT COMPACTION

CONTROL SECTION	JOB NUMBER	PROJECT LOCATION						MIXTURE TYPE		MIX DESIGN No.		REPORT NUMBER	
	2024.2038	Golfview Drive Reconstruction						4EML		4EMLT2B4		1	
CONTRACTOR				PLANT NUMBER				PLANT LOCATION					
Bruces Blacktop				55-01				Wayland					
PROJECT ENGINEER		NAME OF TESTER (Please Print)			Tester (Signature)				QUALIFICATION NUMBER			LOT NUMBER	
Nederveld		Matthew McClendon							0552-0225			1	
DATE		10/10/24	10/10/24	10/10/24		10/10/24	10/10/24						
Core Thickness Prior to Trimming		1 1/2"	1 7/8"	1 7/8"		2"	1 5/8"						
SUBLOT NUMBER / CORE LETTER		1A	1B	1C		JC 1	JC 2						
A. WEIGHT OF CORE (in water), grams		789.2	867.5	876.3		677.2	585.8						
B. WEIGHT OF CORE (surface dry), grams		1380.4	1533.1	1537.3		1247.0	1083.4						
C. WEIGHT OF CORE & PAN (oven dry), grams		1374.4	1522.2	1526.8		1222.8	1061.0						
D. WEIGHT OF PAN, grams													
E. WEIGHT OF CORE (C - D), grams		1374.4	1522.2	1526.8		1222.8	1061.0						
F. VOLUME OF CORE (B - A), cc		591.2	665.6	661.0		569.8	497.6						
G. CORE SPECIFIC GRAVITY (E / F)		2.325	2.287	2.310		2.146	2.132						
H. SUBLOT Gmm (2)TEST RESULTS		2.499				2.499							
I. % CORE COMPACTION (G / H) x 100		93.0%	91.2%	92.4%		85.8%	85.3%						
J. SUBLOT % CORE COMPACTION (Average of cores)		92%				86%							
K. LOT AVERAGE DENSITY (Sum of J / number of sublots in lot)													
Average Core Thickness = 1 3/4"													



Geotechnical Engineering | Pavement Design Services
Structural Steel Detailing | Structural Engineering
Laboratory Testing | Construction Materials Testing

DAILY REPORT OF HMA PLANT INSPECTION

DISTRIBUTION: ORIGINAL - Testing Lab, Copy - Project Engineer, Copy - Plant Inspector

Michigan Departement
of Transportation
1903 (09/04)

CONTROL SECTION				Job Number 2024.2038				JOB LOCATION Golfview Drive Reconstruction				PROJECT ENGINEER Nederveld											
CONTRACTOR Bruces Blacktop						PLANT NUMBER 55-01				PLANT LOCATION Wayland				Report Number 1		DATE SAMPLED 10/10/2024							
FIELD TEST RESULTS										MATERIAL		LAB SAMPLE TIME TAKEN		PROJECT PRODUCTION RECORD									
EXTRACTION NUMBER		TYPE OF MIXTURE		MIX DESIGN No.		TYPE OF MIXTURE		MIX DESIGN No.						DAILY TONS		ACCUMULATED TONS							
		4EML		4EMLT2B4		4EML		4EMLT2B4		BASE				75 / 200									
										LEVELING													
		JMF		ACTUAL		DEV.		TOL.		JMF		ACTUAL		DEV.		TOL.		TOP					
ASPHALT %		5.30		5.65		0.35		-0.30		5.30		5.58		0.28		-0.30		FILLER					
P. 1-1/2" (37.5 mm) %		100.0		100.0		0.0		±5.0		100.0		100.0		0.0		±5.0		ASPHALT BINDER					
P. 1" (25.0 mm) %		100.0		100.0		0.0		±5.0		100.0		100.0		0.0		±5.0		AGGREGATE MOISTURE CONTENT					
P. 3/4" (19.0 mm) %		100.0		100.0		0.0		±5.0		100.0		100.0		0.0		±5.0		MATERIAL		TIME		%	
P. 1/2" (12.5 mm) %		91.3		93.7		2.4		±5.0		91.3		94.1		2.8		±5.0							
P. 3/8" (9.5 mm) %		85.8		88.0		2.2		±5.0		85.8		89.5		3.7		±5.0						P. No. 30 (600 µm)	
P. No. 4 (4.75 mm) %		66.7		70.2		3.5		±5.0		66.7		70.6		3.9		±5.0						P. No. 200 (75 µm)	
P. No. 8 (2.36 mm) %		51.9		54.1		2.2		±5.0		51.9		54.7		2.8		±5.0		PLANT OPR. START		END		LOST TIME	
P. No. 30 (600 µm) %		28.5		28.2		-0.3		±4.0		28.5		28.3		-0.2		±4.0						ACTUAL HRS. OPR.	
P. No. 200 (75 µm) %		5.3		5.6		0.3		±1.0		5.3		5.4		0.1		±1.0		KIT NUMBER		EXTRACTOR NUMBER			
CRUSHED %		97.8		97.2		-1		-10%		97.8		97.3		-1		-10%							
MIX / AGGREGATE BLEND PROPORTIONS										TEMPERATURE				REMARKS :									
PIT NUMBER		GRADE, MANUFACTURER MATERIAL, SUPPLIER				TYPE OF MIXTURE		TIME TAKEN		MIX		AIR											
49-65		3/4 x 1/2				12.0%																	
95-05		29A				16.0%																	
03-1001		2NS				12.0%																	
92-0035		SLAG SAND				13.0%																	
75-05		3/32nd SAND				22.0%																	
								X		DRUM PLANT													
RECLAIMED		RAP / YARD (55-01)				25.0%						BATCH PLANT		QUALIFICATION NUMBER									
FILLER												MIX TIME: DRY____WET____		0552-0225									
ASPHALT BINDER		58-28 Marathon ABS 3505				4.13%				PLANT INSPECTOR'S NAME (PRINT)				SIGNATURE				DATE TESTED					
										Matthew McClendon								10/10/2024					

BENCHMARK #13: ELEV.= 611.17 (NGVD29)
SET RAILROAD SPIKE IN NORTH SIDE OF UTILITY POLE LOCATED 6' SOUTH OF THE SOUTH EDGE OF PAVEMENT FOR CENTER STREET & 7' WEST OF THE EAST LINE OF THE EXISTING BUILDING TO THE NORTH.

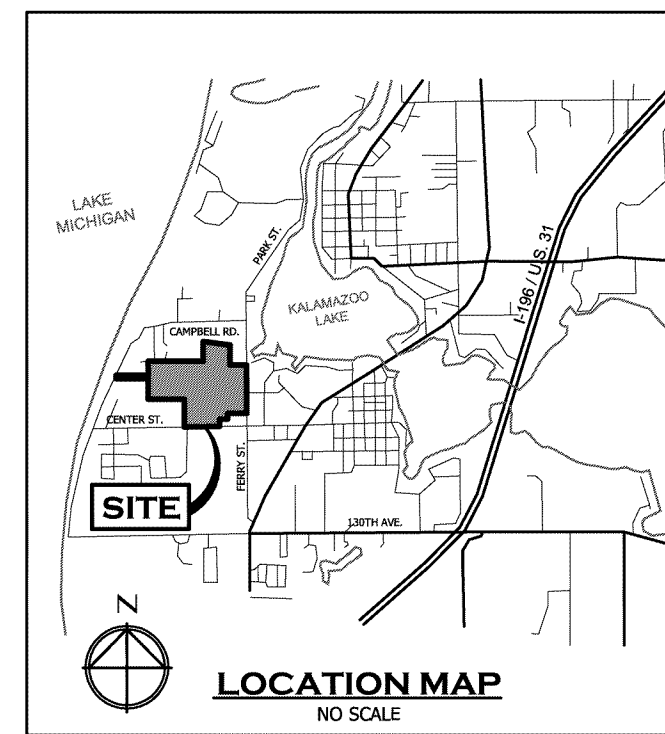
BENCHMARK #20: ELEV.= 634.92 (NGVD29)
SET RAILROAD SPIKE IN NORTH SIDE OF 60' ASH TREE LOCATED 28' EAST OF THE END OF GOLVIEW DRIVE & 360' SOUTH OF THE NORTH SIDE OF PAVEMENT FOR GOLVIEW DRIVE.

BENCHMARK #2144: ELEV.= 621.77 (NGVD29)
RAILROAD SPIKE IN NORTH SIDE OF UTILITY POLE LOCATED 9' EAST OF THE EAST EDGE OF PAVEMENT FOR FERRY STREET & 1000' NORTH OF THE EAST 1/4 CORNER OF SECTION 17.

BENCHMARK #2212: ELEV.= 627.02 (NGVD29)
RAILROAD SPIKE IN WEST SIDE OF UTILITY POLE LOCATED 9' EAST OF THE EAST EDGE OF PAVEMENT FOR FERRY STREET & 630' NORTH OF THE EAST 1/4 CORNER OF SECTION 17.

LEGEND

- EX. GRADE CONTOUR
PROP. GRADE CONTOUR
PROP. GRADE ELEV. (BLACKTOP)
PROP. GRADE ELEV. (GUTTER)
PROP. GRADE ELEV. (HIGH POINT)
EX. BITUMINOUS
PROP. BITUMINOUS
PROP. STORM SEWER
PROP. UNDERDRAIN
PROP. SANITARY SEWER
PROP. WATERMAIN
PROP. LIMITS OF GRADING
PROP. SILT FENCE
WETLAND BOUNDARY FLAGS
WETLAND AREA
MONITORING WELL
EXIST. TREELINE
SOIL EROSION CONTROL MATTING
SOIL BORING LOCATION



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HOLLAND
347 Hoover Boulevard
Holland, MI 49423
PHONE: 616.393.0449
INDIANAPOLIS
8459 Castlewood Dr., Suite B
Indianapolis, IN 46250
PHONE: 317.288.3762

Soil Erosion/Sedimentation
Control and Grading Plan
of
Golfview Drive (Private)
WESTSHORE PHASE 1B

**DOUGLAS PROPERTY
DEVELOPMENT, LLC**
Attention:
Kevin Einfeld
5510 Cascade Road SE, Suite 21
Grand Rapids, MI 49506
Phone: (616) 458-8505

date	comment	no.	date	comment	no.	date	comment	no.	date	comment	no.
03/14/13	CONSTRUCTION PLAN SUBMITTAL	1	03/14/13	CONSTRUCTION PLAN SUBMITTAL	1	03/14/13	CONSTRUCTION PLAN SUBMITTAL	1	03/14/13	CONSTRUCTION PLAN SUBMITTAL	1
03/22/13	ALLEGAN COUNTY SEISC AGENT	2	03/22/13	ALLEGAN COUNTY SEISC AGENT	2	03/22/13	ALLEGAN COUNTY SEISC AGENT	2	03/22/13	ALLEGAN COUNTY SEISC AGENT	2
03/27/13	CITY ENGINEER	3	03/27/13	CITY ENGINEER	3	03/27/13	CITY ENGINEER	3	03/27/13	CITY ENGINEER	3
05/07/13		4	05/07/13		4	05/07/13		4	05/07/13		4
		5			5			5			5
		6			6			6			6
		7			7			7			7
		8			8			8			8

project no.:
13200132
C-300
sheet no.:
2 OF 6

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CONSTRUCTION STAKING AND LAYOUT
SHALL BE PERFORMED BY NEDERVELD, INC.



Know what's below.
Call before you dig.

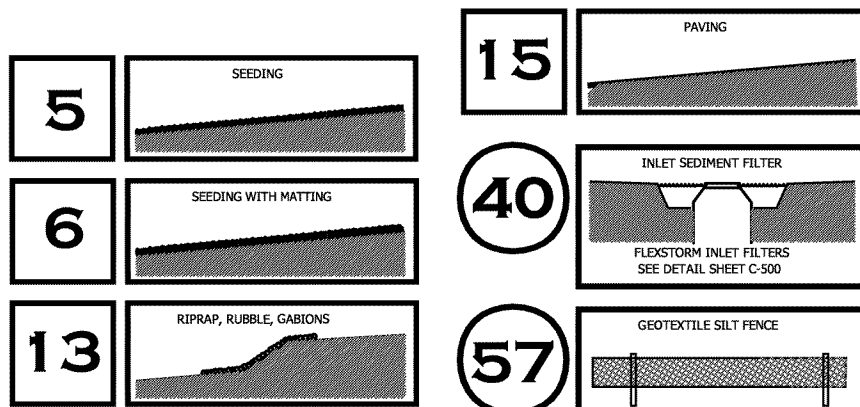
UTILITY LOCATIONS ARE DERIVED FROM ACTUAL MEASUREMENTS OR AVAILABLE RECORDS. THEY SHOULD NOT BE INTERPRETED TO BE EXACT LOCATIONS NOR SHOULD IT BE ASSUMED THAT THEY ARE THE ONLY UTILITIES IN THIS AREA.

NOTE:
EXISTING UTILITIES AND SERVICE LINES IDENTIFIED AS "PLAN" WERE OBTAINED FROM AVAILABLE CITY AS-BUILT RECORD DRAWINGS. THE CONTRACTOR SHALL VERIFY THE LOCATION, DEPTH AND STATUS OF ALL UTILITIES AND SERVICE LINES PRIOR TO NEW CONNECTIONS.

NOTE:
SEDIMENT BASIN #1 TO BE BUILT & STABILIZED FIRST BEFORE ANY OTHER CONSTRUCTION WORK. STORM DISCHARGE TO THE SEDIMENT BASIN SHOULD NOT OCCUR UNTIL THE BASIN IS FULLY STABILIZED.

ALL WORK WITHIN REGULATED WETLANDS SHALL BE COMPLETED IN ACCORDANCE WITH MDEQ PERMIT #

NOTE: ALL FILL AREAS, INCLUDING UTILITY TRENCHES, BUILDING ENVELOPES AND STREETS ARE TO BE COMPACTED IN 12" LOOSE LIFTS (CLAY AREAS: 4" - 6" LIFTS) TO 95% MAX. DRY DENSITY AS DETERMINED BY MICHIGAN CONE OR MODIFIED PROCTOR (ASTM D-1557) TESTING.



SOIL EROSION AND SEDIMENTATION CONTROL NOTES:

- 1) CONTRACTOR SHALL POSSESS THE SOIL EROSION AND SEDIMENTATION CONTROL PERMIT PRIOR TO START OF ANY EARTHWORK.
- 2) CONTRACTOR SHALL MODIFY THIS SOIL EROSION AND SEDIMENTATION CONTROL PLAN TO SHOW THE ADDITIONAL CONTROL MEASURES INTENDED TO BE USED DURING CONSTRUCTION. SUBMIT MODIFICATIONS TO THE CONTROLLING AGENCY, THE OWNER, AND THE ENGINEER.
- 3) EROSION PROTECTION SHALL BE PROVIDED AT ALL STORM SEWER INLETS AND OUTLETS. ALL BARE EARTH SHALL BE STABILIZED WITH SEEDING.
- 4) LOCATION AND TYPE OF EROSION CONTROL MEASURES ARE IDENTIFIED ON THE SKETCH BY KEY NUMBERS, 5-40, RELATING TO THE MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY (MDEQ) EROSION CONTROL AND BEST MANAGEMENT PRACTICES.
- 5) A 150 FOOT LONG, 6 INCH DEEP CRUSHED CONCRETE ENTRANCE SHALL BE INSTALLED WHERE EARTH MOVERS WILL BE ENTERING & EXITING THE SITE. ALL DIRT, CLAY ROCK, AND OTHER SOIL SHALL BE CLEARED FROM THE ROAD RIGHT-OF-WAY.
- 6) ALL DIRT STOCKPILES SHALL HAVE SILT FENCE AROUND THEM.
- 7) ALL INLET FILTERS AND SILT FENCE SHALL BE INSPECTED WEEKLY AND AFTER STORM EVENTS TO ENSURE THOSE CONTROLS ARE WORKING OPTIMALLY.
- 8) VEGETATIVE FILTER STRIPS SHALL BE PLACED ON ALL AREAS OF THE DEVELOPMENT WHERE SLOPES EXCEED 1% BUT ARE LESS THAN 5% AND MUST BE AT LEAST 20' IN WIDTH. WORKER MULCH BARRIERS SHALL BE PLACED IMMEDIATELY OVER SCAFFERD SLOPES AND MAINTAINED UNTIL VISIBLE VEGETATIVE GROWTH HAS BEEN ESTABLISHED. SLOPES GREATER THAN 5% SHOULD HAVE DIVERSIONS OR ANY OTHER CONCEIVABLE CONTROL TO CARRY WATER AWAY FROM THESE AREAS UNTIL VEGETATIVE GROWTH OCCURS.



Daily Report

Project Title:	Golfview Drive Reconstruction	Project No.:	2024.2038
Project Location:	Douglas, MI	Date:	10/11/2024
Client:	BDR Inc	Weather:	Sunny
Inspected By:	Jalen Salazar	Temperature (°F):	70

Type of Inspection:		Soil		Concrete		Masonry
	X	Pavement		Steel		Other:

Summary of Work Performed, Observations and Recommendations:

Soils & Structures arrived on site to observe Bruce's Blacktop perform paving operations for the asphalt wearing course. Prior to the placement of hot mix asphalt, tack was applied to the surface of the asphalt leveling course. The wearing course was installed from 723 Golfview Drive to 702 Golfview drive - approximately 18,929 square feet. Bruce's Blacktop performed the work using a Carlson CP130 rubber track paver. A Volvo DD30B vibratory roller was used for primary compaction, a Wacker Neuson RD12 vibratory roller was used for secondary compaction of the hot-mix asphalt. Asphalt temperatures ranged from 290 to 315 degrees Fahrenheit as measured with an infrared thermometer at the hopper of the paver.

Bruce's Blacktop installed approximately 750 linear feet of 24 inch valley gutter in the easternmost half of the project.

Asphalt Material Type: 5EML

Design Thickness: 1.5 inches

Area: 2,103 Square Yards

Tonnage Placed: 228.5 tons

Calculated Yield: 1.98 inches



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File No.	2024.2038
Project	Golfview Drive Reconstruction
Date	10/11/2024
Arrival Time	03:39 PM
Tested By	Jalen Salazar
Ordered By	BDR Inc

Field Density & Compaction Test Report

Test No.	Description of Soil	Max. Density (pcf)	Wet Density (pcf)	Water Content (%)	Dry Density (pcf)	Compaction (%)
1	Asphalt : 5EML	156.7	152.5	5.1	145.1	97.3
2	Asphalt : 5EML	156.7	150.4	5.7	142.3	96.0
3	Asphalt : 5EML	156.7	148.5	4.9	141.6	94.8
4	Asphalt : 5EML	156.7	148.5	4.8	141.7	94.8
5	Asphalt : 5EML	156.7	154.7	4.7	147.8	98.7
6	Asphalt : 5EML	156.7	148.4	4.4	142.1	94.7
7	Asphalt : 5EML	156.7	149.8	5.1	142.5	95.6

Test No.	Test Elevation	Probe Depth	Area Represented	Location of Tests
1	100.0	BS	Asphalt Top : Roadway : 723 Golfview Drive. : Eastbound lane.	
2	100.0	BS	Asphalt Top : Roadway : Next to the West Shore sign. : Eastbound lane.	
3	100.0	BS	Asphalt Top : Roadway : 719 Golfview Drive. : Eastbound lane.	
4	100.0	BS	Asphalt Top : Roadway : 711 Golfview Drive. : Eastbound lane.	
5	100.0	BS	Asphalt Top : Roadway : 707 Golfview Drive. : Eastbound lane.	
6	100.0	BS	Asphalt Top : Roadway : 702 Golfview Drive. : Eastbound lane.	
7	100.0	BS	Asphalt Top : Roadway : 716 Golfview Drive. : Eastbound lane.	
Elevation Ref.: 100.0 = F. Asphalt Compaction Method: Vibratory Roller Lift Thickness (inches): 1.5" If Observed: Yes Weather: Sunny Temperature (F°): 70				

Test Results Reported To Bruce's Blacktop

X Does Meet 94% compaction specifications where tested.

_ Does not meet compaction specifications where tested. Action taken: .

Remarks:

DISCLAIMER: The above tests are only intended to represent the soil and elevation which was tested. They are not a substitute for a complete soil investigation.

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File No.	2024.2038
Project	Golfview Drive Reconstruction
Date	10/11/2024
Arrival Time	04:49 PM
Tested By	Jalen Salazar
Ordered By	BDR Inc

Field Density & Compaction Test Report

Test No.	Description of Soil	Max. Density (pcf)	Wet Density (pcf)	Water Content (%)	Dry Density (pcf)	Compaction (%)
1	Asphalt : 5EML	156.7	152.1	5.2	144.6	97.1
2	Asphalt : 5EML	156.7	150.8	6.0	142.3	96.2
3	Asphalt : 5EML	156.7	151.0	5.8	142.7	96.4
4	Asphalt : 5EML	156.7	149.9	5.3	142.4	95.7
5	Asphalt : 5EML	156.7	151.4	5.2	143.9	96.6
6	Asphalt : 5EML	156.7	149.5	5.2	142.1	95.4
7	Asphalt : 5EML	156.7	150.4	5.5	142.6	96.0

Test No.	Test Elevation	Probe Depth	Area Represented	Location of Tests
1	100.0	BS	Asphalt Top : Roadway : 723 Golfview Drive. : Westbound lane.	
2	100.0	BS	Asphalt Top : Roadway : Next to the West Shore sign. : Westbound lane.	
3	100.0	BS	Asphalt Top : Roadway : 719 Golfview Drive. : Westbound lane.	
4	100.0	BS	Asphalt Top : Roadway : 711 Golfview Drive. : Westbound lane.	
5	100.0	BS	Asphalt Top : Roadway : 707 Golfview Drive. : Westbound lane.	
6	100.0	BS	Asphalt Top : Roadway : 702 Golfview Drive. : Westbound lane.	
7	100.0	BS	Asphalt Top : Roadway : 716 Golfview Drive. : Westbound lane.	
Elevation Ref.: 100.0 = F. Asphalt Compaction Method: Vibratory Roller Lift Thickness (inches): 1.5" If Observed: Yes Weather: Sunny Temperature (F°): 70				

Test Results Reported To Bruce's Blacktop

X Does Meet 94% compaction specifications where tested.

_ Does not meet compaction specifications where tested. Action taken: .

Remarks:

DISCLAIMER: The above tests are only intended to represent the soil and elevation which was tested. They are not a substitute for a complete soil investigation.

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REPORT OF COMPACTED HMA CORE DENSITY & PERCENT COMPACTION

CONTROL SECTION	JOB NUMBER	PROJECT LOCATION						MIXTURE TYPE		MIX DESIGN No.		REPORT NUMBER	
	2024.2038	Golfview Drive Reconstruction						5EML		5EMLT2B4		2	
CONTRACTOR				PLANT NUMBER			PLANT LOCATION						
Bruces Blacktop				55-01			Wayland						
PROJECT ENGINEER		NAME OF TESTER (Please Print)			Tester (Signature)				QUALIFICATION NUMBER			LOT NUMBER	
Nederveld		Matthew McClendon							0552-0225			1	
DATE		10/11/24	10/11/24	10/11/24		10/11/24	10/11/24						
Core Thickness Prior to Trimming		1 5/8"	2"	1 3/4"		1 7/8"	1 3/4"						
SUBLOT NUMBER / CORE LETTER		1A	1B	1C		JC 1	JC 2						
A. WEIGHT OF CORE (in water), grams		909.5	1135.1	1021.5		907.4	915.3						
B. WEIGHT OF CORE (surface dry), grams		1595.4	1955.5	1822.2		1651.6	1687.8						
C. WEIGHT OF CORE & PAN (oven dry), grams		1582.7	1950.7	1813.2		1610.5	1641.0						
D. WEIGHT OF PAN, grams													
E. WEIGHT OF CORE (C - D), grams		1582.7	1950.7	1813.2		1610.5	1641.0						
F. VOLUME OF CORE (B - A), cc		685.9	820.4	800.7		744.2	772.5						
G. CORE SPECIFIC GRAVITY (E / F)		2.307	2.378	2.265		2.146	2.124						
H. SUBLOT Gmm (2) TEST RESULTS		2.525				2.525							
I. % CORE COMPACTION (G / H) x 100		91.4%	94.2%	89.7%		85.0%	84.1%						
J. SUBLOT % CORE COMPACTION (Average of cores)		92%				85%							
K. LOT AVERAGE DENSITY (Sum of J / number of sublots in lot)													
Average Top Core Thickness = 1 3/4"													



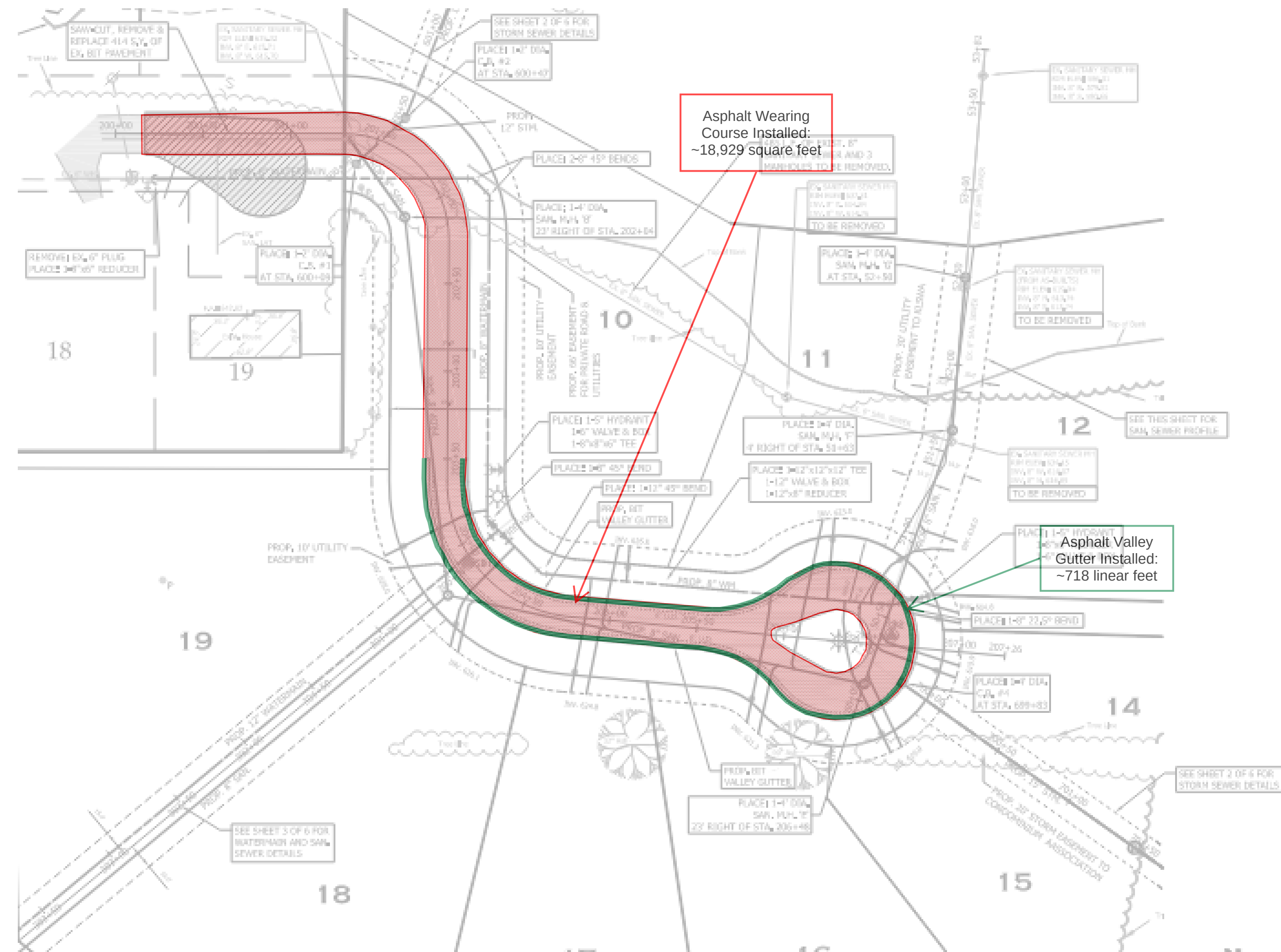
Geotechnical Engineering | Pavement Design Services
Structural Steel Detailing | Structural Engineering
Laboratory Testing | Construction Materials Testing

DAILY REPORT OF HMA PLANT INSPECTION

DISTRIBUTION: ORIGINAL - Testing Lab, Copy - Project Engineer, Copy - Plant Inspector

Michigan Departement
of Transportation
1903 (09/04)

CONTROL SECTION				Job Number 2024.2038				JOB LOCATION Golfview Drive Reconstruction				PROJECT ENGINEER Nederveld							
CONTRACTOR Bruces Blacktop						PLANT NUMBER 55-01				PLANT LOCATION Wayland				Report Number 2		DATE SAMPLED 10/11/2024			
FIELD TEST RESULTS										MATERIAL		LAB SAMPLE TIME TAKEN		PROJECT PRODUCTION RECORD					
EXTRACTION NUMBER		TYPE OF MIXTURE		MIX DESIGN No.		TYPE OF MIXTURE		MIX DESIGN No.						DAILY TONS		ACCUMULATED TONS			
		5EML		5EMLT2B4		5EML		5EMLT2B4		BASE									
										LEVELING									
		JMF		ACTUAL		DEV.		TOL.		JMF		ACTUAL		DEV.		TOL.		TOP	
ASPHALT %		5.10	4.94	-0.16	-0.30	5.10	5.08	-0.02	-0.30	FILLER									
P. 1-1/2" (37.5 mm) %		100.0	100.0	0.0	±5.0	100.0	100.0	0.0	±5.0	ASPHALT BINDER									
P. 1" (25.0 mm) %		100.0	100.0	0.0	±5.0	100.0	100.0	0.0	±5.0	AGGREGATE MOISTURE CONTENT				MINERAL FILLER					
P. 3/4" (19.0 mm) %		100.0	100.0	0.0	±5.0	100.0	100.0	0.0	±5.0	MATERIAL		TIME						%	
P. 1/2" (12.5 mm) %		100.0	98.9	-1.1	±5.0	100.0	99.4	-0.6	±5.0										
P. 3/8" (9.5 mm) %		95.9	95.0	-0.9	±5.0	95.9	96.1	0.2	±5.0							P. No. 30 (600 µm)			
P. No. 4 (4.75 mm) %		70.2	66.6	-3.6	±5.0	70.2	67.3	-2.9	±5.0							P. No. 200 (75 µm)			
P. No. 8 (2.36 mm) %		49.5	48.5	-1.0	±5.0	49.5	50.0	0.5	±5.0	PLANT OPR. START		END		LOST TIME		ACTUAL HRS. OPR.			
P. No. 30 (600 µm) %		29.9	30.7	0.8	±4.0	29.9	31.4	1.5	±4.0										
P. No. 200 (75 µm) %		5.4	5.4	0.0	±1.0	5.4	5.6	0.2	±1.0	KIT NUMBER				EXTRACTOR NUMBER					
CRUSHED %		95.2	95.1	0	-10%	95.2	95.1	0	-10%										
MIX / AGGREGATE BLEND PROPORTIONS						TEMPERATURE				REMARKS :									
PIT NUMBER		GRADE, MANUFACTURER MATERIAL, SUPPLIER				TYPE OF MIXTURE		TIME TAKEN		MIX		AIR							
95-05		29A				26.0%													
03-1001		2NS				21.0%													
92-0035		SLAG SAND				25.0%													
RECLAIMED		RAP / YARD (55-01)				28.0%				X		DRUM PLANT		2024.2038, 2409497, 2409499					
FILLER												BATCH PLANT		QUALIFICATION NUMBER					
ASPHALT BINDER		58-28 Marathon ABS 3505				3.74%						MIX TIME: DRY____WET____		0552-0225					
												PLANT INSPECTOR'S NAME (PRINT)		SIGNATURE		DATE TESTED			
												Matthew McClendon				10/15/2024			





ENGINEER'S CERTIFICATE

DATE: January 18, 2025

PROJECT NAME: Westshore PUD – Golfview Drive Reconstruction

MUNICIPALITY: City of the Village of Douglas SECTION: 17

I hereby certify that the removal and reconstruction of the road pavement is complete:

Exception(s): None

And that:

I have personally directed the supervision and inspection of the construction.

All improvements have been installed in accordance with the approved construction plans and the standards and specifications within the Soils & Structures report dated December 20, 2023.

The construction materials meet the aforementioned specifications.



R. Jack Barr, P.E.

Date: January 18, 2025

PE License # 6201041990



Daily Report

Project Title:	Golfview Drive Reconstruction	Project No.:	2024.2038
Project Location:	Douglas, MI	Date:	10/07/2024
Client:	BDR Inc	Weather:	Sunny
Inspected By:	Marlee Lechner	Temperature (°F):	61

Type of Inspection:	X	Soil		Concrete		Masonry
	X	Pavement		Steel		Other: X

Summary of Work Performed, Observations and Recommendations:

Soils & Structures arrived onsite to observe Dykgraaf Excavating remove approximately 18,929 square feet of asphalt. Dykgraaf excavating utilized a CAT D5G XL Bulldozer to remove the asphalt and a Komatsu WA320 Front Loader to haul the asphalt to dump trucks to be hauled offsite. A CAT 304 mini excavator and a CAT 255 skidsteer were also used to aid in the removal of the asphalt.

Soils & Structures performed hand auger depth checks on the aggregate base to verify 8" of aggregate base is present throughout the site. Five hand augers were performed with depths of aggregate base ranging between 9 and 11 inches.

Photo 1	Photo 2	Photo 3	Photo 4

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Daily Report

Project Title:	Golfview Drive Reconstruction	Project No.:	2024.2038
Project Location:	Douglas, MI	Date:	10/08/2024
Client:	BDR Inc	Weather:	Sunny
Inspected By:	Marlee Lechner	Temperature (°F):	62

Type of Inspection:	X	Soil		Concrete		Masonry
		Pavement		Steel		Other: X

Summary of Work Performed, Observations and Recommendations:

Soils and Structures arrived onsite to observe Dykgraaf Excavating install ring wrap at the catch basin in the easternmost section of the work area. Dykgraaf excavating also rough graded and compacted the site.

Dykgraaf Excavating utilized the CAT 304 mini excavator to dig out the trench for the ring wrap. The trench was lined with nonwoven geotextile fabric. The ring wrap was surrounded by pea stone. The fabric was wrapped around the ring wrap and pea stone before being covered up with the aggregate base. The curb inlet casting was adjusted to lower the finished elevation. Dykgraaf Excavating sealed the ring wrap penetration and the casting to the catch basin with grout. The aggregate base was compacted with a Wacker Neuson plate compactor.

Dykgraaf Excavating used a CAT D5G XL Bulldozer to rough grade the aggregate base and a CAT CS54 vibratory smooth drum roller for compaction.

Dykgraaf Excavating performed a proof roll with a fully loaded dump truck over the aggregate base, no pumping, rutting, or deflection was observed.





Daily Report

Project Title:	Golfview Drive Reconstruction	Project No.:	2024.2038
Project Location:	Douglas, MI	Date:	10/09/2024
Client:	BDR Inc	Weather:	Sunny
Inspected By:	Marlee Lechner	Temperature (°F):	61

Type of Inspection:	X	Soil		Concrete		Masonry
		Pavement		Steel		Other: X

Summary of Work Performed, Observations and Recommendations:

Soils and Structures arrived onsite to observe Bruce's Blacktop finish grade the aggregate base and Dykgraaf Excavating perform final compaction.

Dykgraaf Excavating supplied a sanitary sewer casting to replace one that was damaged during construction operations near the westernmost section of the work area. Dykgraaf Excavating removed the damaged casting and installed the new casting on the manhole. The casting connection was sealed with grout.

Bruce's Blacktop used a Takeuchi TL230 skidsteer with a grader attachment to finish grade the aggregate base and Dykgraaf Excavating used CAT CS54 vibratory smooth drum roller for compaction. Minimal material was removed from the site to reach final grade.



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Daily Report

Project Title:	Golfview Drive Reconstruction	Project No.:	2024.2038
Project Location:	Douglas, MI	Date:	10/10/2024
Client:	BDR Inc	Weather:	Sunny
Inspected By:	Jalen Salazar	Temperature (°F):	60

Type of Inspection:		Soil		Concrete		Masonry
	X	Pavement		Steel		Other:

Summary of Work Performed, Observations and Recommendations:

Soils & Structures arrived onsite to observe Bruce's Blacktop perform paving operations for the asphalt leveling course. The leveling course was installed from 723 Golfview Drive to 702 Golfview Drive - approximately 18,929 square feet . Bruce's Blacktop performed the work using a Carlson CP130 rubber track paver. A Volvo DD30B vibratory roller was used for primary compaction, and a Wacker Neuson RD12 vibratory roller was used for secondary compaction of the hot-mix asphalt. Asphalt temperatures ranged from 280 to 295 degrees Fahrenheit as measured with an infrared thermometer at the hopper of the paver.

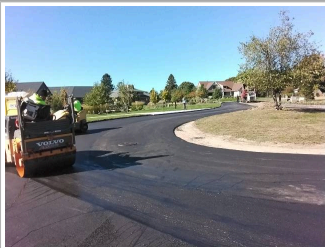
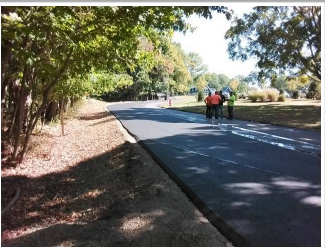
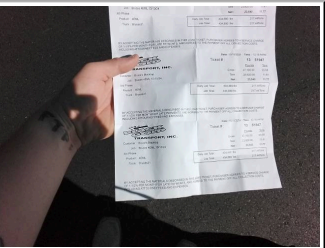
Asphalt Material Type: 4EML

Design Thickness: 2 inches

Area: 2,103 Square Yards

Tonnage Placed: 217.44 tons

Calculated Yield: 1.88 inches

Photo 1	Photo 2	Photo 3	Photo 4
			

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Daily Report

Project Title:	Golfview Drive Reconstruction	Project No.:	2024.2038
Project Location:	Douglas, MI	Date:	10/11/2024
Client:	BDR Inc	Weather:	Sunny
Inspected By:	Jalen Salazar	Temperature (°F):	70

Type of Inspection:		Soil		Concrete		Masonry
	X	Pavement		Steel		Other:

Summary of Work Performed, Observations and Recommendations:

Soils & Structures arrived on site to observe Bruce's Blacktop perform paving operations for the asphalt wearing course. Prior to the placement of hot mix asphalt, tack was applied to the surface of the asphalt leveling course. The wearing course was installed from 723 Golfview Drive to 702 Golfview drive - approximately 18,929 square feet. Bruce's Blacktop performed the work using a Carlson CP130 rubber track paver. A Volvo DD30B vibratory roller was used for primary compaction, a Wacker Neuson RD12 vibratory roller was used for secondary compaction of the hot-mix asphalt. Asphalt temperatures ranged from 290 to 315 degrees Fahrenheit as measured with an infrared thermometer at the hopper of the paver.

Bruce's Blacktop installed approximately 750 linear feet of 24 inch valley gutter in the easternmost half of the project.

Asphalt Material Type: 5EML

Design Thickness: 1.5 inches

Area: 2,103 Square Yards

Tonnage Placed: 228.5 tons

Calculated Yield: 1.98 inches



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File No.	2024.2038
Project	Golfview Drive Reconstruction
Date	10/09/2024
Arrival Time	11:10 AM
Tested By	Jalen Salazar
Ordered By	BDR Inc

Field Density & Compaction Test Report

Test No.	Description of Soil	Max. Density (pcf)	Wet Density (pcf)	Water Content (%)	Dry Density (pcf)	Compaction (%)
1	Gravel : Brown	126.6	137.5	8.9	126.3	99.7
2	Gravel : Brown	126.6	138.1	10.0	125.5	99.2
3	Gravel : Brown	126.6	138.3	9.1	126.8	100.1
4	Gravel : Brown	126.6	134.8	7.7	125.2	98.9
5	Gravel : Brown	126.6	137.4	8.1	127.1	100.4
6	Gravel : Brown	126.6	139.4	7.3	129.9	102.6

Test No.	Test Elevation	Probe Depth	Area Represented	Location of Tests
1	99.7	6	Aggregate Base : Roadway : Eastbound lane. : 723 Golfview Drive.	
2	99.7	6	Aggregate Base : Roadway : Westbound lane. : Next to the WestShore sign.	
3	99.7	6	Aggregate Base : Roadway : Eastbound lane. : 719 Golfview Drive.	
4	99.7	6	Aggregate Base : Roadway : Westbound lane. : 711 Golfview Drive.	
5	99.7	6	Aggregate Base : Roadway : Eastbound lane. : 798 Golfview Drive.	
6	99.7	6	Aggregate Base : Roadway : Westbound lane. : 699 Golfview Drive.	
Elevation Ref.: 100.0 = F. Asphalt Compaction Method: Vibratory Roller Lift Thickness (inches): 8" If Observed: No Weather: Sunny Temperature (F°): 57				

Test Results Reported To Dykgraaf Excavating

X Does Meet 98% compaction specifications where tested.

_ Does not meet compaction specifications where tested. Action taken: .

Remarks:

DISCLAIMER: The above tests are only intended to represent the soil and elevation which was tested. They are not a substitute for a complete soil investigation.

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File No.	2024.2038
Project	Golfview Drive Reconstruction
Date	10/10/2024
Arrival Time	12:16 PM
Tested By	Jalen Salazar
Ordered By	BDR Inc

Field Density & Compaction Test Report

Test No.	Description of Soil	Max. Density (pcf)	Wet Density (pcf)	Water Content (%)	Dry Density (pcf)	Compaction (%)
1	Asphalt : 4EML	157.5	148.2	6.7	138.9	94.1
2	Asphalt : 4EML	157.5	152.4	6.2	143.5	96.8
3	Asphalt : 4EML	157.5	151.1	6.8	141.5	95.9
4	Asphalt : 4EML	157.5	149.0	5.5	141.2	94.6
5	Asphalt : 4EML	157.5	152.7	6.0	144.1	97.0
6	Asphalt : 4EML	157.5	153.4	6.1	144.6	97.4
7	Asphalt : 4EML	157.5	149.8	6.8	140.3	95.1

Test No.	Test Elevation	Probe Depth	Area Represented	Location of Tests
1	99.8	BS	Asphalt Base : Roadway : 723 Golfview Drive. : Eastbound lane.	
2	99.8	BS	Asphalt Base : Roadway : Next to the West Shore sign. : Eastbound lane.	
3	99.8	BS	Asphalt Base : Roadway : 719 Golfview Drive. : Eastbound lane.	
4	99.8	BS	Asphalt Base : Roadway : 711 Golfview Drive. : Eastbound lane.	
5	99.8	BS	Asphalt Base : Roadway : 707 Golfview Drive. : Eastbound lane.	
6	99.8	BS	Asphalt Base : Roadway : 702 Golfview Drive. : Eastbound lane.	
7	99.8	BS	Asphalt Base : Roadway : 716 Golfview Drive. : Eastbound lane.	
Elevation Ref.: 100.0 = F. Asphalt Compaction Method: Vibratory Roller Lift Thickness (inches): 2" If Observed: Yes Weather: Sunny Temperature (F°): 60				

Test Results Reported To Bruce's Blacktop

X Does Meet 94% compaction specifications where tested.

_ Does not meet compaction specifications where tested. Action taken: .

Remarks:

DISCLAIMER: The above tests are only intended to represent the soil and elevation which was tested. They are not a substitute for a complete soil investigation.

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File No.	2024.2038
Project	Golfview Drive Reconstruction
Date	10/10/2024
Arrival Time	01:26 PM
Tested By	Jalen Salazar
Ordered By	BDR Inc

Field Density & Compaction Test Report

Test No.	Description of Soil	Max. Density (pcf)	Wet Density (pcf)	Water Content (%)	Dry Density (pcf)	Compaction (%)
1	Asphalt : 4EML	157.5	152.8	6.4	143.6	97.0
2	Asphalt : 4EML	157.5	150.4	7.0	140.6	95.5
3	Asphalt : 4EML	157.5	148.7	6.6	139.5	94.4
4	Asphalt : 4EML	157.5	153.0	6.2	144.1	97.1
5	Asphalt : 4EML	157.5	151.2	5.8	142.9	96.0
6	Asphalt : 4EML	157.5	153.3	6.4	144.1	97.3
7	Asphalt : 4EML	157.5	150.6	5.8	142.3	95.6

Test No.	Test Elevation	Probe Depth	Area Represented	Location of Tests
1	99.8	BS	Asphalt Base : Roadway : 723 Golfview Drive. : Westbound lane.	
2	99.8	BS	Asphalt Base : Roadway : Next to the West Shore sign. : Westbound lane.	
3	99.8	BS	Asphalt Base : Roadway : 719 Golfview Drive. : Westbound lane.	
4	99.8	BS	Asphalt Base : Roadway : 711 Golfview Drive. : Westbound lane.	
5	99.8	BS	Asphalt Base : Roadway : 707 Golfview Drive. : Westbound lane.	
6	99.8	BS	Asphalt Base : Roadway : 702 Golfview Drive : Westbound lane.	
7	99.8	BS	Asphalt Base : Roadway : 716 Golfview Drive. : Westbound lane.	
Elevation Ref.: 100.0 = F. Asphalt Compaction Method: Vibratory Roller Lift Thickness (inches): 2" If Observed: Yes Weather: Sunny Temperature (F°): 60				

Test Results Reported To Bruce's Blacktop

X Does Meet 94% compaction specifications where tested.

_ Does not meet compaction specifications where tested. Action taken: .

Remarks:

DISCLAIMER: The above tests are only intended to represent the soil and elevation which was tested. They are not a substitute for a complete soil investigation.

Ann Arbor Muskegon Traverse City Upper Peninsula
(800) 933-3959



File No.	2024.2038
Project	Golfview Drive Reconstruction
Date	10/11/2024
Arrival Time	03:39 PM
Tested By	Jalen Salazar
Ordered By	BDR Inc

Field Density & Compaction Test Report

Test No.	Description of Soil	Max. Density (pcf)	Wet Density (pcf)	Water Content (%)	Dry Density (pcf)	Compaction (%)
1	Asphalt : 5EML	156.7	152.5	5.1	145.1	97.3
2	Asphalt : 5EML	156.7	150.4	5.7	142.3	96.0
3	Asphalt : 5EML	156.7	148.5	4.9	141.6	94.8
4	Asphalt : 5EML	156.7	148.5	4.8	141.7	94.8
5	Asphalt : 5EML	156.7	154.7	4.7	147.8	98.7
6	Asphalt : 5EML	156.7	148.4	4.4	142.1	94.7
7	Asphalt : 5EML	156.7	149.8	5.1	142.5	95.6

Test No.	Test Elevation	Probe Depth	Area Represented	Location of Tests
1	100.0	BS	Asphalt Top : Roadway : 723 Golfview Drive. : Eastbound lane.	
2	100.0	BS	Asphalt Top : Roadway : Next to the West Shore sign. : Eastbound lane.	
3	100.0	BS	Asphalt Top : Roadway : 719 Golfview Drive. : Eastbound lane.	
4	100.0	BS	Asphalt Top : Roadway : 711 Golfview Drive. : Eastbound lane.	
5	100.0	BS	Asphalt Top : Roadway : 707 Golfview Drive. : Eastbound lane.	
6	100.0	BS	Asphalt Top : Roadway : 702 Golfview Drive. : Eastbound lane.	
7	100.0	BS	Asphalt Top : Roadway : 716 Golfview Drive. : Eastbound lane.	
Elevation Ref.: 100.0 = F. Asphalt Compaction Method: Vibratory Roller Lift Thickness (inches): 1.5" If Observed: Yes Weather: Sunny Temperature (F°): 70				

Test Results Reported To Bruce's Blacktop

X Does Meet 94% compaction specifications where tested.

_ Does not meet compaction specifications where tested. Action taken: .

Remarks:

DISCLAIMER: The above tests are only intended to represent the soil and elevation which was tested. They are not a substitute for a complete soil investigation.

Ann Arbor Muskegon Traverse City Upper Peninsula
(800) 933-3959



File No.	2024.2038
Project	Golfview Drive Reconstruction
Date	10/11/2024
Arrival Time	04:49 PM
Tested By	Jalen Salazar
Ordered By	BDR Inc

Field Density & Compaction Test Report

Test No.	Description of Soil	Max. Density (pcf)	Wet Density (pcf)	Water Content (%)	Dry Density (pcf)	Compaction (%)
1	Asphalt : 5EML	156.7	152.1	5.2	144.6	97.1
2	Asphalt : 5EML	156.7	150.8	6.0	142.3	96.2
3	Asphalt : 5EML	156.7	151.0	5.8	142.7	96.4
4	Asphalt : 5EML	156.7	149.9	5.3	142.4	95.7
5	Asphalt : 5EML	156.7	151.4	5.2	143.9	96.6
6	Asphalt : 5EML	156.7	149.5	5.2	142.1	95.4
7	Asphalt : 5EML	156.7	150.4	5.5	142.6	96.0

Test No.	Test Elevation	Probe Depth	Area Represented	Location of Tests
1	100.0	BS	Asphalt Top : Roadway : 723 Golfview Drive. : Westbound lane.	
2	100.0	BS	Asphalt Top : Roadway : Next to the West Shore sign. : Westbound lane.	
3	100.0	BS	Asphalt Top : Roadway : 719 Golfview Drive. : Westbound lane.	
4	100.0	BS	Asphalt Top : Roadway : 711 Golfview Drive. : Westbound lane.	
5	100.0	BS	Asphalt Top : Roadway : 707 Golfview Drive. : Westbound lane.	
6	100.0	BS	Asphalt Top : Roadway : 702 Golfview Drive. : Westbound lane.	
7	100.0	BS	Asphalt Top : Roadway : 716 Golfview Drive. : Westbound lane.	
Elevation Ref.: 100.0 = F. Asphalt Compaction Method: Vibratory Roller Lift Thickness (inches): 1.5" If Observed: Yes Weather: Sunny Temperature (F°): 70				

Test Results Reported To Bruce's Blacktop

X Does Meet 94% compaction specifications where tested.

_ Does not meet compaction specifications where tested. Action taken: .

Remarks:

DISCLAIMER: The above tests are only intended to represent the soil and elevation which was tested. They are not a substitute for a complete soil investigation.

Ann Arbor Muskegon Traverse City Upper Peninsula
(800) 933-3959



Geotechnical Engineering | Pavement Design Services
Structural Steel Detailing | Structural Engineering
Laboratory Testing | Construction Materials Testing

DAILY REPORT OF HMA PLANT INSPECTION

DISTRIBUTION: ORIGINAL - Testing Lab, Copy - Project Engineer, Copy - Plant Inspector

Michigan Departement
of Transportation
1903 (09/04)

CONTROL SECTION				Job Number 2024.2038				JOB LOCATION Golfview Drive Reconstruction				PROJECT ENGINEER Nederveld							
CONTRACTOR Bruces Blacktop						PLANT NUMBER 55-01				PLANT LOCATION Wayland				Report Number 1		DATE SAMPLED 10/10/2024			
FIELD TEST RESULTS										MATERIAL		LAB SAMPLE TIME TAKEN		PROJECT PRODUCTION RECORD					
EXTRACTION NUMBER		TYPE OF MIXTURE		MIX DESIGN No.		TYPE OF MIXTURE		MIX DESIGN No.						DAILY TONS		ACCUMULATED TONS			
		4EML		4EMLT2B4		4EML		4EMLT2B4		BASE									
										LEVELING				75 / 200					
										TOP									
		JMF		ACTUAL		DEV.		TOL.		JMF		ACTUAL		DEV.		TOL.			
ASPHALT %		5.30		5.65		0.35		-0.30		5.30		5.58		0.28		-0.30			
P. 1-1/2" (37.5 mm) %		100.0		100.0		0.0		±5.0		100.0		100.0		0.0		±5.0			
P. 1" (25.0 mm) %		100.0		100.0		0.0		±5.0		100.0		100.0		0.0		±5.0			
P. 3/4" (19.0 mm) %		100.0		100.0		0.0		±5.0		100.0		100.0		0.0		±5.0			
P. 1/2" (12.5 mm) %		91.3		93.7		2.4		±5.0		91.3		94.1		2.8		±5.0			
P. 3/8" (9.5 mm) %		85.8		88.0		2.2		±5.0		85.8		89.5		3.7		±5.0			
P. No. 4 (4.75 mm) %		66.7		70.2		3.5		±5.0		66.7		70.6		3.9		±5.0			
P. No. 8 (2.36 mm) %		51.9		54.1		2.2		±5.0		51.9		54.7		2.8		±5.0			
P. No. 30 (600 µm) %		28.5		28.2		-0.3		±4.0		28.5		28.3		-0.2		±4.0			
P. No. 200 (75 µm) %		5.3		5.6		0.3		±1.0		5.3		5.4		0.1		±1.0			
CRUSHED %		97.8		97.2		-1		-10%		97.8		97.3		-1		-10%			
MIX / AGGREGATE BLEND PROPORTIONS										TEMPERATURE				REMARKS :					
PIT NUMBER		GRADE, MANUFACTURER MATERIAL, SUPPLIER				TYPE OF MIXTURE		TIME TAKEN		MIX		AIR							
49-65		3/4 x 1/2				12.0%													
95-05		29A				16.0%													
03-1001		2NS				12.0%													
92-0035		SLAG SAND				13.0%													
75-05		3/32nd SAND				22.0%													
								X		DRUM PLANT									
RECLAIMED		RAP / YARD (55-01)				25.0%						BATCH PLANT		QUALIFICATION NUMBER					
FILLER												MIX TIME: DRY____WET____		0552-0225					
ASPHALT BINDER		58-28 Marathon ABS 3505				4.13%				PLANT INSPECTOR'S NAME (PRINT)				SIGNATURE				DATE TESTED	
										Matthew McClendon								10/10/2024	



Geotechnical Engineering | Pavement Design Services
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Laboratory Testing | Construction Materials Testing

DAILY REPORT OF HMA PLANT INSPECTION

DISTRIBUTION: ORIGINAL - Testing Lab, Copy - Project Engineer, Copy - Plant Inspector

Michigan Departement
of Transportation
1903 (09/04)

CONTROL SECTION				Job Number 2024.2038				JOB LOCATION Golfview Drive Reconstruction				PROJECT ENGINEER Nederveld						
CONTRACTOR Bruces Blacktop						PLANT NUMBER 55-01				PLANT LOCATION Wayland				Report Number 2		DATE SAMPLED 10/11/2024		
FIELD TEST RESULTS										MATERIAL		LAB SAMPLE TIME TAKEN		PROJECT PRODUCTION RECORD				
EXTRACTION NUMBER		TYPE OF MIXTURE		MIX DESIGN No.		TYPE OF MIXTURE		MIX DESIGN No.						DAILY TONS		ACCUMULATED TONS		
		5EML		5EMLT2B4		5EML		5EMLT2B4		BASE								
										LEVELING								
										TOP				75 / 100				
		JMF	ACTUAL	DEV.	TOL.	JMF	ACTUAL	DEV.	TOL.									
ASPHALT %		5.10	4.94	-0.16	-0.30	5.10	5.08	-0.02	-0.30	FILLER								
P. 1-1/2" (37.5 mm) %		100.0	100.0	0.0	±5.0	100.0	100.0	0.0	±5.0	ASPHALT BINDER								
P. 1" (25.0 mm) %		100.0	100.0	0.0	±5.0	100.0	100.0	0.0	±5.0	AGGREGATE MOISTURE CONTENT				MINERAL FILLER				
P. 3/4" (19.0 mm) %		100.0	100.0	0.0	±5.0	100.0	100.0	0.0	±5.0	MATERIAL		TIME	%					
P. 1/2" (12.5 mm) %		100.0	98.9	-1.1	±5.0	100.0	99.4	-0.6	±5.0									
P. 3/8" (9.5 mm) %		95.9	95.0	-0.9	±5.0	95.9	96.1	0.2	±5.0					P. No. 30 (600 µm)				
P. No. 4 (4.75 mm) %		70.2	66.6	-3.6	±5.0	70.2	67.3	-2.9	±5.0					P. No. 200 (75 µm)				
P. No. 8 (2.36 mm) %		49.5	48.5	-1.0	±5.0	49.5	50.0	0.5	±5.0	PLANT OPR. START		END		LOST TIME		ACTUAL HRS. OPR.		
P. No. 30 (600 µm) %		29.9	30.7	0.8	±4.0	29.9	31.4	1.5	±4.0									
P. No. 200 (75 µm) %		5.4	5.4	0.0	±1.0	5.4	5.6	0.2	±1.0	KIT NUMBER				EXTRACTOR NUMBER				
CRUSHED %		95.2	95.1	0	-10%	95.2	95.1	0	-10%									
MIX / AGGREGATE BLEND PROPORTIONS						TEMPERATURE				REMARKS :								
PIT NUMBER		GRADE, MANUFACTURER MATERIAL, SUPPLIER				TYPE OF MIXTURE		TIME TAKEN	MIX	AIR								
95-05		29A				26.0%												
03-1001		2NS				21.0%												
92-0035		SLAG SAND				25.0%												
								X	DRUM PLANT		2024.2038, 2409497, 2409499							
RECLAIMED		RAP / YARD (55-01)				28.0%			BATCH PLANT		QUALIFICATION NUMBER							
FILLER									MIX TIME: DRY____WET____		0552-0225							
ASPHALT BINDER		58-28 Marathon ABS 3505				3.74%			PLANT INSPECTOR'S NAME (PRINT)				SIGNATURE				DATE TESTED	
									Matthew McClendon								10/15/2024	



REPORT OF COMPACTED HMA CORE DENSITY & PERCENT COMPACTION

CONTROL SECTION	JOB NUMBER	PROJECT LOCATION						MIXTURE TYPE		MIX DESIGN No.		REPORT NUMBER	
	2024.2038	Golfview Drive Reconstruction						4EML		4EMLT2B4		1	
CONTRACTOR				PLANT NUMBER				PLANT LOCATION					
Bruces Blacktop				55-01				Wayland					
PROJECT ENGINEER		NAME OF TESTER (Please Print)			Tester (Signature)				QUALIFICATION NUMBER			LOT NUMBER	
Nederveld		Matthew McClendon							0552-0225			1	
DATE		10/10/24	10/10/24	10/10/24		10/10/24	10/10/24						
Core Thickness Prior to Trimming		1 1/2"	1 7/8"	1 7/8"		2"	1 5/8"						
SUBLOT NUMBER / CORE LETTER		1A	1B	1C		JC 1	JC 2						
A. WEIGHT OF CORE (in water), grams		789.2	867.5	876.3		677.2	585.8						
B. WEIGHT OF CORE (surface dry), grams		1380.4	1533.1	1537.3		1247.0	1083.4						
C. WEIGHT OF CORE & PAN (oven dry), grams		1374.4	1522.2	1526.8		1222.8	1061.0						
D. WEIGHT OF PAN, grams													
E. WEIGHT OF CORE (C - D), grams		1374.4	1522.2	1526.8		1222.8	1061.0						
F. VOLUME OF CORE (B - A), cc		591.2	665.6	661.0		569.8	497.6						
G. CORE SPECIFIC GRAVITY (E / F)		2.325	2.287	2.310		2.146	2.132						
H. SUBLOT Gmm (2)TEST RESULTS		2.499				2.499							
I. % CORE COMPACTION (G / H) x 100		93.0%	91.2%	92.4%		85.8%	85.3%						
J. SUBLOT % CORE COMPACTION (Average of cores)		92%				86%							
K. LOT AVERAGE DENSITY (Sum of J / number of sublots in lot)													
Average Core Thickness = 1 3/4"													



REPORT OF COMPACTED HMA CORE DENSITY & PERCENT COMPACTION

CONTROL SECTION	JOB NUMBER	PROJECT LOCATION						MIXTURE TYPE		MIX DESIGN No.		REPORT NUMBER	
	2024.2038	Golfview Drive Reconstruction						5EML		5EMLT2B4		2	
CONTRACTOR				PLANT NUMBER			PLANT LOCATION						
Bruces Blacktop				55-01			Wayland						
PROJECT ENGINEER		NAME OF TESTER (Please Print)			Tester (Signature)				QUALIFICATION NUMBER			LOT NUMBER	
Nederveld		Matthew McClendon							0552-0225			1	
DATE		10/11/24	10/11/24	10/11/24		10/11/24	10/11/24						
Core Thickness Prior to Trimming		1 5/8"	2"	1 3/4"		1 7/8"	1 3/4"						
SUBLOT NUMBER / CORE LETTER		1A	1B	1C		JC 1	JC 2						
A. WEIGHT OF CORE (in water), grams		909.5	1135.1	1021.5		907.4	915.3						
B. WEIGHT OF CORE (surface dry), grams		1595.4	1955.5	1822.2		1651.6	1687.8						
C. WEIGHT OF CORE & PAN (oven dry), grams		1582.7	1950.7	1813.2		1610.5	1641.0						
D. WEIGHT OF PAN, grams													
E. WEIGHT OF CORE (C - D), grams		1582.7	1950.7	1813.2		1610.5	1641.0						
F. VOLUME OF CORE (B - A), cc		685.9	820.4	800.7		744.2	772.5						
G. CORE SPECIFIC GRAVITY (E / F)		2.307	2.378	2.265		2.146	2.124						
H. SUBLOT Gmm (2) TEST RESULTS		2.525				2.525							
I. % CORE COMPACTION (G / H) x 100		91.4%	94.2%	89.7%		85.0%	84.1%						
J. SUBLOT % CORE COMPACTION (Average of cores)		92%				85%							
K. LOT AVERAGE DENSITY (Sum of J / number of sublots in lot)													
Average Top Core Thickness = 1 3/4"													

BENCHMARK #13: ELEV.= 611.17 (NGVD29)
SET RAILROAD SPIKE IN NORTH SIDE OF UTILITY POLE LOCATED 6' SOUTH OF THE SOUTH EDGE OF PAVEMENT FOR CENTER STREET & 7' WEST OF THE EAST LINE OF THE EXISTING BUILDING TO THE NORTH.

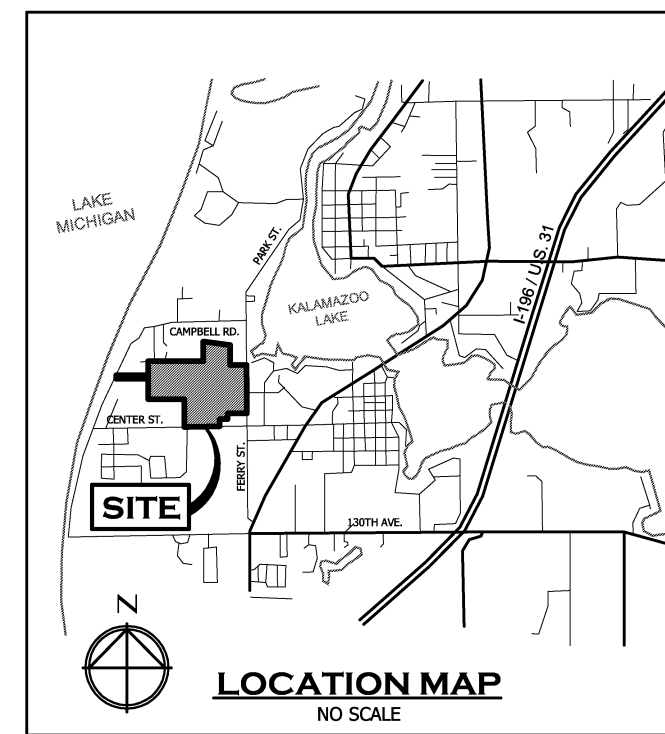
BENCHMARK #20: ELEV.= 634.92 (NGVD29)
SET RAILROAD SPIKE IN NORTH SIDE OF 60' ASH TREE LOCATED 28' EAST OF THE END OF GOLVIEW DRIVE & 360' SOUTH OF THE NORTH SIDE OF PAVEMENT FOR GOLVIEW DRIVE.

BENCHMARK #2144: ELEV.= 621.77 (NGVD29)
RAILROAD SPIKE IN NORTH SIDE OF UTILITY POLE LOCATED 9' EAST OF THE EAST EDGE OF PAVEMENT FOR FERRY STREET & 1000' NORTH OF THE EAST 1/4 CORNER OF SECTION 17.

BENCHMARK #2212: ELEV.= 627.02 (NGVD29)
RAILROAD SPIKE IN WEST SIDE OF UTILITY POLE LOCATED 9' EAST OF THE EAST EDGE OF PAVEMENT FOR FERRY STREET & 630' NORTH OF THE EAST 1/4 CORNER OF SECTION 17.

LEGEND

- EX. GRADE CONTOUR
PROP. GRADE CONTOUR
PROP. GRADE ELEV. (BLACKTOP)
PROP. GRADE ELEV. (GUTTER)
PROP. GRADE ELEV. (HIGH POINT)
EX. BITUMINOUS
PROP. BITUMINOUS
PROP. STORM SEWER
PROP. UNDERDRAIN
PROP. SANITARY SEWER
PROP. WATERMAIN
PROP. LIMITS OF GRADING
PROP. SILT FENCE
WETLAND BOUNDARY FLAGS
WETLAND AREA
MONITORING WELL
EXIST. TREELINE
SOIL EROSION CONTROL MATTING
SOIL BORING LOCATION



NEDERVELD
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800.222.1868
ANN ARBOR
3025 Miller Road
Ann Arbor, MI 48103
PHONE: 734.929.6963
CHICAGO
1082 National Parkway
Schaumburg, IL 60173
PHONE: 312.878.3897
COLUMBUS
6355 Old Avery Road, Suite A
Dublin, OH 43016
PHONE: 614.899.1127
GRAND RAPIDS
217 Grandville Ave., Suite 302
Grand Rapids, MI 49503
PHONE: 616.575.5190
HOLLAND
347 Hoover Boulevard
Holland, MI 49423
PHONE: 616.393.0449
INDIANAPOLIS
8459 Castlewood Dr., Suite B
Indianapolis, IN 46250
PHONE: 317.288.3762

Soil Erosion/Sedimentation
Control and Grading Plan
of
Golfview Drive (Private)
WESTSHORE PHASE 1B

**DOUGLAS PROPERTY
DEVELOPMENT, LLC**
Attention:
Kevin Einfeld
5510 Cascade Road SE, Suite 21
Grand Rapids, MI 49506
Phone: (616) 458-8505

date	comment	no.	date	checked by	drawn by	date
03/14/13	CONSTRUCTION PLAN SUBMITTAL	1	03/14/13	RJB	BEM	03/13/13
03/22/13	ALLEGAN COUNTY SEISC AGENT	2	03/22/13	RJB		
03/27/13	CITY ENGINEER	3	03/27/13	RJB		
		4				
		5				
		6				
		7				
		8				

project no.:
13200132
C-300
sheet no.:
2 OF 6
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CONSTRUCTION STAKING AND LAYOUT
SHALL BE PERFORMED BY NEDERVELD, INC.

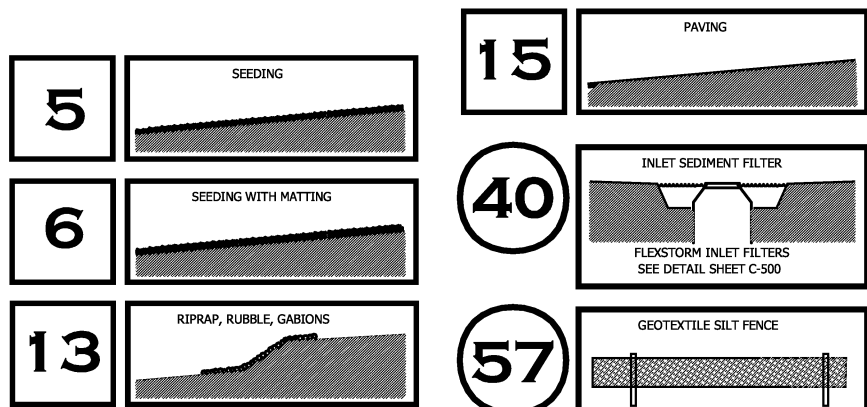


UTILITY LOCATIONS ARE DERIVED FROM ACTUAL MEASUREMENTS OR AVAILABLE RECORDS. THEY SHOULD NOT BE INTERPRETED TO BE EXACT LOCATIONS NOR SHOULD IT BE ASSUMED THAT THEY ARE THE ONLY UTILITIES IN THIS AREA.
NOTE: EXISTING UTILITIES AND SERVICE LINES IDENTIFIED AS "PLAN" WERE OBTAINED FROM AVAILABLE CITY AS-BUILT RECORD DRAWINGS. THE CONTRACTOR SHALL VERIFY THE LOCATION, DEPTH AND STATUS OF ALL UTILITIES AND SERVICE LINES PRIOR TO NEW CONNECTIONS.

NOTE:
SEDIMENT BASIN #1 TO BE BUILT & STABILIZED FIRST BEFORE ANY OTHER CONSTRUCTION WORK. STORM DISCHARGE TO THE SEDIMENT BASIN SHOULD NOT OCCUR UNTIL THE BASIN IS FULLY STABILIZED.

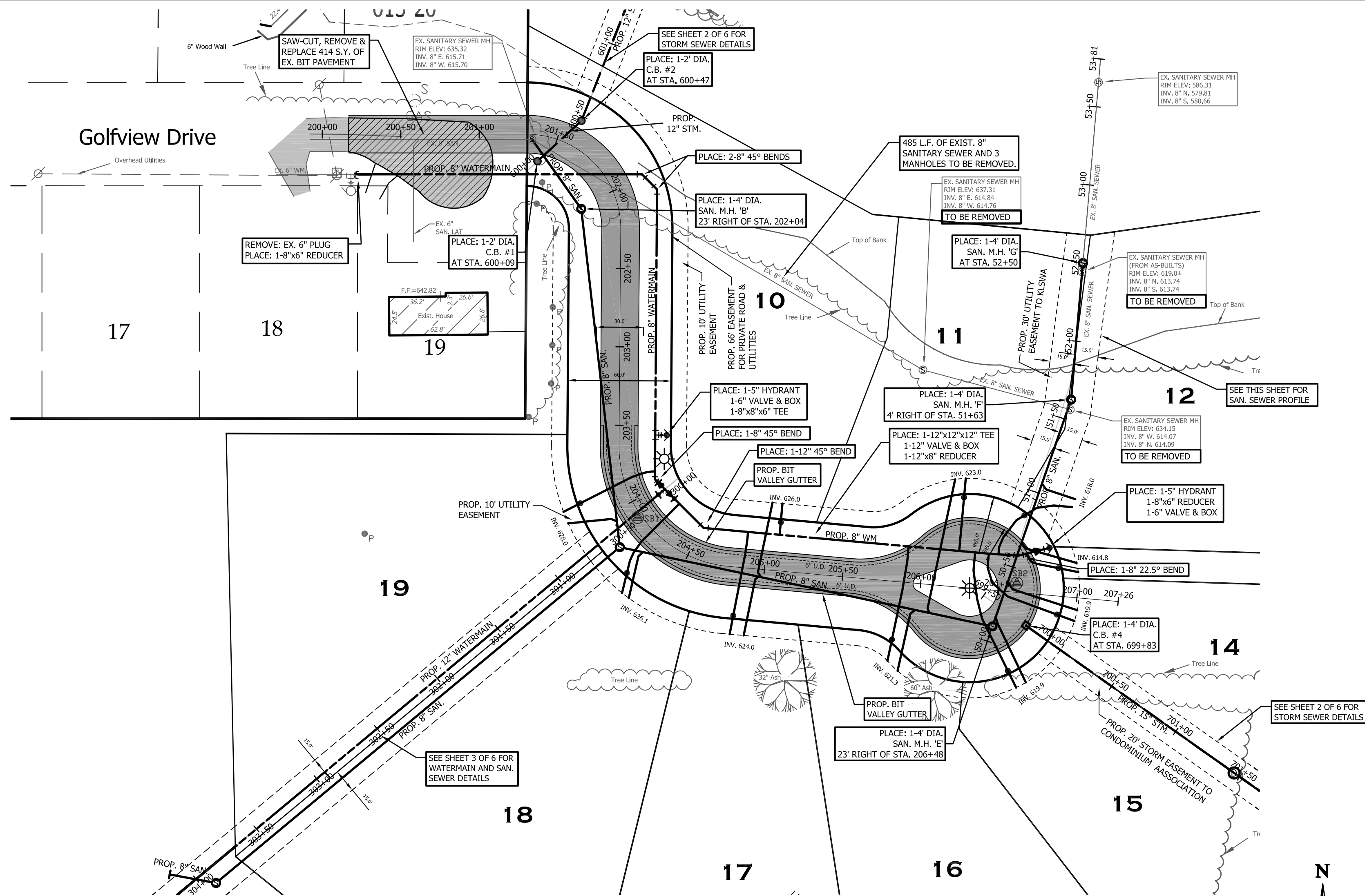
ALL WORK WITHIN REGULATED WETLANDS SHALL BE COMPLETED IN ACCORDANCE WITH MDEQ PERMIT # _____ ISSUED

NOTE: ALL FILL AREAS, INCLUDING UTILITY TRENCHES, BUILDING ENVELOPES AND STREETS ARE TO BE COMPACTED IN 12" LOOSE LIFTS (CLAY AREAS: 4"- 6" LIFTS) TO 95% MAX. DRY DENSITY AS DETERMINED BY MICHIGAN CONE OR MODIFIED PROCTOR (ASTM D-1557) TESTING.

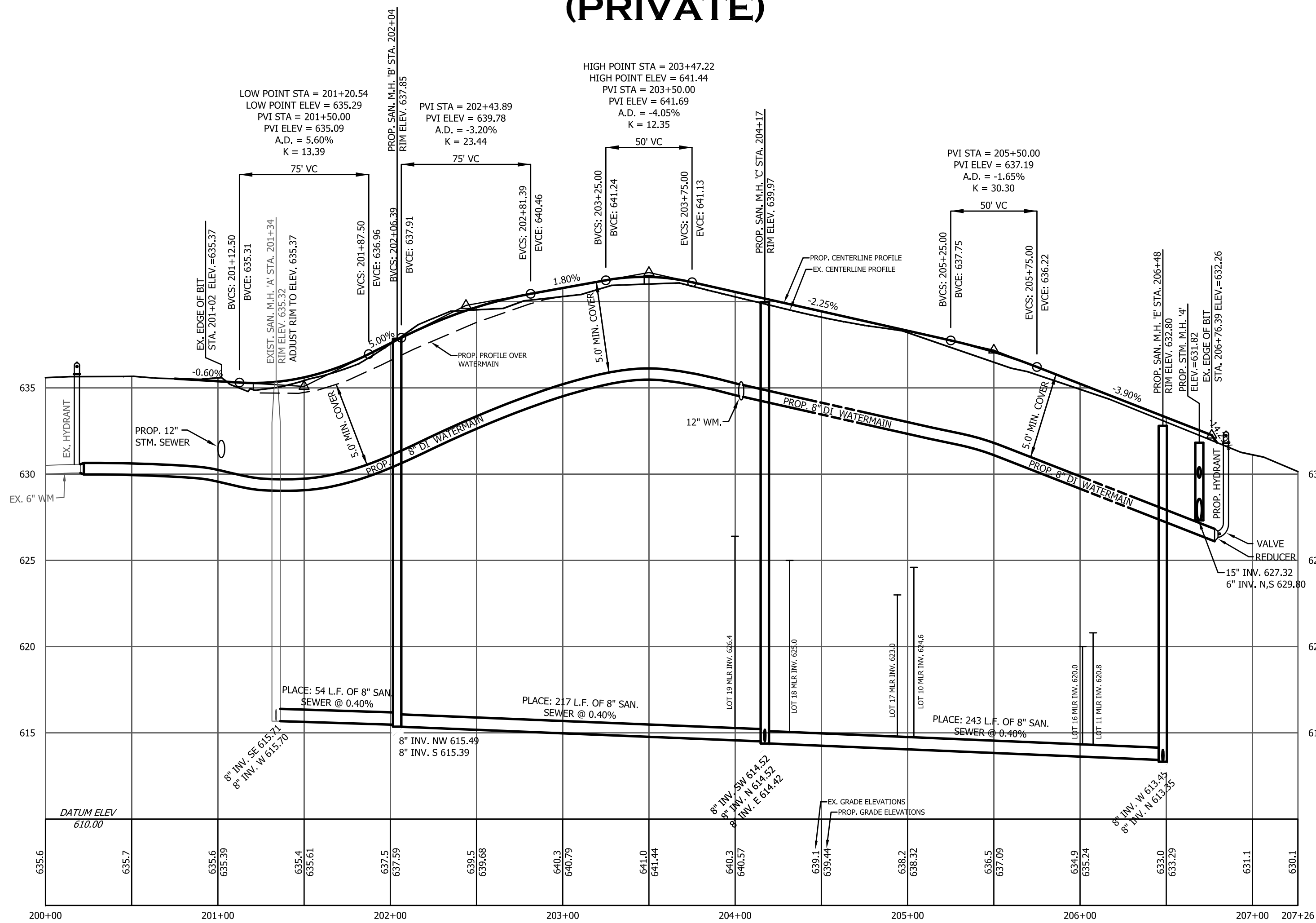


SOIL EROSION AND SEDIMENTATION CONTROL NOTES:

- 1) CONTRACTOR SHALL POSSESS THE SOIL EROSION AND SEDIMENTATION CONTROL PERMIT PRIOR TO START OF ANY EARTHWORK.
- 2) CONTRACTOR SHALL MODIFY THIS SOIL EROSION AND SEDIMENTATION CONTROL PLAN TO SHOW THE ADDITIONAL CONTROL MEASURES INTENDED TO BE USED DURING CONSTRUCTION. SUBMIT MODIFICATIONS TO THE CONTROLLING AGENCY, THE OWNER, AND THE ENGINEER.
- 3) EROSION PROTECTION SHALL BE PROVIDED AT ALL STORM SEWER INLETS AND OUTLETS. ALL BARE EARTH SHALL BE STABILIZED WITH SEEDING.
- 4) LOCATION AND TYPE OF EROSION CONTROL MEASURES ARE IDENTIFIED ON THE SKETCH BY KEY NUMBERS, 5-40, RELATING TO THE MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY (MDEQ) EROSION CONTROL AND BEST MANAGEMENT PRACTICES.
 - DENOTES TEMPORARY PRACTICES
 - DENOTES PERMANENT PRACTICES
- 5) A 150 FOOT LONG, 6 INCH DEEP CRUSHED CONCRETE ENTRANCE SHALL BE INSTALLED WHERE DIRT HEDGERS WILL BE ENTERING & EXITING THE SITE. ALL DIRT, CLAY ROCK, AND OTHER SOIL SHALL BE CLEARED FROM THE ROAD RIGHT-OF-WAY.
- 6) ALL DIRT STOCKPILES SHALL HAVE SILT FENCE AROUND THEM.
- 7) ALL INLET FILTERS AND SILT FENCE SHALL BE INSPECTED WEEKLY AND AFTER STORM EVENTS TO ENSURE THOSE CONTROLS ARE WORKING OPTIMALLY.
- 8) VEGETATIVE FILTER STRIPS SHALL BE PLACED ON ALL AREAS OF THE DEVELOPMENT WHERE SLOPES EXCEED 1% BUT ARE LESS THAN 5% AND MUST BE AT LEAST 20' IN WIDTH. WOVEN MULCH BANNETS SHALL BE PLACED IMMEDIATELY OVER SCARPED SLOPES AND MAINTAINED UNTIL VISIBLE VEGETATIVE GROWTH HAS BEEN ESTABLISHED. SLOPES GREATER THAN 5% SHOULD HAVE DIVERSIONS OR ANY OTHER CONCEIVABLE CONTROL TO CARRY WATER AWAY FROM THESE AREAS UNTIL VEGETATIVE GROWTH OCCURS.



GOLF VIEW DRIVE (PRIVATE)

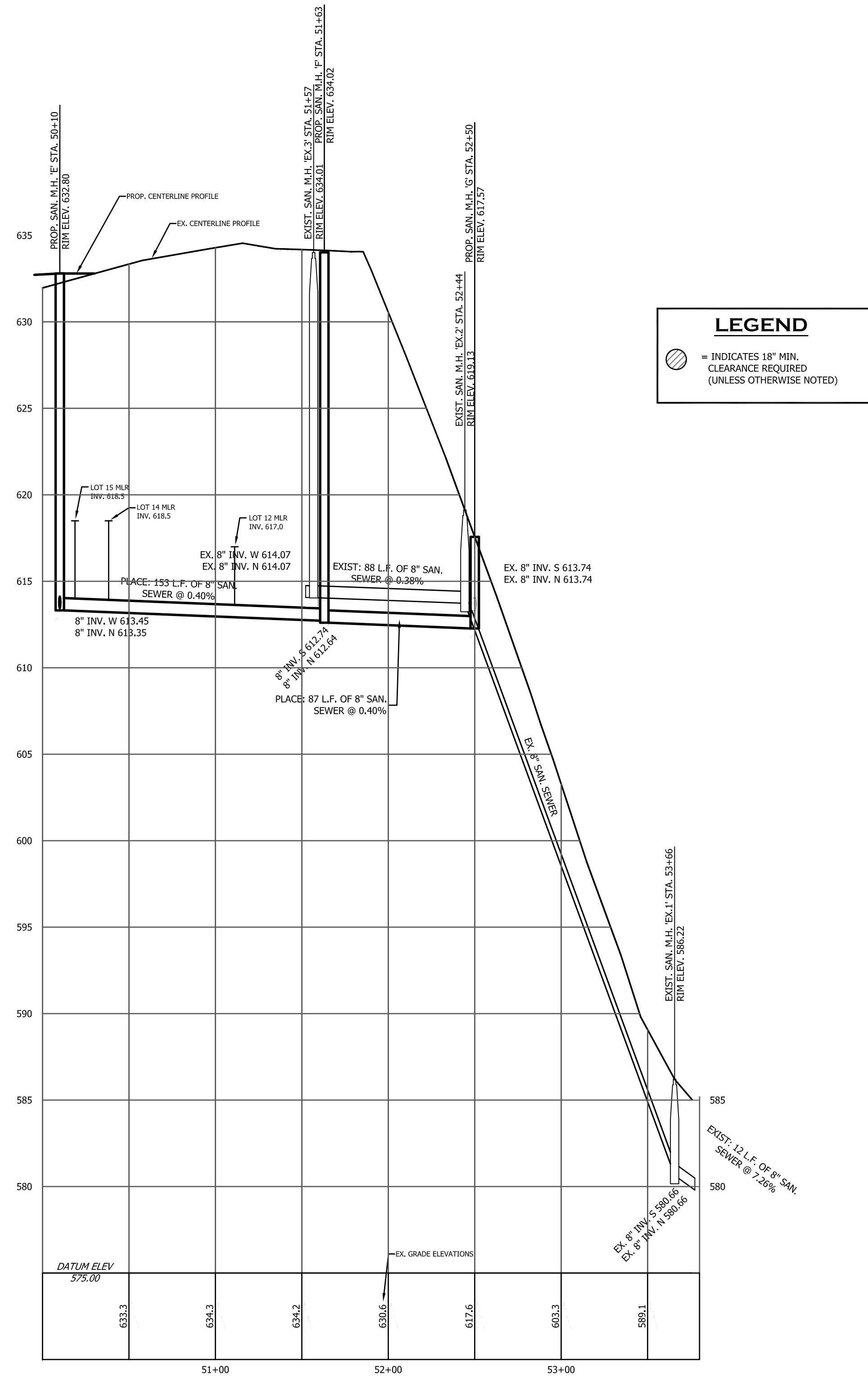


SB-1
Surface Elevation ~ 640
0.0' - 0.1' Topsoil - dark brown fine sand (12.0')
1.0' - 10.0' Sand - compact light brown fine (dry)
10.0' - 10.3' Clay - stiff brown silty
10.3' - 13.5' Clay - stiff gray silty
13.5' - 14.5' Silt - compact brown sandy (wet)
14.5' - 15.0' Clay - stiff gray silty
15.0' End of Boring (Elevation ~ 625)
Groundwater encountered 10.0 ft.

SB-2
Surface Elevation ~ 633
0.0' - 0.1' Topsoil - dark brown fine sand (12.0')
1.0' - 9.5' Sand - compact light brown (wet below 4.0 feet)
9.5' - 10.0' Clay - stiff brown silty
10.0' - 11.0' Clay - stiff gray silty
11.0' - 14.0' Silt - stiff brown clayey with occasional clay seams (wet)
14.0' - 15.0' Silt - stiff gray clayey (wet)
15.0' End of Boring (Elevation ~ 618)
Groundwater encountered 4.5 ft.

SB-4
Surface Elevation ~ 624
0.0' - 1.0' Topsoil - dark brown fine sand (12.0')
1.0' - 2.2' Sand - compact light brown fine with a trace of clay (wet)
2.2' - 9.5' Clay - firm to stiff brown silty
9.5' - 14.0' Sand - compact light brown fine with silt and clay seams (wet)
14.0' - 15.0' Clay - stiff gray silty
15.0' End of Boring (Elevation ~ 609)
Groundwater encountered 1.5 ft.

PROPOSED SANITARY PROFILE



LEGEND
= INDICATES 18" MIN. CLEARANCE REQUIRED (UNLESS OTHERWISE NOTED)

NEDERVELD
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PHONE: 616.393.0449
INDIANAPOLIS
8459 Castletown Dr., Suite B
Indianapolis, IN 46250
PHONE: 317.288.3762

Golfview Drive (Private)
WESTSHORE PHASE 1B
PART OF SECTION 17, T3N, R16W,
CITY OF DOUGLAS, ALLEGAN COUNTY, MICHIGAN

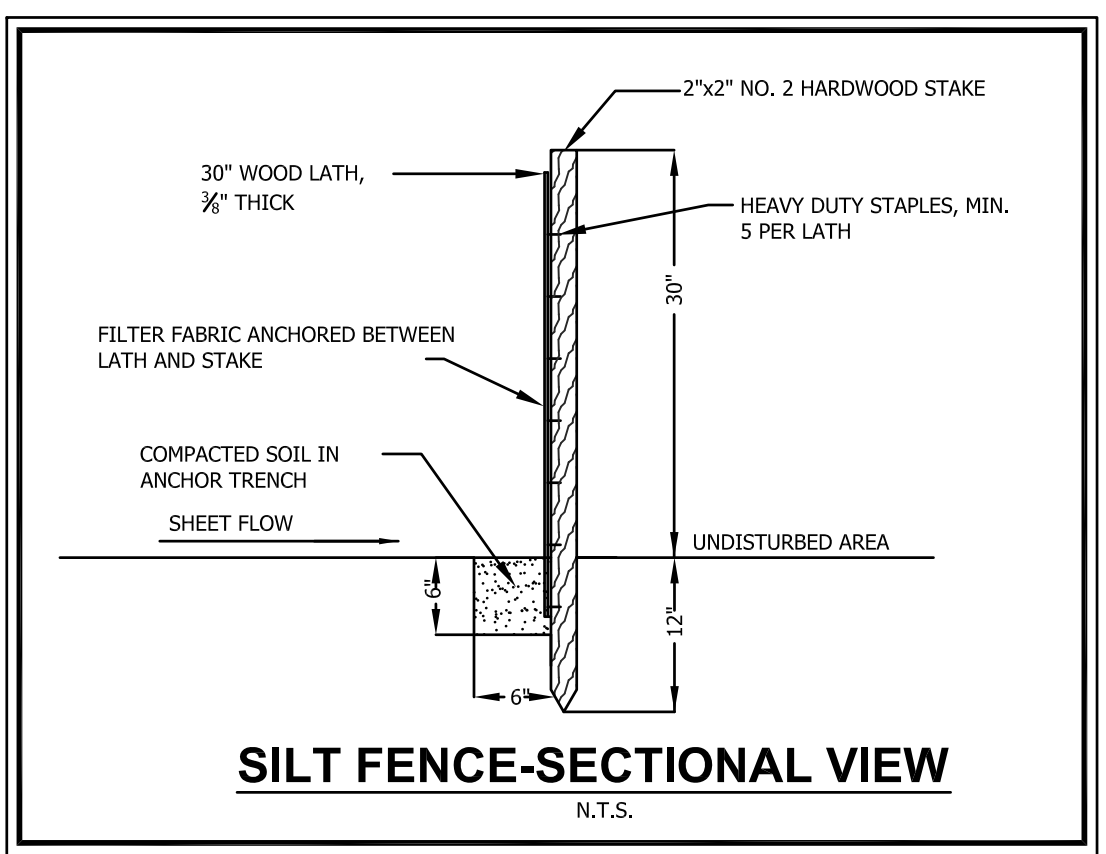
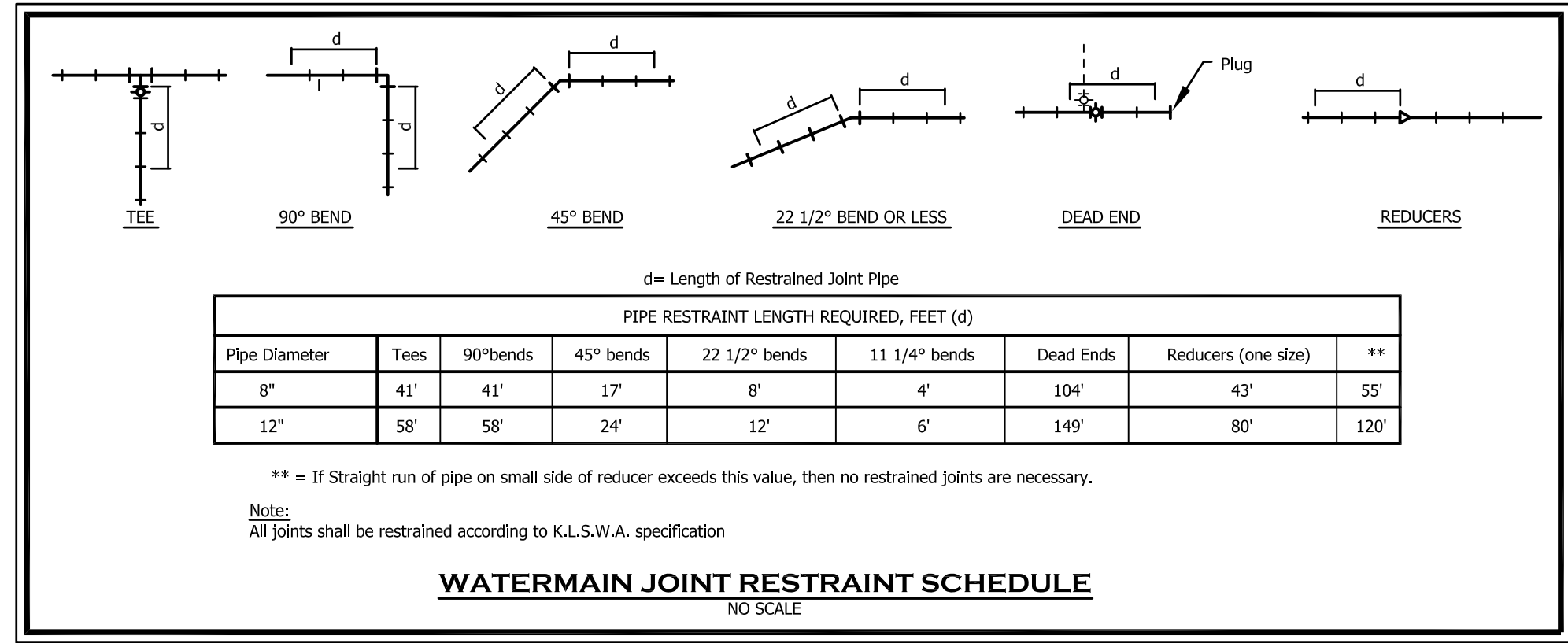
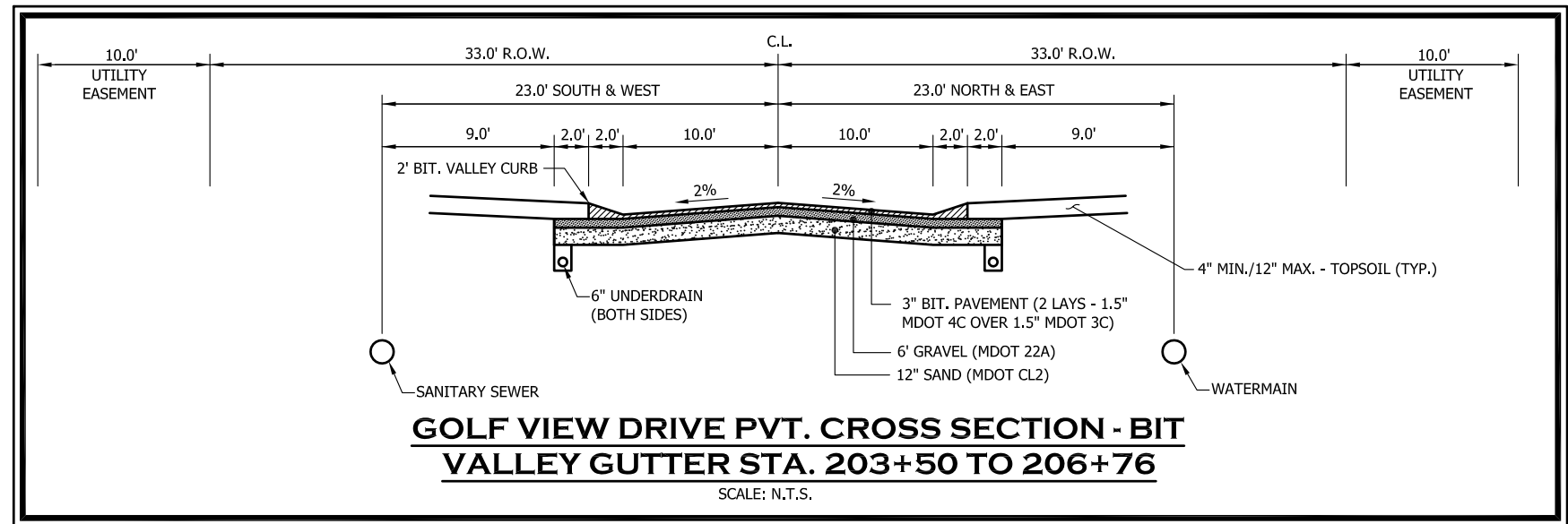
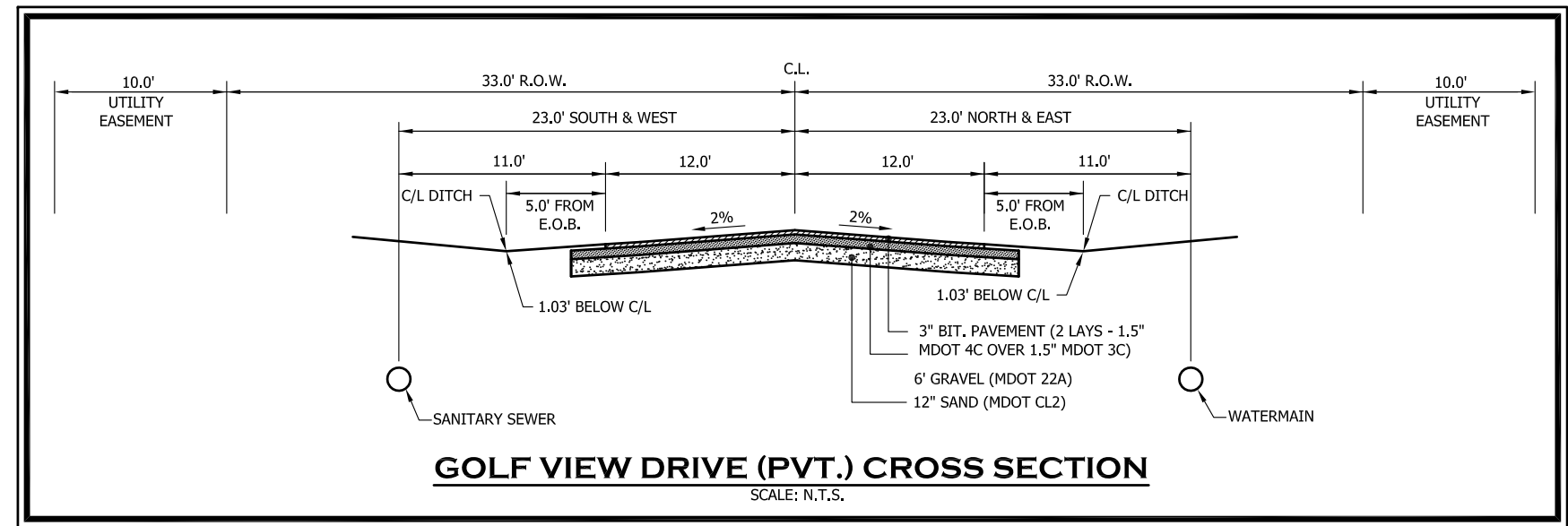
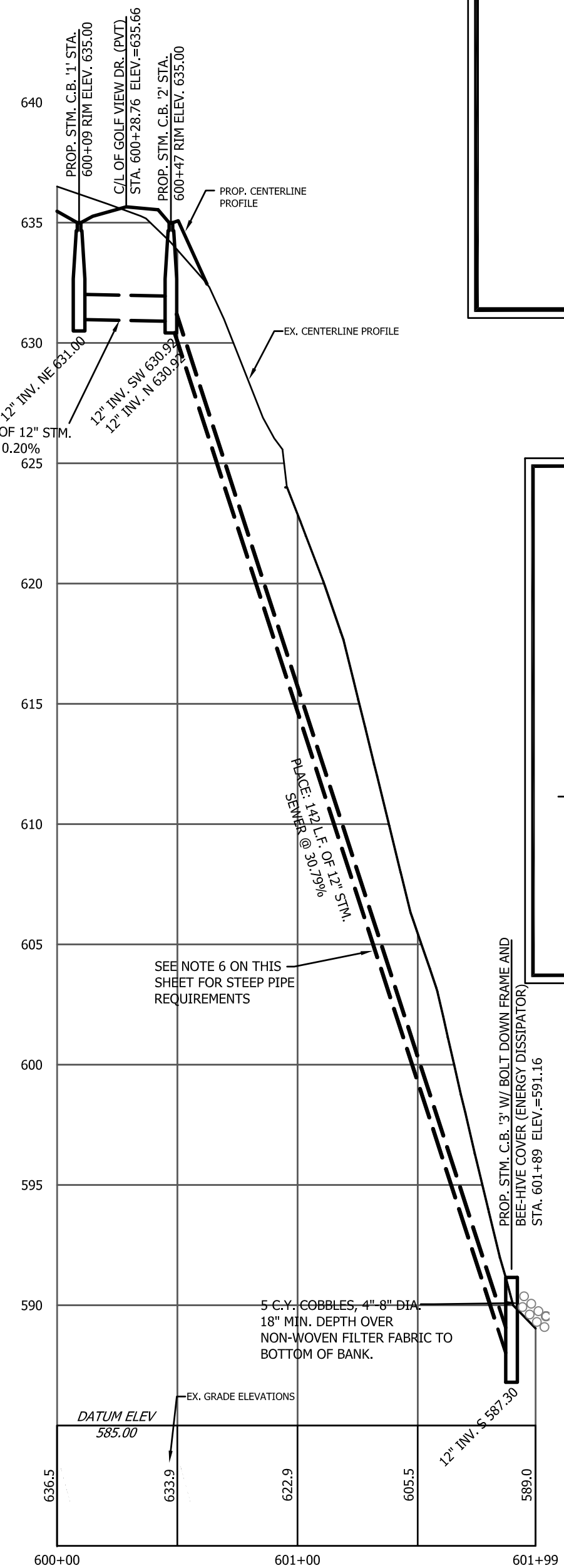
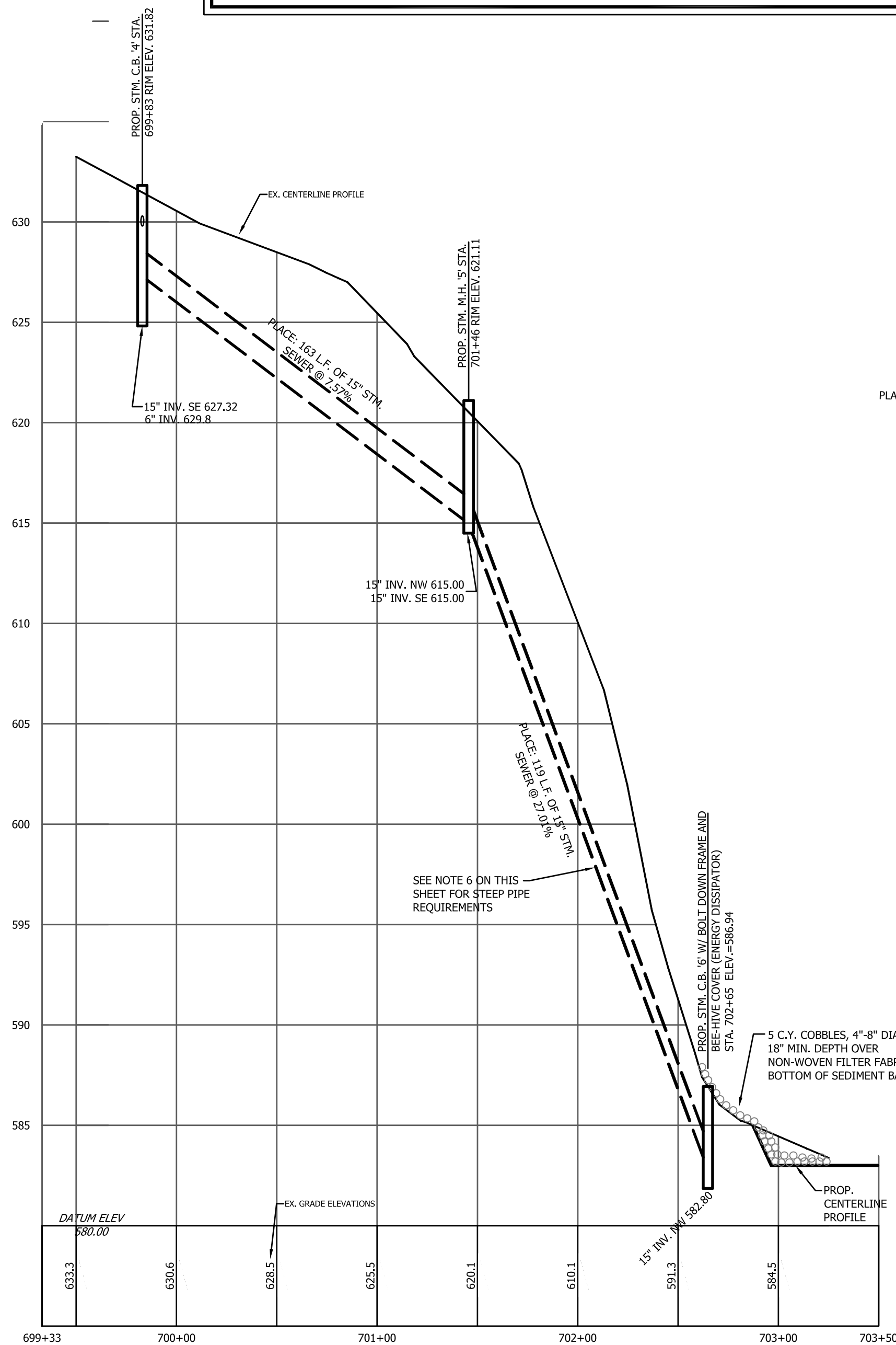
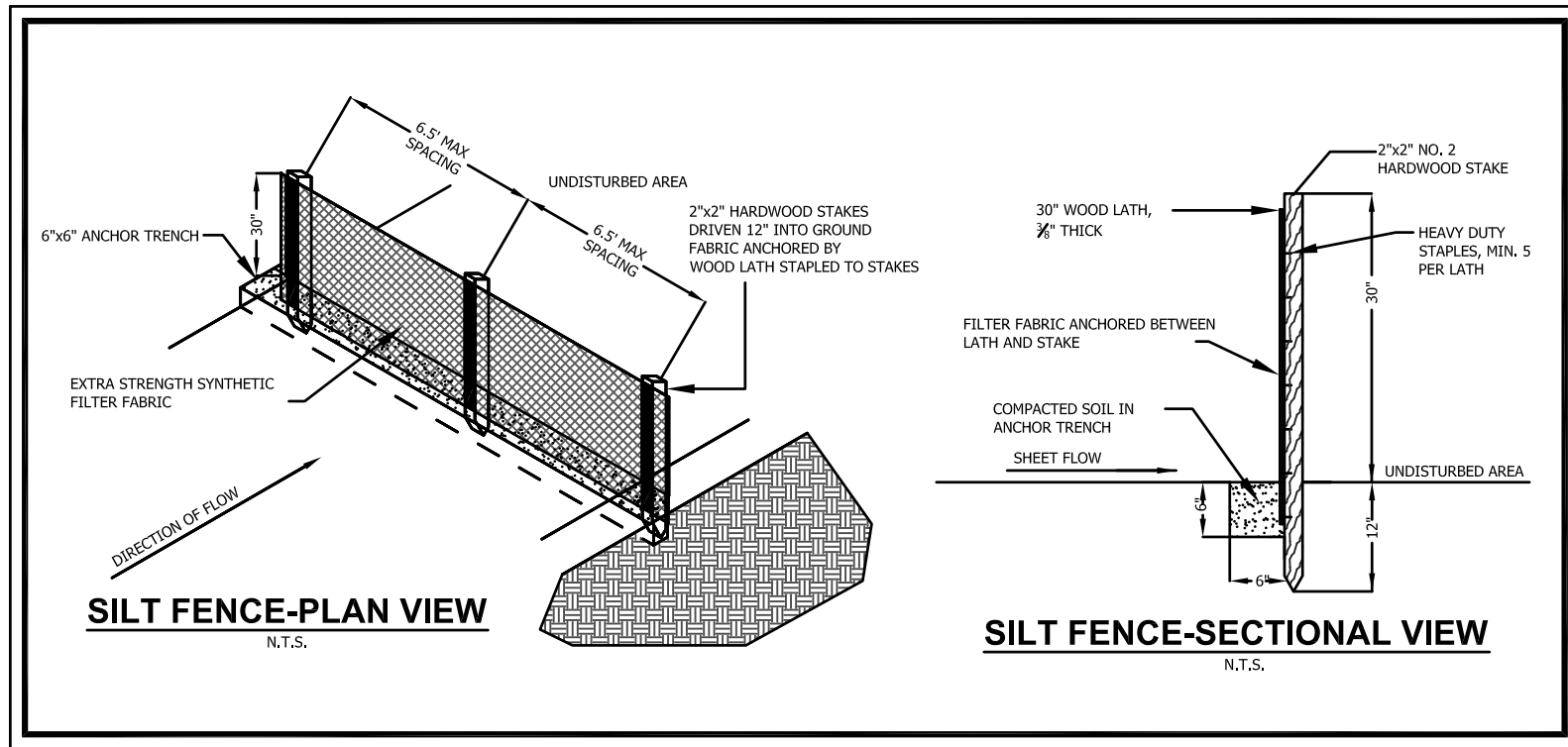
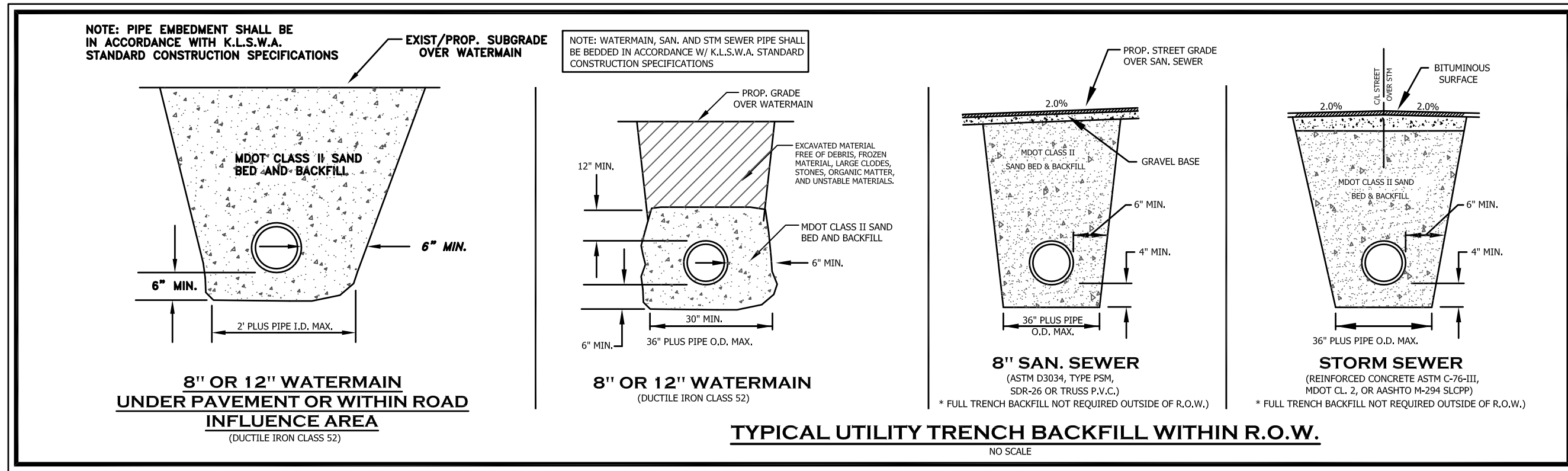
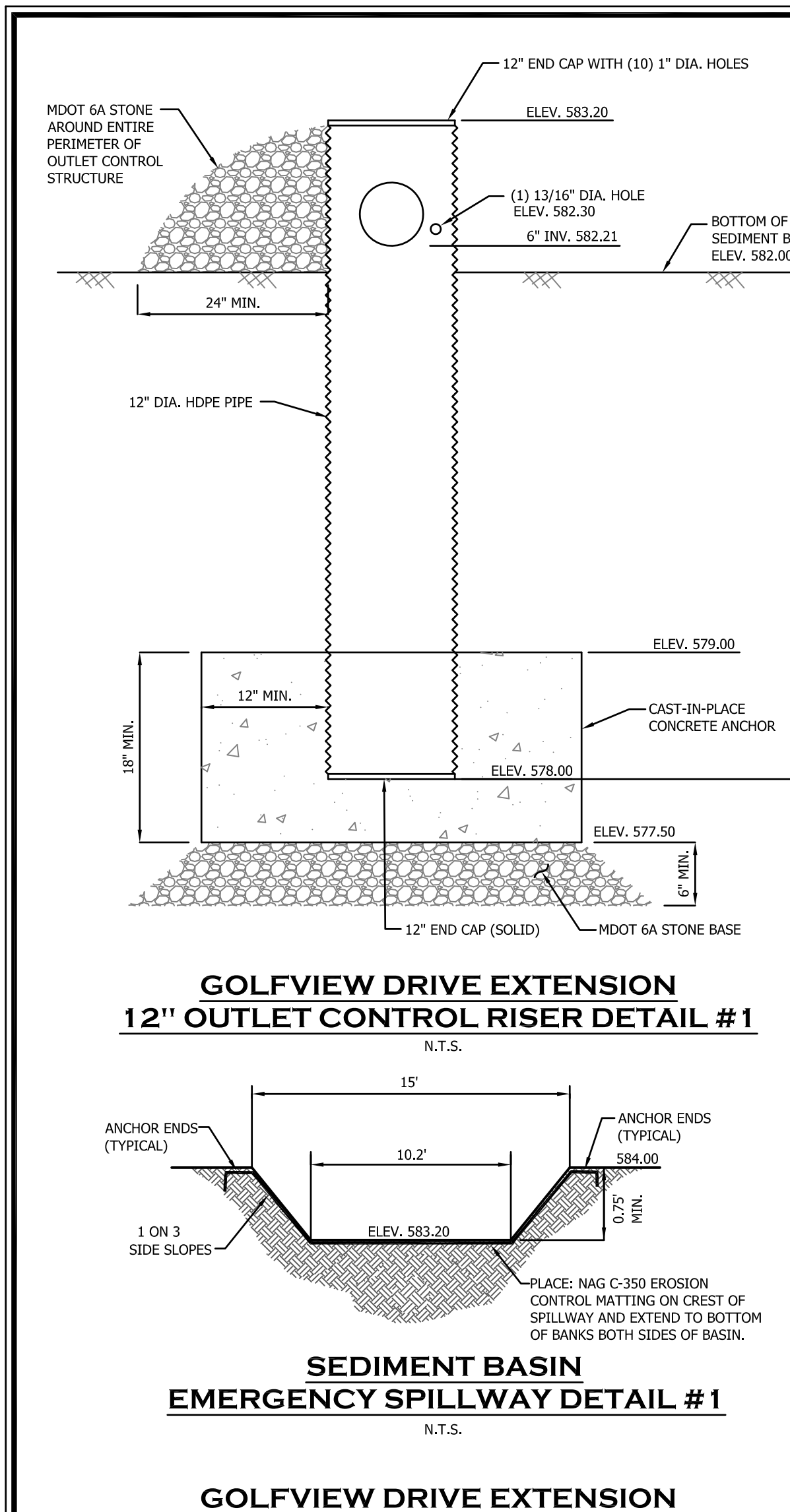
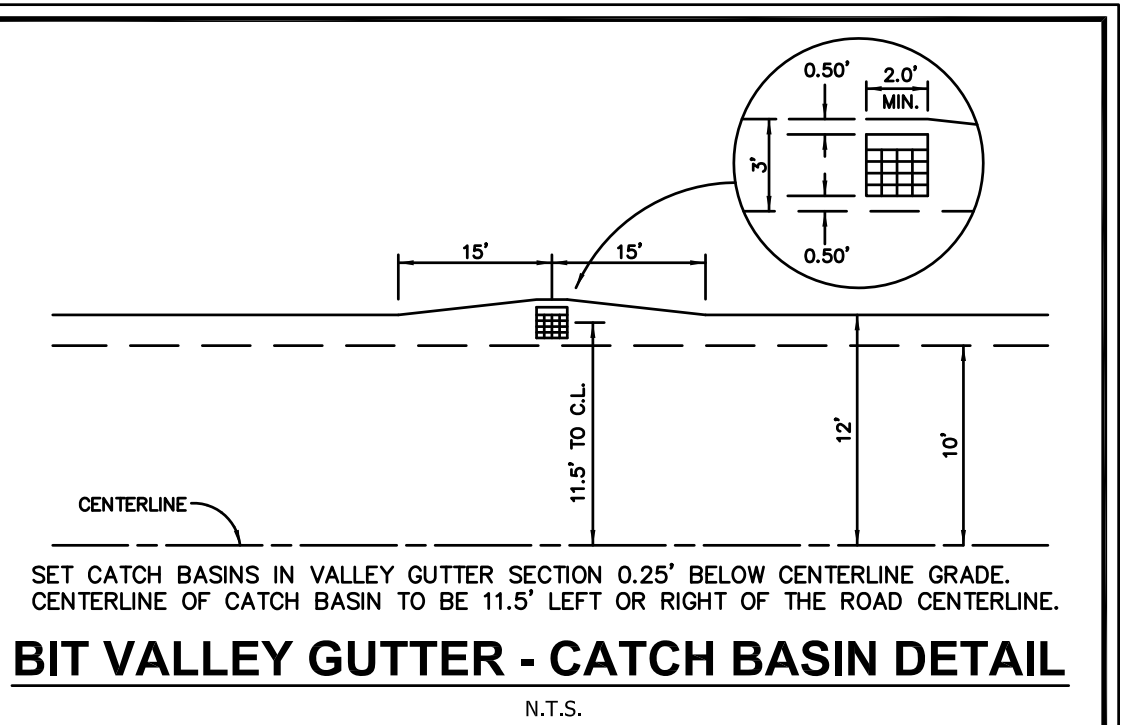
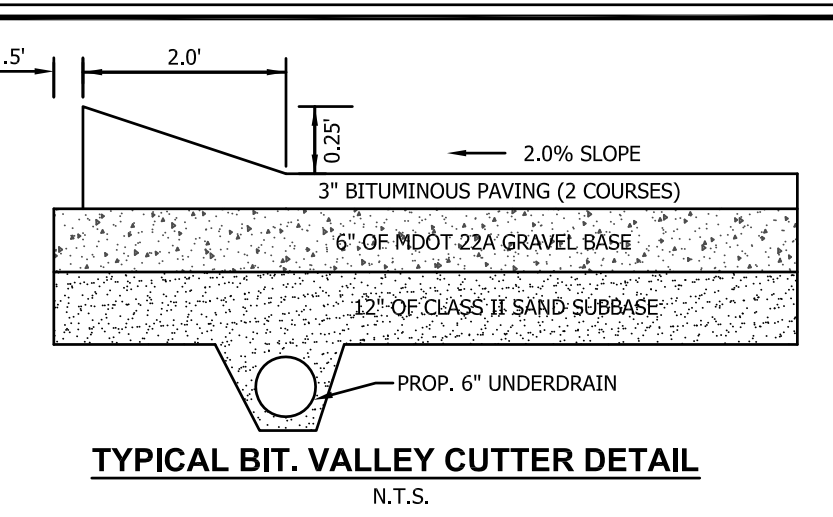
**DOUGLAS PROPERTY
DEVELOPMENT, LLC**
Attention:
Kevin Einfeld
5510 Cascade Road SE, Suite 21
Grand Rapids, Michigan 49506
Phone (616) 458-8505

checked	date	no.	comment	date	drawn by	date	checked by
RJB	03/14/13	1	CONSTRUCTION PLAN SUBMITTAL	03/14/13			
RJB	03/22/13	2	ALLEGAN COUNTY SUBC. AGENT	03/22/13			
RJB	05/07/13	3	CITY ENGINEER	03/27/13			
RJB	07/12/13	4	FOR CONSTRUCTION				
		5					
		6					
		7					
		8					

project no.:
13200132
C-402
sheet no.:
5 OF 6
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NOTES

1. TOPSOIL STRIPPING, PIPE EXCAVATION, PIPE BACKFILL & TOPSOIL REPLACEMENT ARE INCIDENTAL TO THE WORK.
2. ALL DISTURBED AREAS SHALL BE RESTORED WITH 4" MINIMUM AND 12" MAXIMUM TOPSOIL AND SEED/FERTILIZER/MULCH MIXTURE.
3. REMOVAL AND REPLACEMENT OF DRIVEWAY STM SEWER CULVERTS, STREET SIGNS, MAILBOXES, LAWN SPRINKLERS, FENCES, SHRUBS OR SIMILAR ITEMS ARE INCIDENTAL TO THE WORK.
4. CONTRACTOR SHALL VERIFY THAT ALL NECESSARY PERMITS AND EASEMENTS HAVE BEEN OBTAINED PRIOR TO ANY CONSTRUCTION.
5. CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE PROPER PERMIT TO WORK IN FERRY ST., GOLFVIEW DR. & CENTER ST. RIGHT-OF-WAY INCIDENTAL TO CONTRACT.
6. ALL STORM SEWER PIPE TO BE INSTALLED ON STEEP SLOPES AT GREATER THAN 12% PIPE SLOPE SHALL BE PROVIDED WITH ANCHORS AND RESTRAINED JOINTS TO PREVENT JOINT SEPARATION & PIPE MIGRATION IN ACCORDANCE WITH PIPE MANUFACTURER RECOMMENDATION. AS AN ALTERNATIVE, THE PIPE CAN BE SOLID WALL CONTINUOUS PIPE DIRECTIONALLY BORED TO THE BOTTOM OF THE BANK.



811 Know what's below. Call before you dig.

UTILITY LOCATIONS ARE DERIVED FROM ACTUAL MEASUREMENTS OR AVAILABLE RECORDS. THEY SHOULD NOT BE INTERPRETED TO BE EXACT LOCATIONS NOR SHOULD IT BE ASSUMED THAT THEY ARE THE ONLY UTILITIES IN THIS AREA.

NOTE: EXISTING UTILITIES AND SERVICE LINES IDENTIFIED AS "PLANS" WERE OBTAINED FROM AVAILABLE CITY AGILITY RECORD DRAWINGS. THE CONTRACTOR SHALL VERIFY THE LOCATION, DEPTH AND STATUS OF ALL UTILITIES AND SERVICE LINES PRIOR TO NEW CONNECTIONS.

- GENERAL NOTES:**
1. CONSTRUCTION OF SANITARY SEWER, WATERMAIN, STORM SEWER AND SIDEWALK IMPROVEMENTS SHALL BE IN ACCORDANCE WITH THE CURRENT VILLAGE OF DOUGLAS & KLSWA STANDARD CONSTRUCTION REQUIREMENTS.
 2. PROVIDE SIEVE ANALYSIS ON EXISTING SOILS TO DETERMINE IF THEY MEET CLASS II SPECIFICATIONS FOR BACKFILL.
 3. INSTALLATION OF S.L.C.P.; STORM SEWER MUST COMPLY WITH "M.D.O.T." SPECIFICATIONS (INCLUDING MIN. COVER AND 30' DAY MANDRILL, ETC.).
 4. ROADWAY & UTILITY TRENCH BACKFILL MATERIAL SHALL MEET MDOOT CLASS II SPECIFICATIONS.
- WATERMAIN CONSTRUCTION**
1. COORDINATE TAP OF THE EXISTING WATERMAIN WITH KLSWA & VILLAGE OF DOUGLAS WATER AND SEWER DEPARTMENT.
 2. HYDRANT WEEP HOLES SHALL BE OPEN UNLESS CONSTRUCTED BELOW WATER TABLE. MEGA LUGS OR RODDING IS REQUIRED FOR REACTION BACKING.
 3. WATER SERVICES SHALL BE MARKED WITH A SECTION OF PVC PIPE AT THE CURB STOP & BOX (EXTENDING 3' ABOVE GROUND AT A MIN.).
 4. WATER SERVICE FITTINGS SHALL BE COMPRESSION FITTINGS. CONTRACTORS SHALL PROVIDE ELECTRICAL CONTINUITY ON FITTINGS.
 5. TESTING SHALL CONFORM TO KLSWA STANDARDS.
 6. ALL CURB STOPS SHALL BE FURNISHED WITH STATIONARY RODS.
 7. ALL WATERMAIN IS TO BE DUCTILE IRON PIPE CLASS 52.
- SANITARY SEWER CONSTRUCTION**
1. SANITARY SEWER PIPE SHALL BE ASTM 3034, SDR 35 PVC OR SDR 26 PVC AS NOTED ON THE PLANS.
 2. SANITARY SEWER CASTINGS SHALL BE SIMILAR TO E.I.L.W. 1120
 3. SANITARY SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF THE KLSWA, (INCL. TESTING)
 4. TEMP. PLUG TO BE PLACED IN EX. SEWER UNTIL NEW SEWER IS ACCEPTED BY KLSWA.
 5. MANHOLES SHALL BE PRECAST, BOOT TYPE WITH OUTER BITUMINOUS COATING.
 6. THE END OF SEWER LATERALS SHALL BE MARKED WITH A 2"x2" WOOD STAKE AND A STEEL ROD, COVERED WITH A SECTION OF PVC PIPE EXTENDING 3' ABOVE GRADE.
 7. A 6" PROPERTY LINE RISER SHALL BE PLACED AT THE END OF EACH LATERAL.

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WESTSHORE PHASE 1B
PART OF SECTION 17, T3N, R16W
CITY OF DOUGLAS, ALLEGAN COUNTY, MICHIGAN

Details & Specifications

DOUGLAS PROPERTY DEVELOPMENT, LLC
Attention: Kevin Einfeld
5510 Cascade Road SE, Suite 21
Grand Rapids, Michigan 49546
Phone (616) 458-8505

date	comment	no.	checked	date	drawn by	date	date
03/14/13	CONSTRUCTION PLAN SUBMITTAL	1	RJB	03/14/13	1	03/14/13	03/14/13
03/22/13	ALLEGAN COUNTY SUB-AGENT	2	RJB	03/22/13	2	03/22/13	03/22/13
03/27/13	CITY ENGINEER	3	RJB	03/27/13	3	03/27/13	03/27/13
07/12/13	FOR CONSTRUCTION	4	RJB	07/12/13	4	07/12/13	07/12/13
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project no.: 13200132

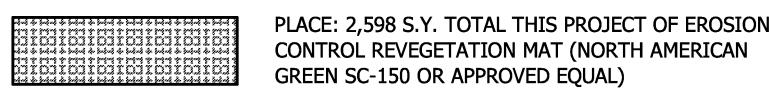
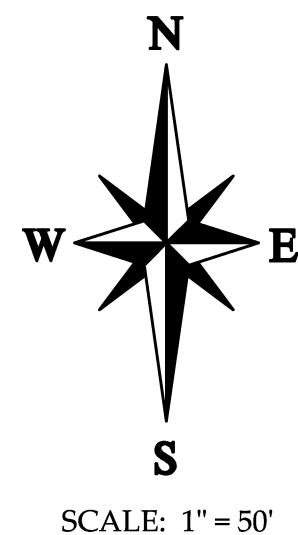
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sheet no.: 6 OF 6

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BENCHMARK #2212: ELEV.= 627.02 (NGVD29)
RAILROAD SPIKE IN WEST SIDE OF UTILITY POLE LOCATED 9' EAST OF THE
EAST EDGE OF PAVEMENT FOR FERRY STREET & 630' NORTH OF THE EAST 1/4
CORNER OF SECTION 17.

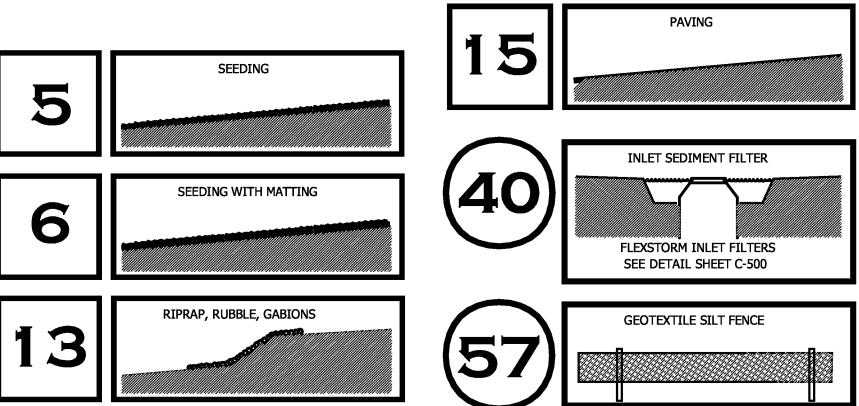
	PROP. GRADE CONTOUR
	PROP. GRADE ELEV. (BLACKTOP)
	PROP. GRADE ELEV. (GUTTER)
	PROP. GRADE ELEV. (HIGH POINT)
	EX. BITUMINOUS
	PROP. BITUMINOUS
	PROP. STORM SEWER
	PROP. UNDERDRAIN
	PROP. SANITARY SEWER
	PROP. WATERMAIN
	PROP. LIMITS OF GRADING
	PROP. SILT FENCE
	WETLAND BOUNDARY FLAGS
	WETLAND AREA
	MONITORING WELL
	EXIST. TREELINE
	SOIL EROSION CONTROL MATTING
	SOIL BORING LOCATION



NOTE:
SEDIMENT BASIN #1 TO BE BUILT & STABILIZED FIRST
BEFORE ANY OTHER CONSTRUCTION WORK. STORM
DISCHARGE TO THE SEDIMENT BASIN SHOULD NOT
OCCUR UNTIL THE BASIN IS FULLY STABILIZED.

ALL WORK WITHIN REGULATED WETLANDS
SHALL BE COMPLETED IN ACCORDANCE WITH
MDEQ PERMIT # _____ ISSUED _____

NOTE: ALL FILL AREAS, INCLUDING UTILITY TRENCHES, BUILDING ENVELOPES AND STREETS ARE TO BE COMPACTED IN 12" LOOSE LIFTS (CLAY AREAS: 4"- 6" LIFTS) TO 95% MAX. DRY DENSITY AS DETERMINED BY MICHIGAN CONE OR MODIFIED PROCTOR (ASTM D-1557) TESTING.



SOIL EROSION AND SEDIMENTATION CONTROL NOTES:

- 1) CONTRACTOR SHALL POSSESS THE SOIL EROSION AND SEDIMENTATION CONTROL PERMITS AND A PLAN OF EROSION CONTROL MEASURES.
- 2) CONTRACTOR SHALL MOODY THIS SOIL EROSION AND SEDIMENTATION CONTROL PLAN TO SHOW THE LOCATION OF THE EROSION CONTROL MEASURES TO BE USED DURING CONSTRUCTION. SUBMIT MODIFICATIONS TO THE CONTROLLING AGENCY, THE COUNTY ENGINEER, AND THE TOWNSHIP ENGINEER.
- 3) EROSION PROTECTION SHALL BE PROVIDED AT ALL STORM SEWER INLETS AND OUTLETS. ALL EROSION CONTROL SHALL BE STABILIZED WITH SEED.
- 4) LOCATION AND TYPE OF EROSION CONTROL MEASURES ARE IDENTIFIED ON THE SKETCH BY THE TOWNSHIP ENGINEER.
- 5) THE MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY UNIFORM KEYING SYSTEM AND BEST MANAGEMENT PRACTICES.
- 6) DENOTES TREATMENT PRACTICES
- 7) DENOTES PERMANENT PRACTICES
- 8) A 150 FOOT LONG, 6 INCH DEEP CRUSHED CONCRETE ENTRANCE SHALL BE INSTALLED WHERE EARTH MOVERS WILL BE ENTERING THE SITE. ALL DIRT, CLAY ROCK, AND OTHER SOIL SHALL BE CLEARED FROM THE ROAD.
- 9) ALL DIRT STOCKPILES SHALL HAVE SILT FENCE AROUND THEM.
- 10) ALL INLET FILTERS AND SILT FENCE SHALL BE INSPECTED WEEKLY AND AFTER STORM EVENTS TO ENSURE THOSE CONTROLS ARE WORKING OPTIMALLY.
- 11) VEGETATIVE FILTER STRIPS SHALL BE PLACED ON ALL AREAS OF THE DEVELOPMENT WHERE SLOPES EXCEED 1% BUT ARE LESS THAN 2%.
- 12) IN WIDTH, WOVEN MESH BLANKETS SHALL BE PLACED OVER SLOPES GREATER THAN 2%.
- 13) UNTIL VISIBLE VEGETATIVE GROWTH HAS BEEN ESTABLISHED, SLOPES GREATER THAN 2% SHALL BE PROTECTED BY ANY OTHER CONVEYABLE CONTROL TO CARRY WATER AWAY FROM THESE AREAS UNTIL VEGETATIVE GROWTH OCCURS.

CONSTRUCTION STAKING AND LAYOUT
SHALL BE PERFORMED BY NEDERVELD, INC.



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NOTE:
EXISTING UTILITIES AND SERVICE LINES IDENTIFIED AS "(PLAN)" WERE
OBTAINED FROM AVAILABLE CITY AS-BUILT RECORD DRAWINGS. THE
CONTRACTOR SHALL VERIFY THE LOCATION, DEPTH AND STATUS OF ALL
UTILITIES AND SERVICE LINES PRIOR TO NEW CONNECTIONS.



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Holland, MI 49423
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INDIANAPOLIS

59 Castlewood Dr., Su
Indianapolis, IN 4625
PHONE: 317 388 3762

Soil Erosion/Sedimentation
Control and Grading Plan
of
Golfview Drive (Private)

WESTSHORE PHASE 1B

PART OF OF SECTION 17, T3N, R16W,
CITY OF DOUGLAS. ALLEGAN COUNTY. MICHIGAN

DOUGLAS PROPERTY

Attention:
Kevin Finfield

Cascade Road SE, Suite 21
and Rapids, Michigan 49546

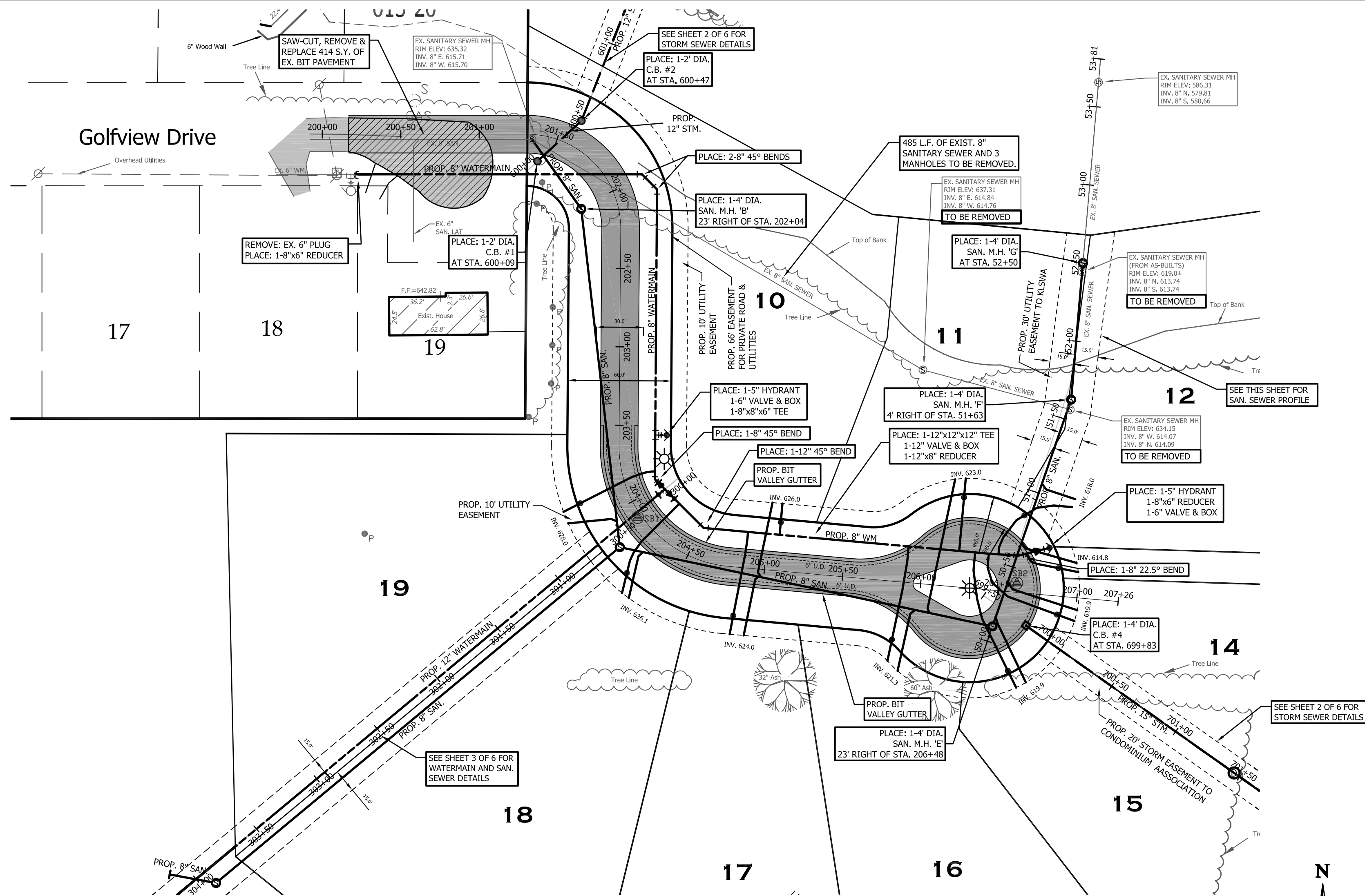
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	R/B	03/22/13	2	ALLEGAN COUNTY SESC AGENT
	R/B	08/07/13	3	CITY ENGINEER
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project no.:
13200132

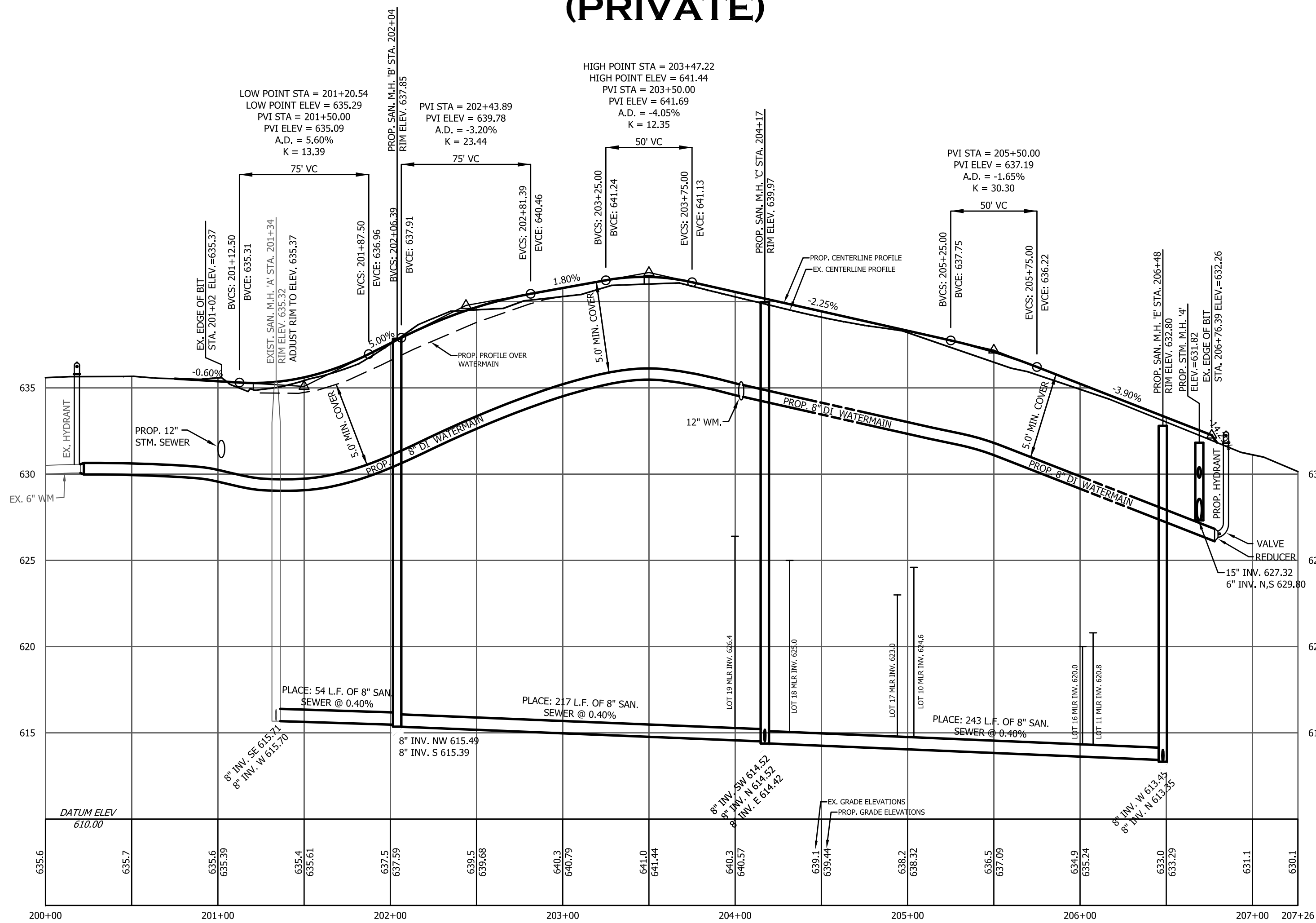
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sheet no.:
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GOLF VIEW DRIVE (PRIVATE)

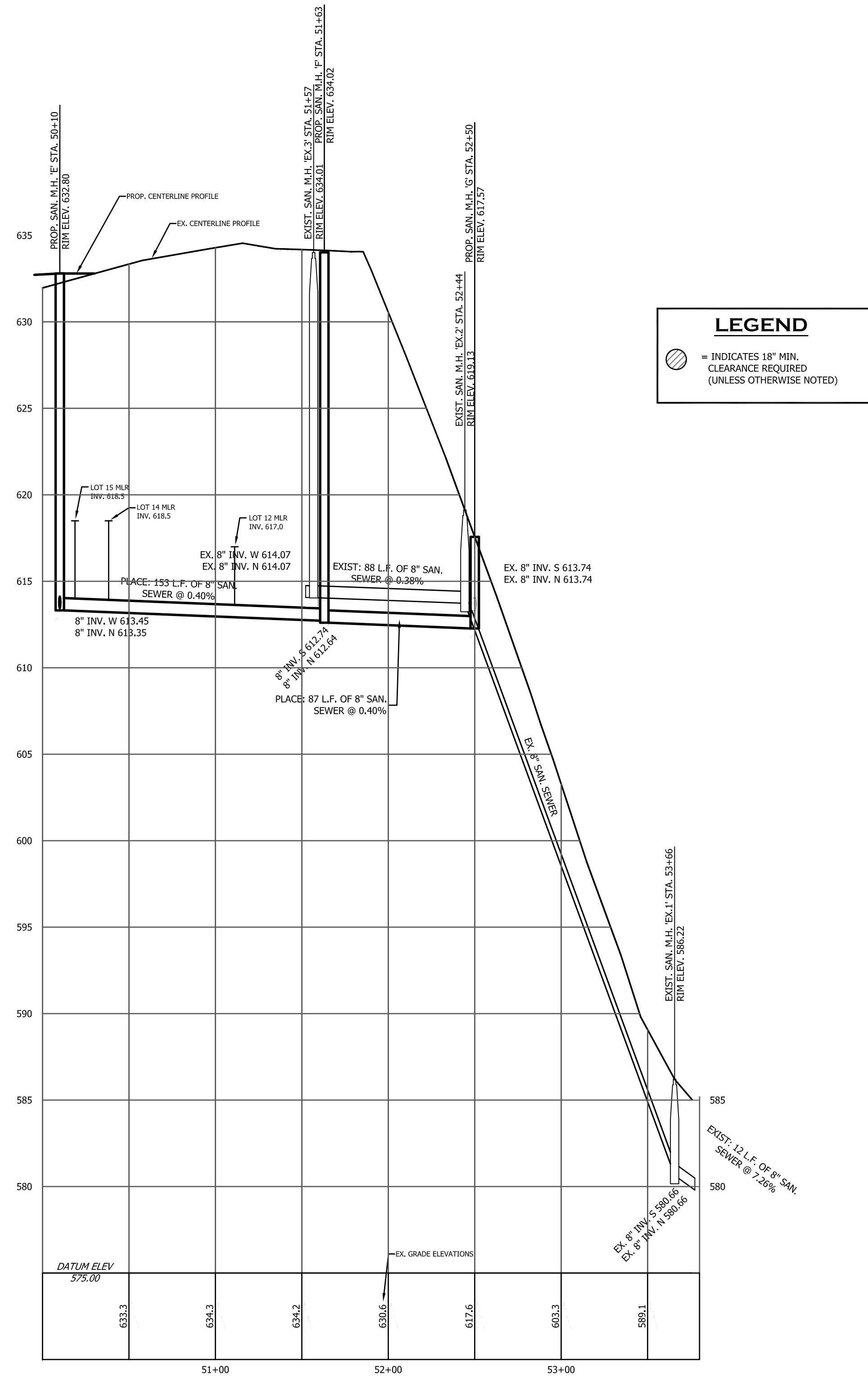


SB-1
Surface Elevation ~ 640
0.0' - 0.1' Topsoil - dark brown fine sand (12.0')
1.0' - 10.0' Sand - compact light brown fine (dry)
10.0' - 10.3' Clay - stiff brown silty
10.3' - 13.5' Clay - stiff gray silty
13.5' - 14.5' Silt - compact brown sandy (wet)
14.5' - 15.0' Clay - stiff gray silty
15.0' End of Boring (Elevation ~ 625)
Groundwater encountered 10.0 ft.

SB-2
Surface Elevation ~ 633
0.0' - 0.1' Topsoil - dark brown fine sand (12.0')
1.0' - 9.5' Sand - compact light brown (wet below 4.0 feet)
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10.0' - 11.0' Clay - stiff gray silty
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14.0' - 15.0' Silt - stiff gray clayey (wet)
15.0' End of Boring (Elevation ~ 618)
Groundwater encountered 4.5 ft.

SB-4
Surface Elevation ~ 624
0.0' - 1.0' Topsoil - dark brown fine sand (12.0')
1.0' - 2.2' Sand - compact light brown fine with a trace of clay (wet)
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9.5' - 14.0' Sand - compact light brown fine with silt and clay seams (wet)
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Groundwater encountered 1.5 ft.

PROPOSED SANITARY PROFILE



LEGEND
= INDICATES 18" MIN. CLEARANCE REQUIRED (UNLESS OTHERWISE NOTED)

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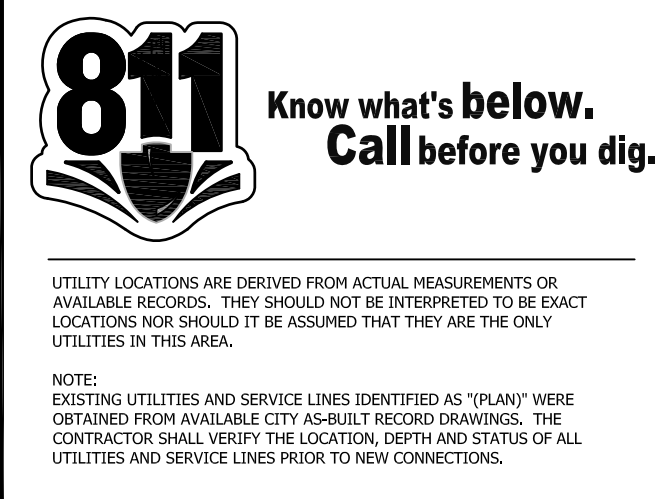
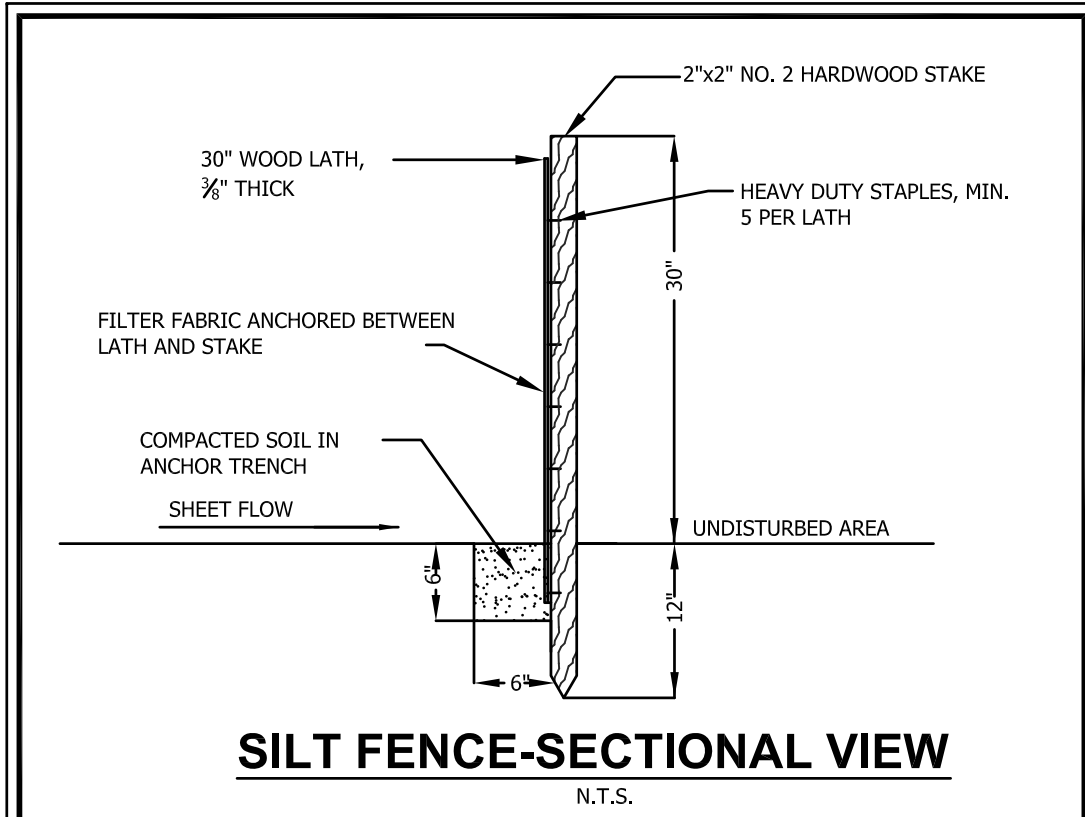
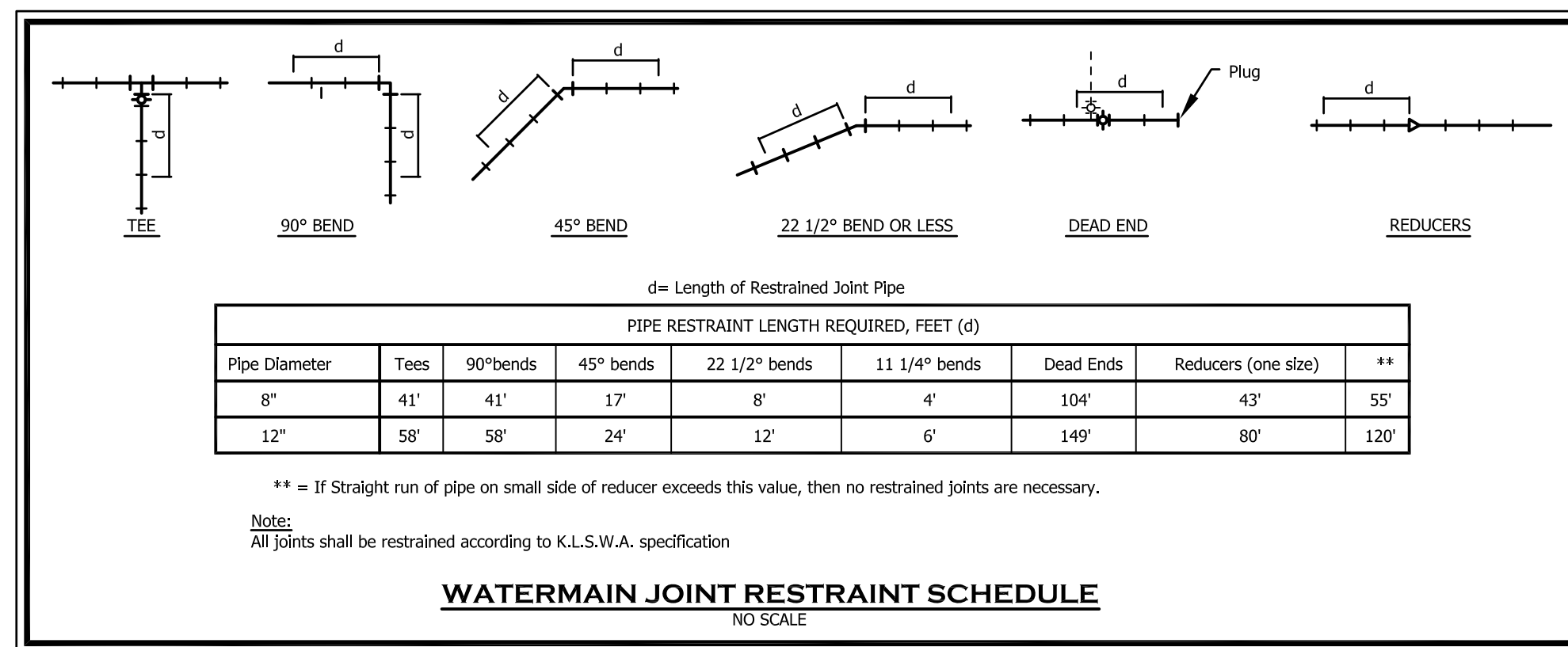
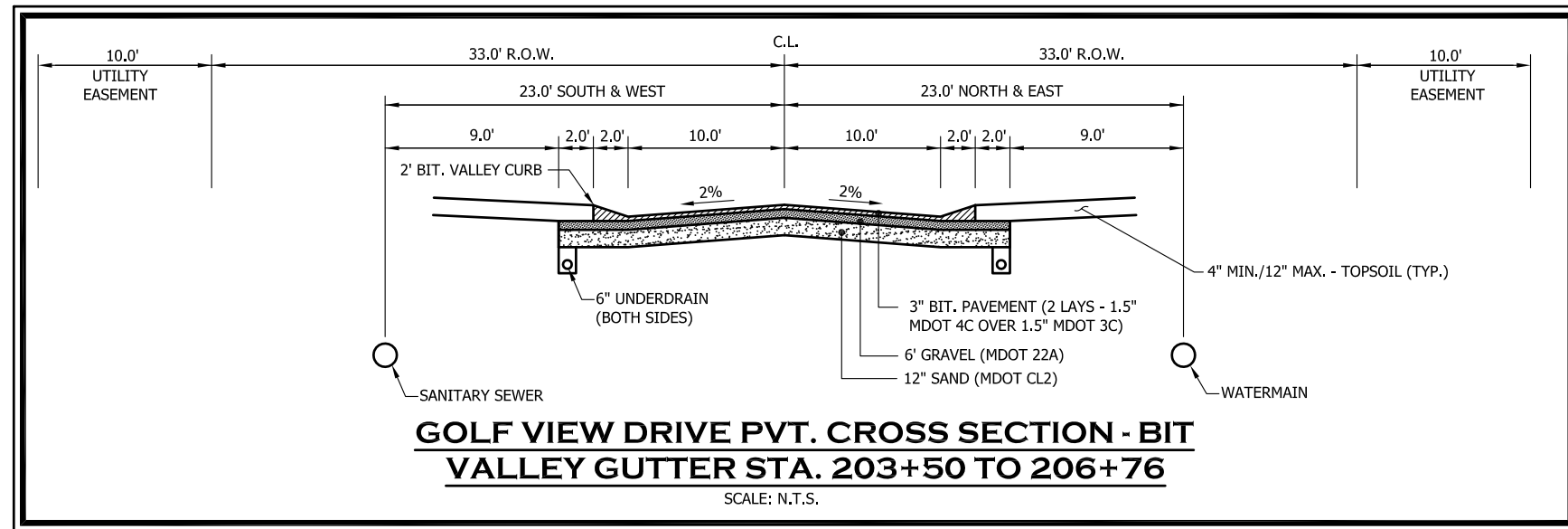
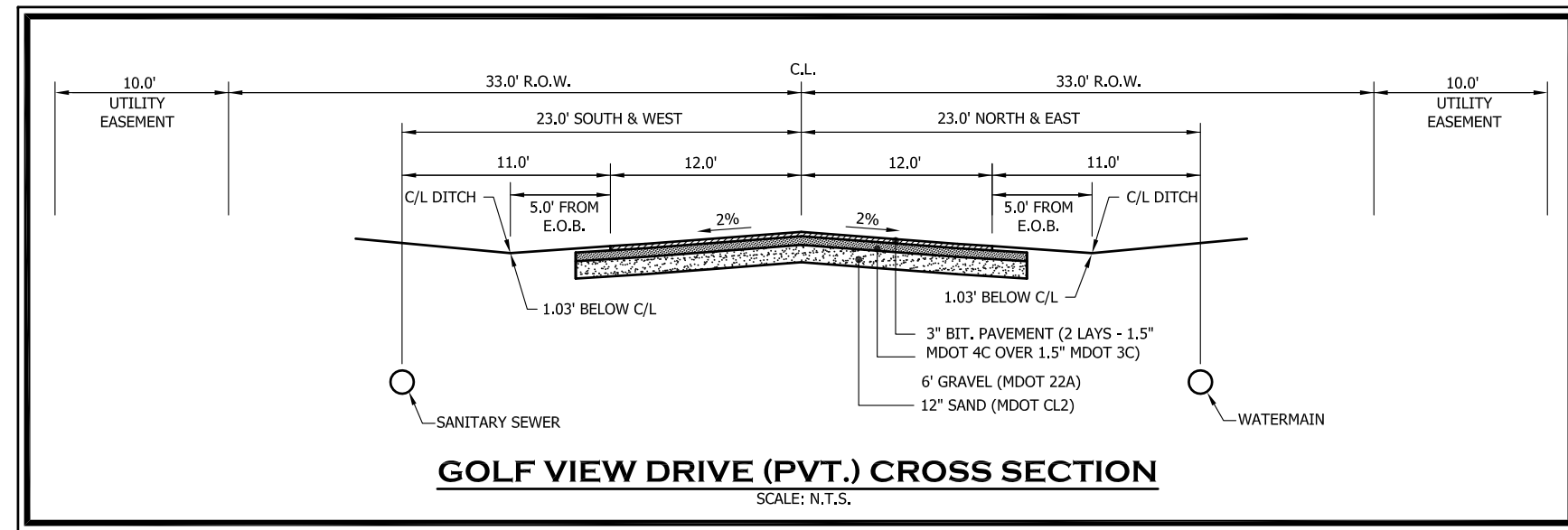
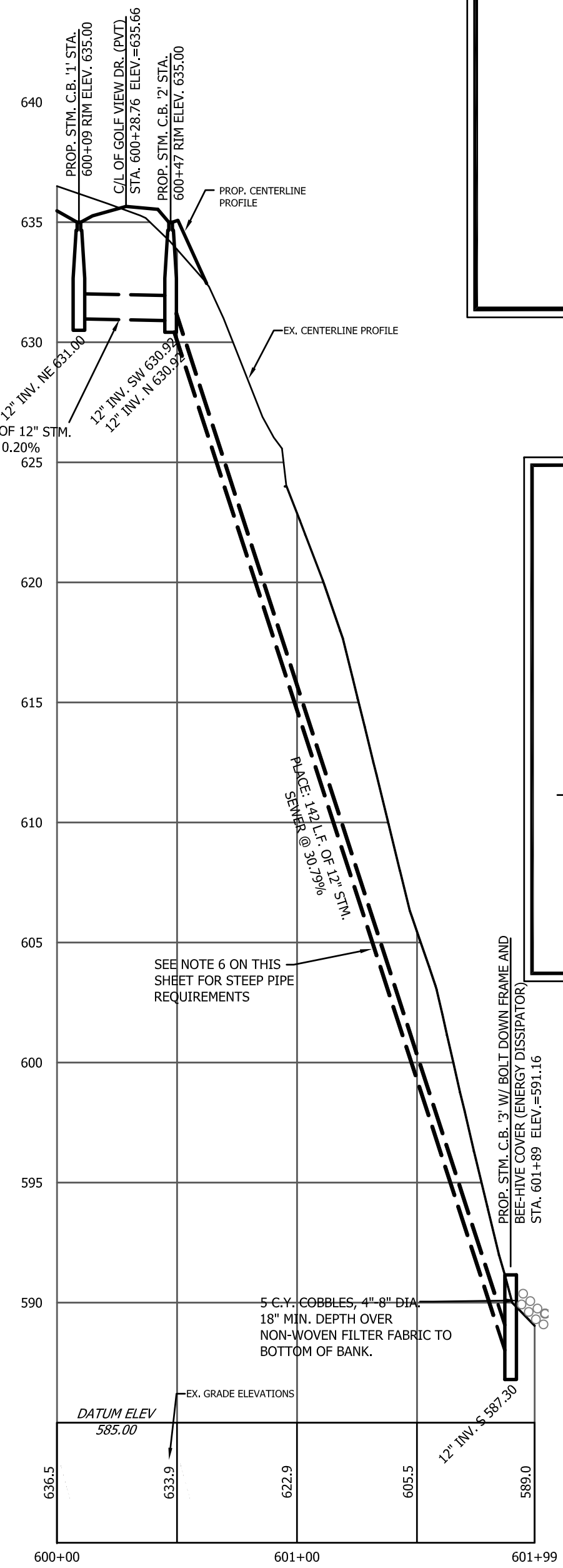
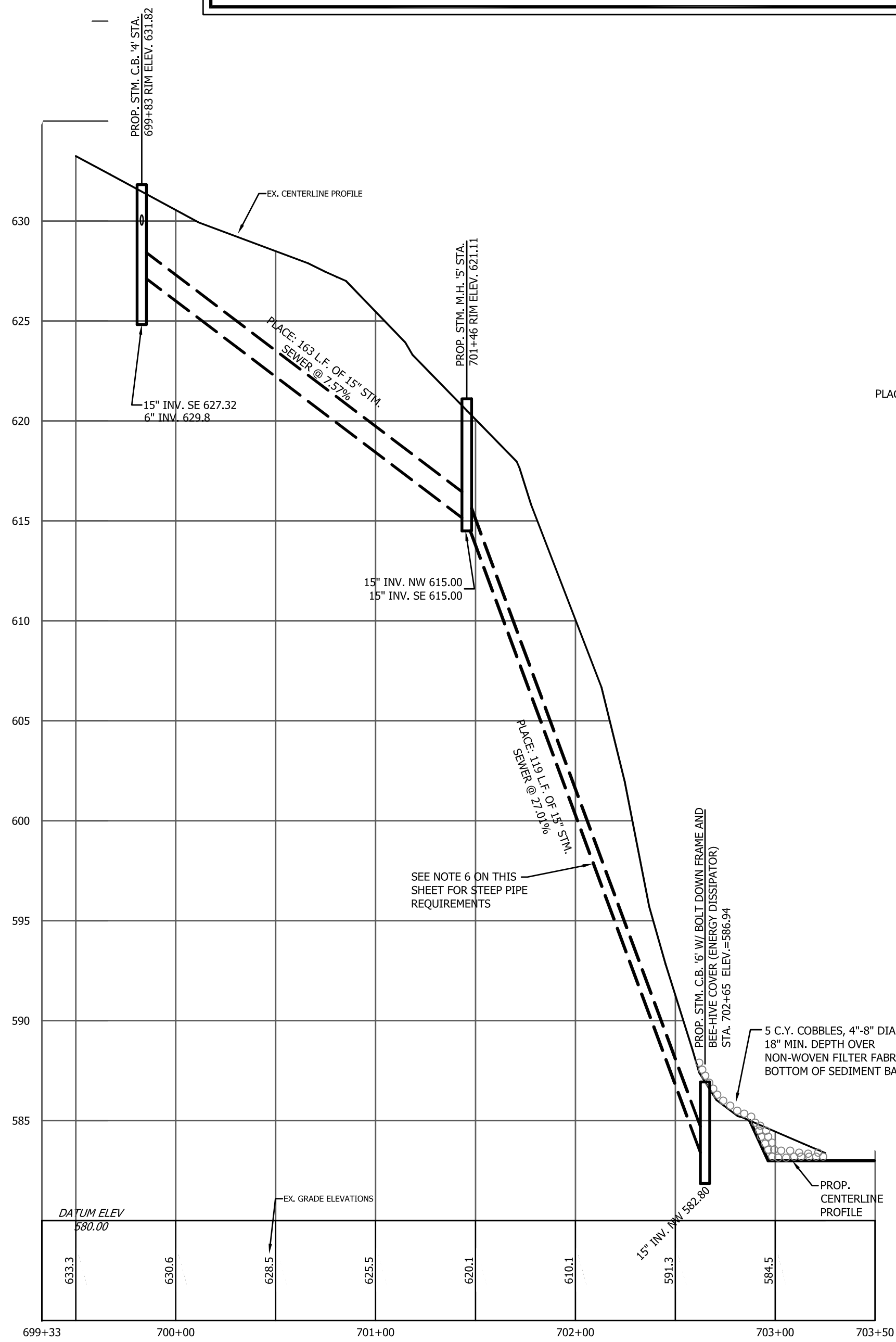
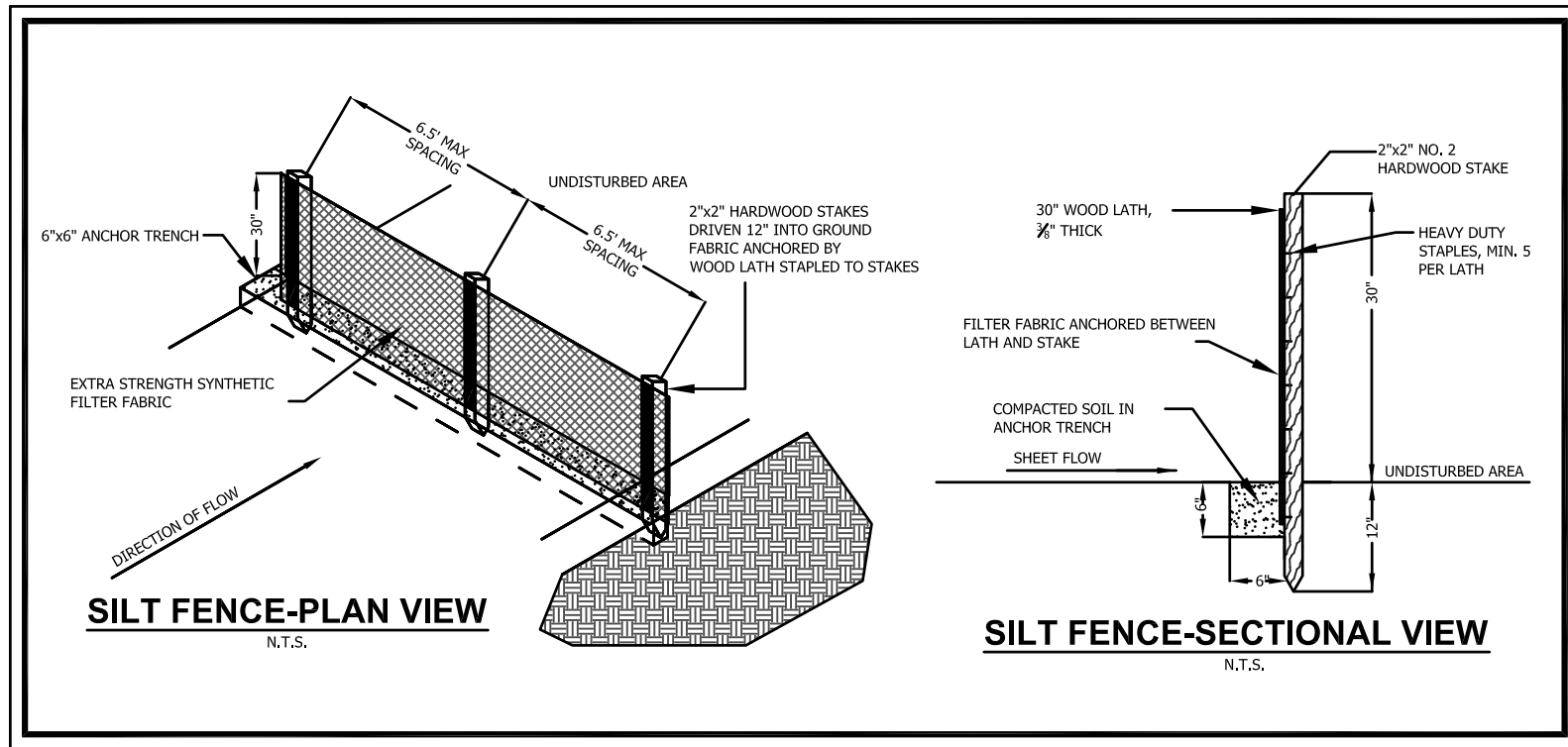
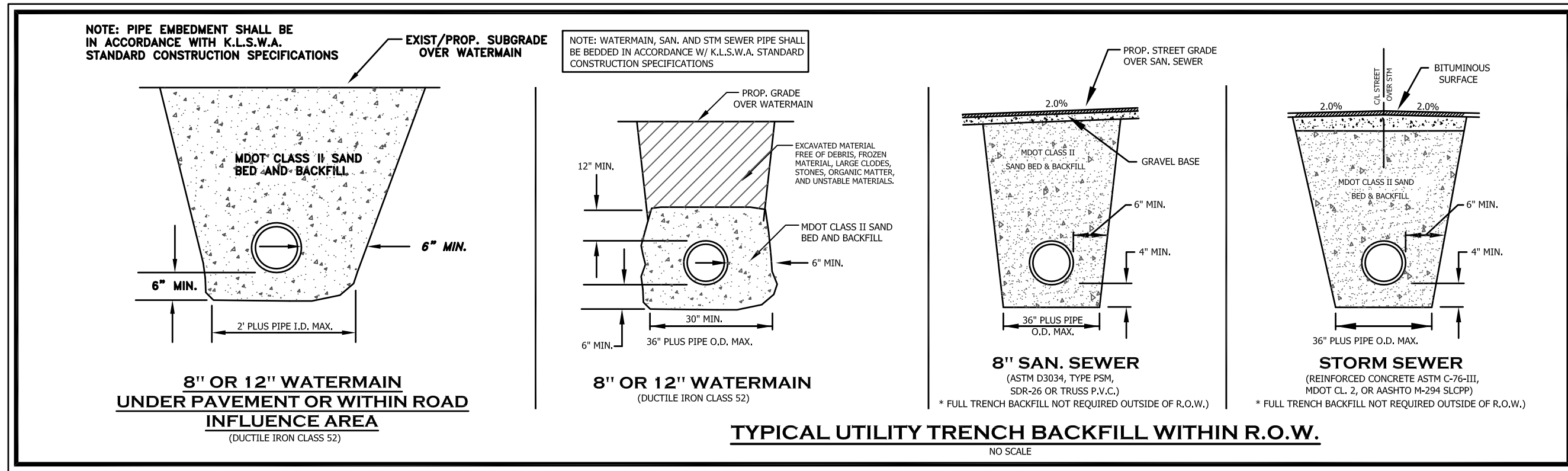
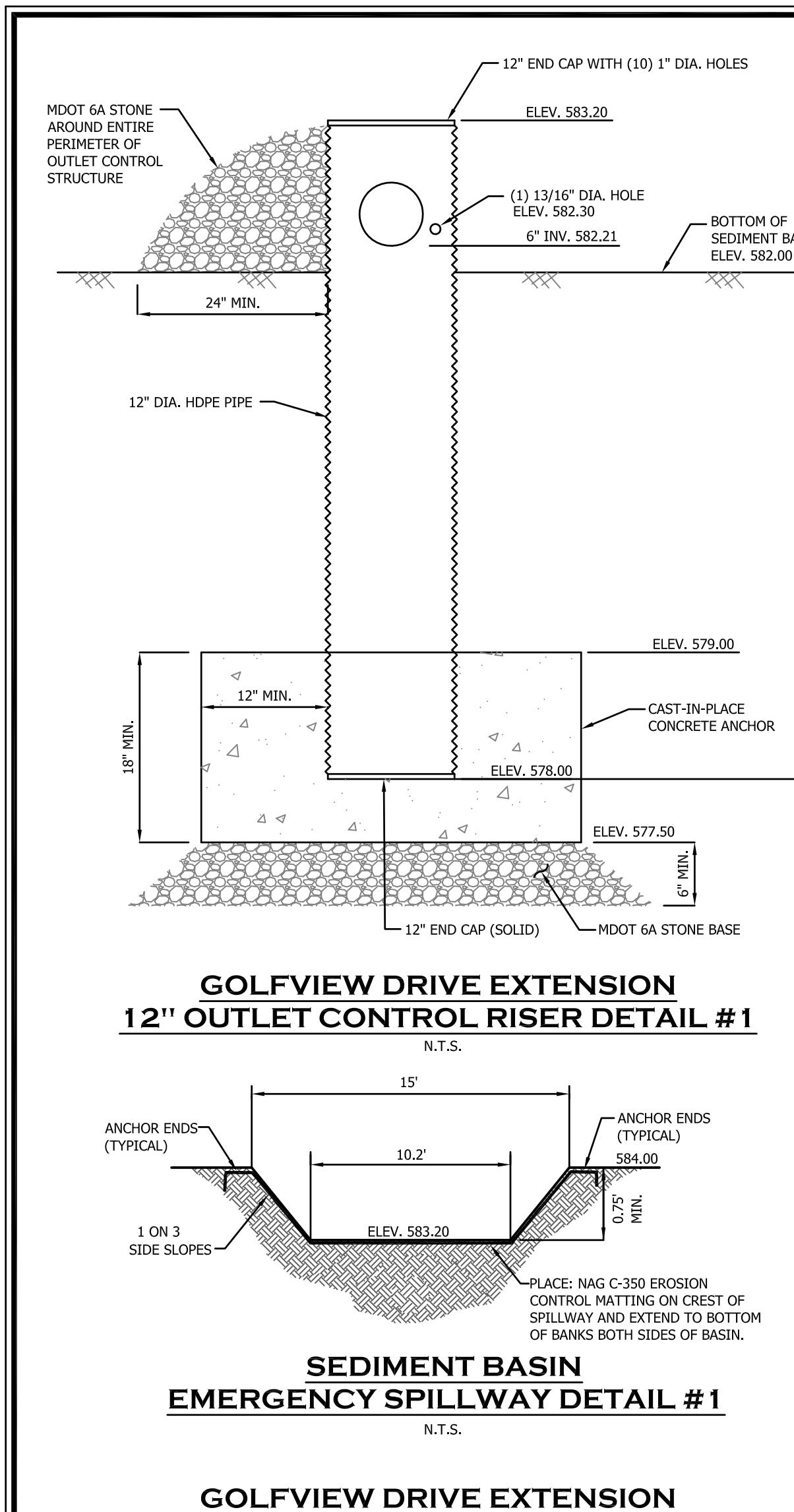
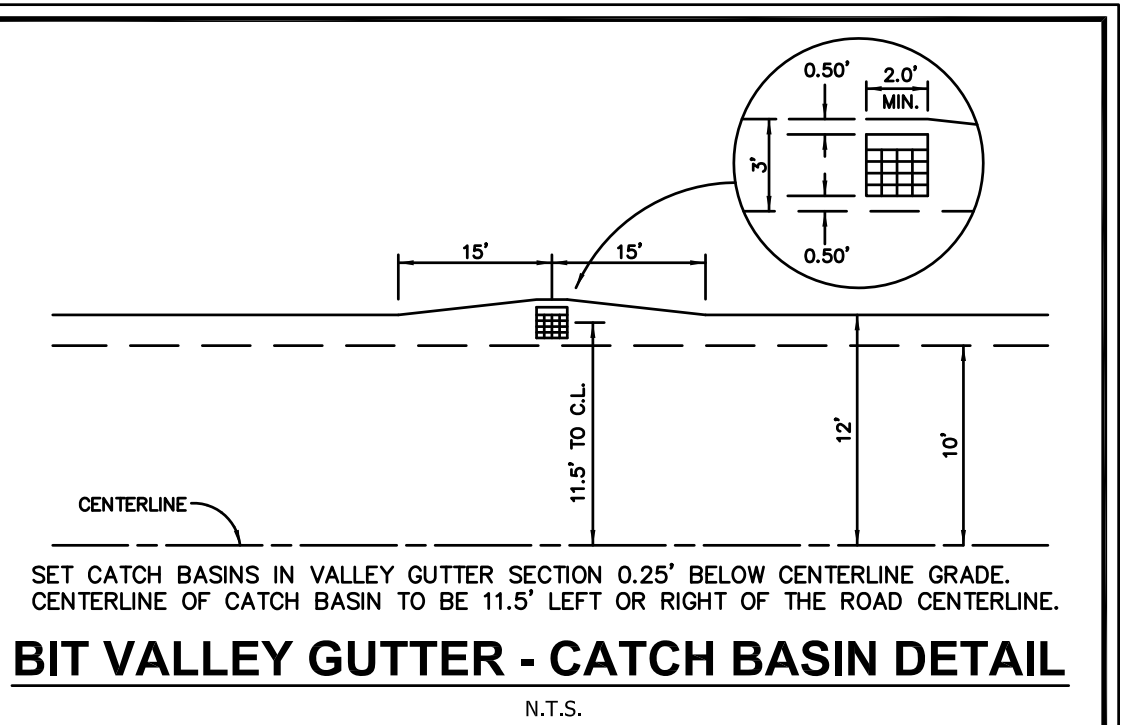
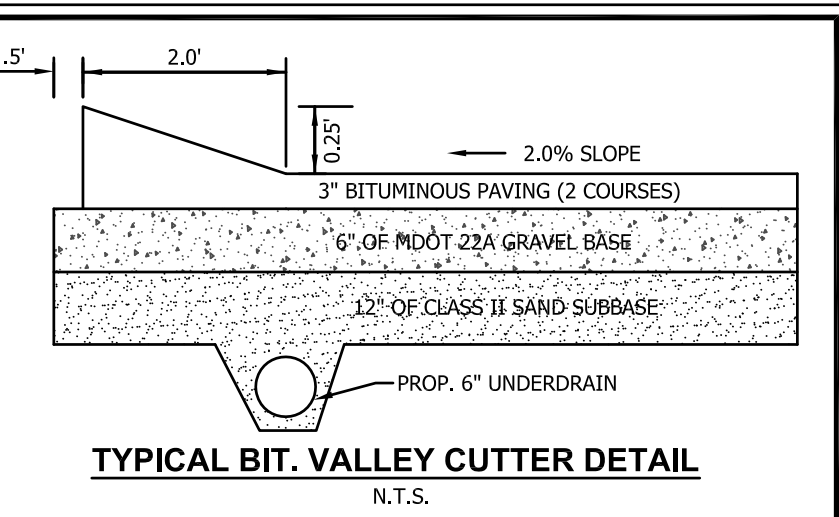
**DOUGLAS PROPERTY
DEVELOPMENT, LLC**
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Grand Rapids, Michigan 49506
Phone (616) 458-8505

date	comment	no.	date	date	date
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05/07/13	CITY ENGINEER	3	05/07/13	05/07/13	05/07/13
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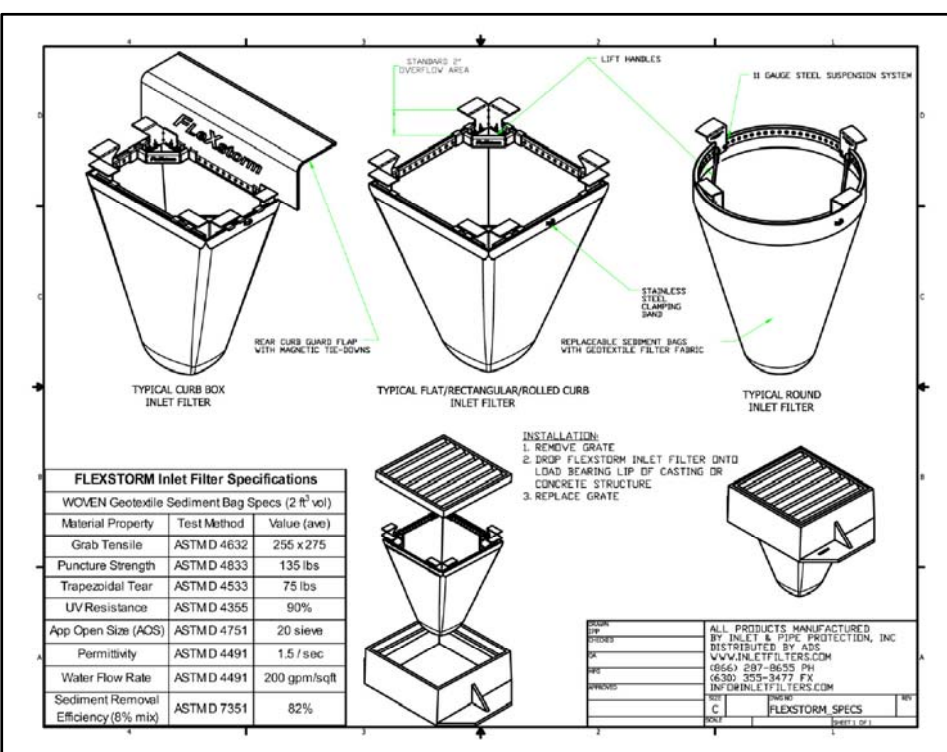
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13200132
C-402
sheet no.:
5 OF 6
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2. ALL DISTURBED AREAS SHALL BE RESTORED WITH 4" MINIMUM AND 12" MAXIMUM TOPSOIL AND SEED/FERTILIZER/MULCH MIXTURE.
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4. CONTRACTOR SHALL VERIFY THAT ALL NECESSARY PERMITS AND EASEMENTS HAVE BEEN OBTAINED PRIOR TO ANY CONSTRUCTION.
5. CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE PROPER PERMIT TO WORK IN FERRY ST., GOLFVIEW DR. & CENTER ST. RIGHT-OF-WAY INCIDENTAL TO CONTRACT.
6. ALL STORM SEWER PIPE TO BE INSTALLED ON STEEP SLOPES AT GREATER THAN 12% PIPE SLOPE SHALL BE PROVIDED WITH ANCHORS AND RESTRAINED JOINTS TO PREVENT JOINT SEPARATION & PIPE MIGRATION IN ACCORDANCE WITH PIPE MANUFACTURER RECOMMENDATION. AS AN ALTERNATIVE, THE PIPE CAN BE SOLID WALL CONTINUOUS PIPE DIRECTIONALLY BORED TO THE BOTTOM OF THE BANK.



- GENERAL NOTES:**
1. CONSTRUCTION OF SANITARY SEWER, WATERMAIN, STORM SEWER AND SIDEWALK IMPROVEMENTS SHALL BE IN ACCORDANCE WITH THE CURRENT VILLAGE OF DOUGLAS & KLSWA STANDARD CONSTRUCTION REQUIREMENTS.
 2. PROVIDE SIEVE ANALYSIS ON EXISTING SOILS TO DETERMINE IF THEY MEET CLASS II SPECIFICATIONS FOR BACKFILL.
 3. INSTALLATION OF S.L.C.P.; STORM SEWER MUST COMPLY WITH "M.D.O.T." SPECIFICATIONS (INCLUDING MIN. COVER AND 30' DAY MANDRILL, ETC.).
 4. ROADWAY & UTILITY TRENCH BACKFILL MATERIAL SHALL MEET MDOOT CLASS II SPECIFICATIONS.
- WATERMAIN CONSTRUCTION**
1. COORDINATE TAP OF THE EXISTING WATERMAIN WITH KLSWA & VILLAGE OF DOUGLAS WATER AND SEWER DEPARTMENT.
 2. HYDRANT WEEP HOLES SHALL BE OPEN UNLESS CONSTRUCTED BELOW WATER TABLE. MEGA LUGS OR RODDING IS REQUIRED FOR REACTION BACKING.
 3. WATER SERVICES SHALL BE MARKED WITH A SECTION OF PVC PIPE AT THE CURB STOP & BOX (EXTENDING 3' ABOVE GROUND AT A MIN.).
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 5. TESTING SHALL CONFORM TO KLSWA STANDARDS.
 6. ALL CURB STOPS SHALL BE FURNISHED WITH STATIONARY RODS.
 7. ALL WATERMAIN IS TO BE DUCTILE IRON PIPE CLASS 52.
- SANITARY SEWER CONSTRUCTION**
1. SANITARY SEWER PIPE SHALL BE ASTM 3034, SDR 35 PVC OR SDR 26 PVC AS NOTED ON THE PLANS.
 2. SANITARY SEWER CASTINGS SHALL BE SIMILAR TO E.I.L.W. 1120
 3. SANITARY SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF THE KLSWA, (INCL. TESTING)
 4. TEMP. PLUG TO BE PLACED IN EX. SEWER UNTIL NEW SEWER IS ACCEPTED BY KLSWA.
 5. MANHOLES SHALL BE PRECAST, BOOT TYPE WITH OUTER BITUMINOUS COATING.
 6. THE END OF SEWER LATERALS SHALL BE MARKED WITH A 2"x2" WOOD STAKE AND A STEEL REOD, COVERED WITH A SECTION OF PVC PIPE EXTENDING 3' ABOVE GRADE.
 7. A 6" PROPERTY LINE RISER SHALL BE PLACED AT THE END OF EACH LATERAL.



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WESTSHORE PHASE 1B
PART OF SECTION 17, T3N, R16W,
CITY OF DOUGLAS, ALLEGAN COUNTY, MICHIGAN

Details & Specifications

DOUGLAS PROPERTY DEVELOPMENT, LLC
Attention: Kevin Einfeld
5510 Cascade Road SE, Suite 21
Grand Rapids, Michigan 49546
Phone (616) 458-8505

date	comment	no.	checked	date	drawn by	date	date
03/14/13	CONSTRUCTION PLAN SUBMITTAL	1	RJB	03/14/13	CONSTRUCTION PLAN SUBMITTAL	1	RJB
03/22/13	ALLEGAN COUNTY SUB-AGENT	2	RJB	03/22/13	ALLEGAN COUNTY SUB-AGENT	2	RJB
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07/12/13	FOR CONSTRUCTION	4	RJB	07/12/13	FOR CONSTRUCTION	4	RJB
		5				5	
		6				6	
		7				7	
		8				8	

project no.: 13200132

C-500

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BENCHMARK #13: ELEV.= 611.17 (NGVD29)
SET RAILROAD SPIKE IN NORTH SIDE OF UTILITY POLE LOCATED 6' SOUTH OF THE SOUTH EDGE OF PAVEMENT FOR CENTER STREET & 7' WEST OF THE EAST LINE OF THE EXISTING BUILDING TO THE NORTH.

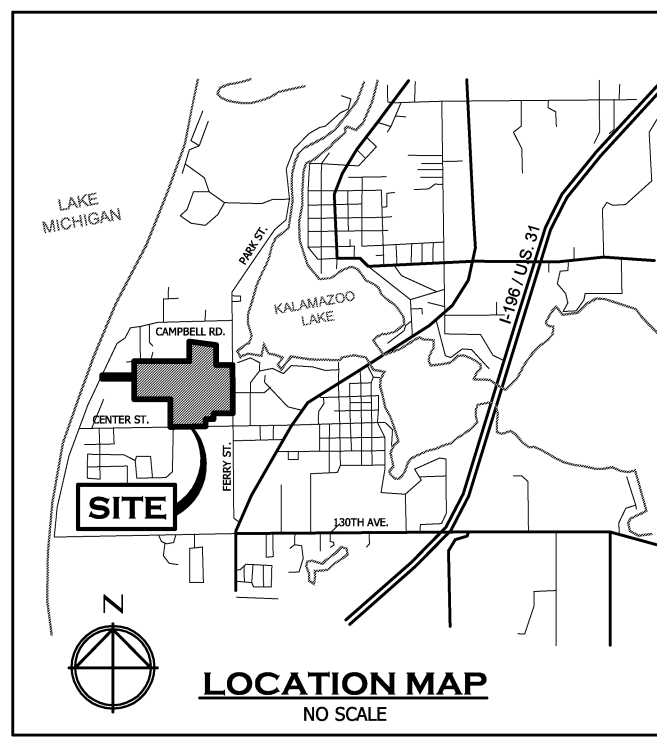
BENCHMARK #20: ELEV.= 634.92 (NGVD29)
SET RAILROAD SPIKE IN NORTH SIDE OF 60' ASH TREE LOCATED 28' EAST OF THE END OF GOLVIEW DRIVE & 360' SOUTH OF THE NORTH SIDE OF PAVEMENT FOR GOLVIEW DRIVE.

BENCHMARK #2144: ELEV.= 621.77 (NGVD29)
RAILROAD SPIKE IN NORTH SIDE OF UTILITY POLE LOCATED 9' EAST OF THE EAST EDGE OF PAVEMENT FOR FERRY STREET & 1000' NORTH OF THE EAST 1/4 CORNER OF SECTION 17.

BENCHMARK #2212: ELEV.= 627.02 (NGVD29)
RAILROAD SPIKE IN WEST SIDE OF UTILITY POLE LOCATED 9' EAST OF THE EAST EDGE OF PAVEMENT FOR FERRY STREET & 630' NORTH OF THE EAST 1/4 CORNER OF SECTION 17.

LEGEND

- EX. GRADE CONTOUR
- PROP. GRADE CONTOUR
- PROP. GRADE ELEV. (BLACKTOP)
- PROP. GRADE ELEV. (GUTTER)
- PROP. GRADE ELEV. (HIGH POINT)
- EX. BITUMINOUS
- PROP. BITUMINOUS
- PROP. STORM SEWER
- PROP. UNDERDRAIN
- PROP. SANITARY SEWER
- PROP. WATERMAIN
- PROP. LIMITS OF GRADING
- PROP. SILT FENCE
- WETLAND BOUNDARY FLAGS
- WETLAND AREA
- MONITORING WELL
- EXIST. TREELINE
- SOIL EROSION CONTROL MATTING
- SOIL BORING LOCATION



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Soil Erosion/Sedimentation
Control and Grading Plan
of
Golfview Drive (Private)
WESTSHORE PHASE 1B

PART OF OF SECTION 17, T1N, R16W,
CITY OF DOUGLAS, ALLEGAN COUNTY, MICHIGAN

**DOUGLAS PROPERTY
DEVELOPMENT, LLC**
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03/14/13	CONSTRUCTION PLAN SUBMITTAL	1	03/22/13	ALLEGAN COUNTY SEISC AGENT	2	03/27/13	CITY ENGINEER	3
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03/14/13		1	03/22/13		2	03/27/13		3
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03/14/13		1	03/22/13		2	03/27/13		3
03/14/13		1	03/22/13		2	03/27/13		3

project no.:
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sheet no.:
2 OF 6
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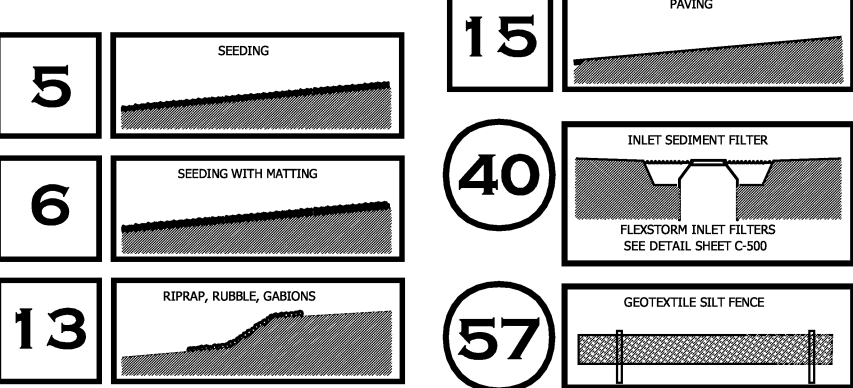
CONSTRUCTION STAKING AND LAYOUT
SHALL BE PERFORMED BY NEDERVELD, INC.

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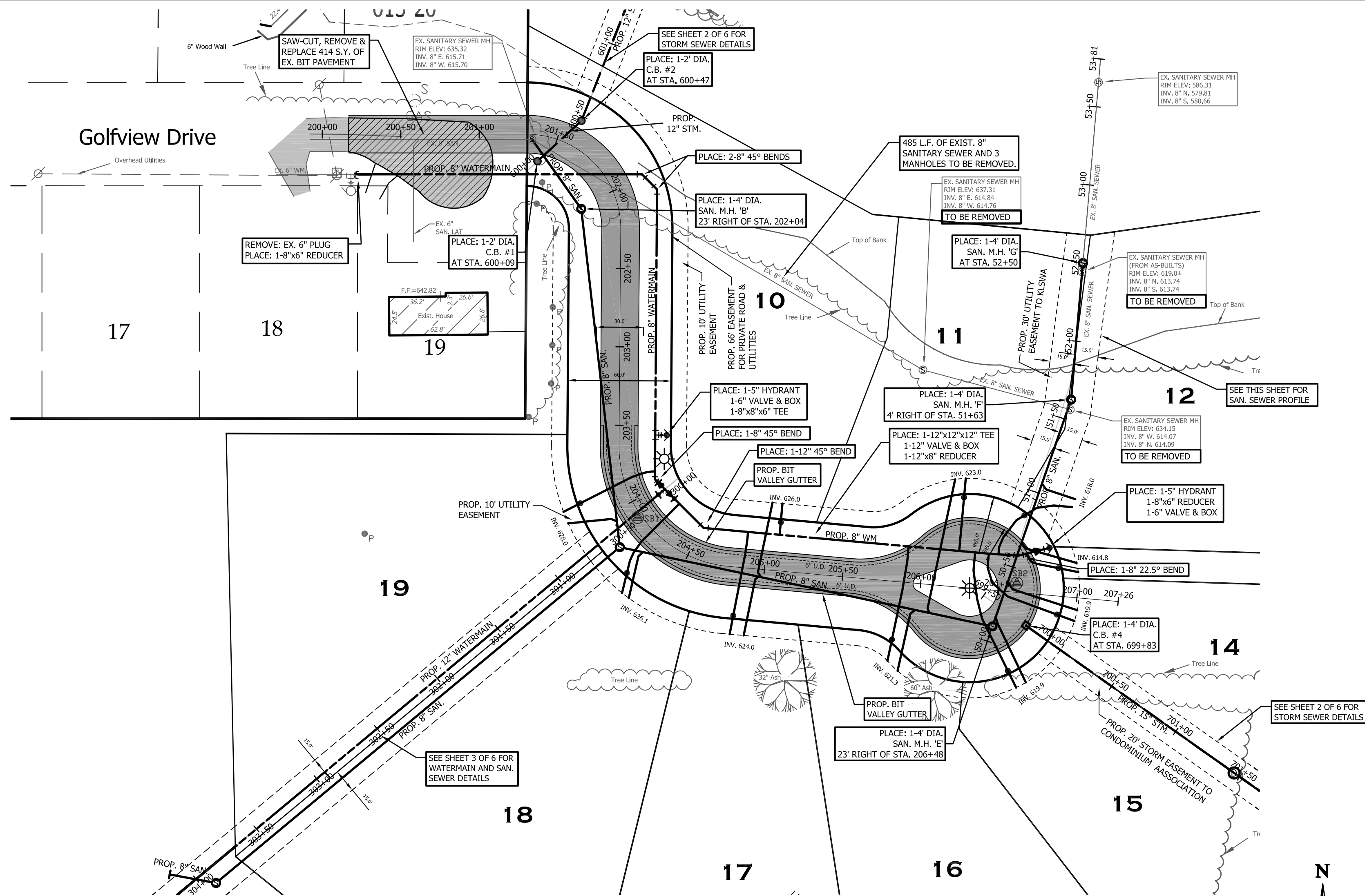
NOTE: SEDIMENT BASIN #1 TO BE BUILT & STABILIZED FIRST BEFORE ANY OTHER CONSTRUCTION WORK. STORM DISCHARGE TO THE SEDIMENT BASIN SHOULD NOT OCCUR UNTIL THE BASIN IS FULLY STABILIZED.

ALL WORK WITHIN REGULATED WETLANDS SHALL BE COMPLETED IN ACCORDANCE WITH MDEQ PERMIT # _____ ISSUED

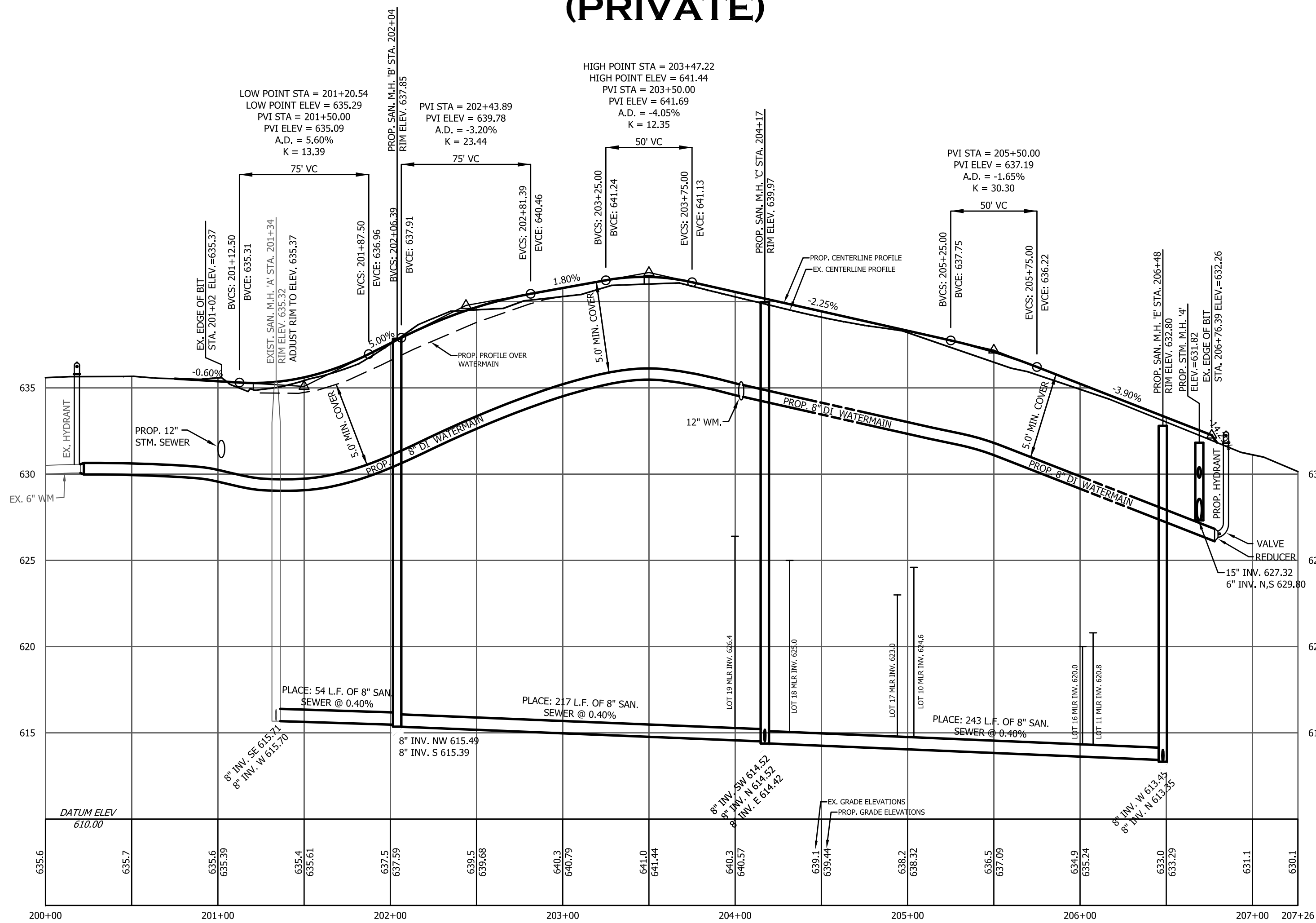
NOTE: ALL FILL AREAS, INCLUDING UTILITY TRENCHES, BUILDING ENVELOPES AND STREETS ARE TO BE COMPACTED IN 12" LOOSE LIFTS (CLAY AREAS: 4" - 6" LIFTS) TO 95% MAX. DRY DENSITY AS DETERMINED BY MICHIGAN CONE OR MODIFIED PROCTOR (ASTM D-1557) TESTING.



- SOIL EROSION AND SEDIMENTATION CONTROL NOTES:**
- 1) CONTRACTOR SHALL POSSESS THE SOIL EROSION AND SEDIMENTATION CONTROL PERMIT PRIOR TO START OF ANY EARTHWORK.
 - 2) CONTRACTOR SHALL MODIFY THIS SOIL EROSION AND SEDIMENTATION CONTROL PLAN TO SHOW THE ADDITIONAL CONTROL MEASURES INTENDED TO BE USED DURING CONSTRUCTION. SUBMIT MODIFICATIONS TO THE CONTROLLING AGENCY, THE OWNER, AND THE ENGINEER.
 - 3) EROSION PROTECTION SHALL BE PROVIDED AT ALL STORM SEWER INLETS AND OUTLETS. ALL BARE EARTH SHALL BE STABILIZED WITH SEEDING.
 - 4) LOCATION AND TYPE OF EROSION CONTROL MEASURES ARE IDENTIFIED ON THE SKETCH BY KEY NUMBERS, 5-40, RELATING TO THE MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY (MDEQ) EROSION CONTROL AND BEST MANAGEMENT PRACTICES.
 - DENOTES TEMPORARY PRACTICES
 - DENOTES PERMANENT PRACTICES
 - 5) A 150 FOOT LONG, 6 INCH DEEP CRUSHED CONCRETE ENTRANCE SHALL BE INSTALLED WHERE DIRT HIGHWAYS WILL BE ENTERING & EXITING THE SITE. ALL DIRT, CLAY ROCK, AND OTHER SOIL SHALL BE CLEARED FROM THE ROAD RIGHT-OF-WAY.
 - 6) ALL DIRT STOCKPILES SHALL HAVE SILT FENCE AROUND THEM.
 - 7) ALL INLET FILTERS AND SILT FENCE SHALL BE DISPECTED WEEKLY AND AFTER STORM EVENTS TO ENSURE THOSE CONTROLS ARE WORKING OPTIMALLY.
 - 8) VEGETATIVE FILTER STRIPS SHALL BE PLACED ON ALL AREAS OF THE DEVELOPMENT WHERE SLOPES EXCEED 1% BUT ARE LESS THAN 5% AND MUST BE AT LEAST 20' IN WIDTH. WOOLY MULCH BANSSETS SHALL BE PLACED IMMEDIATELY OVER SCARPED SLOPES AND MAINTAINED UNTIL VISIBLE VEGETATIVE GROWTH HAS BEEN ESTABLISHED. SLOPES GREATER THAN 5% SHOULD HAVE DIVERSIONS OR ANY OTHER CONCEIVABLE CONTROL TO CARRY WATER AWAY FROM THESE AREAS UNTIL VEGETATIVE GROWTH OCCURS.



GOLF VIEW DRIVE (PRIVATE)

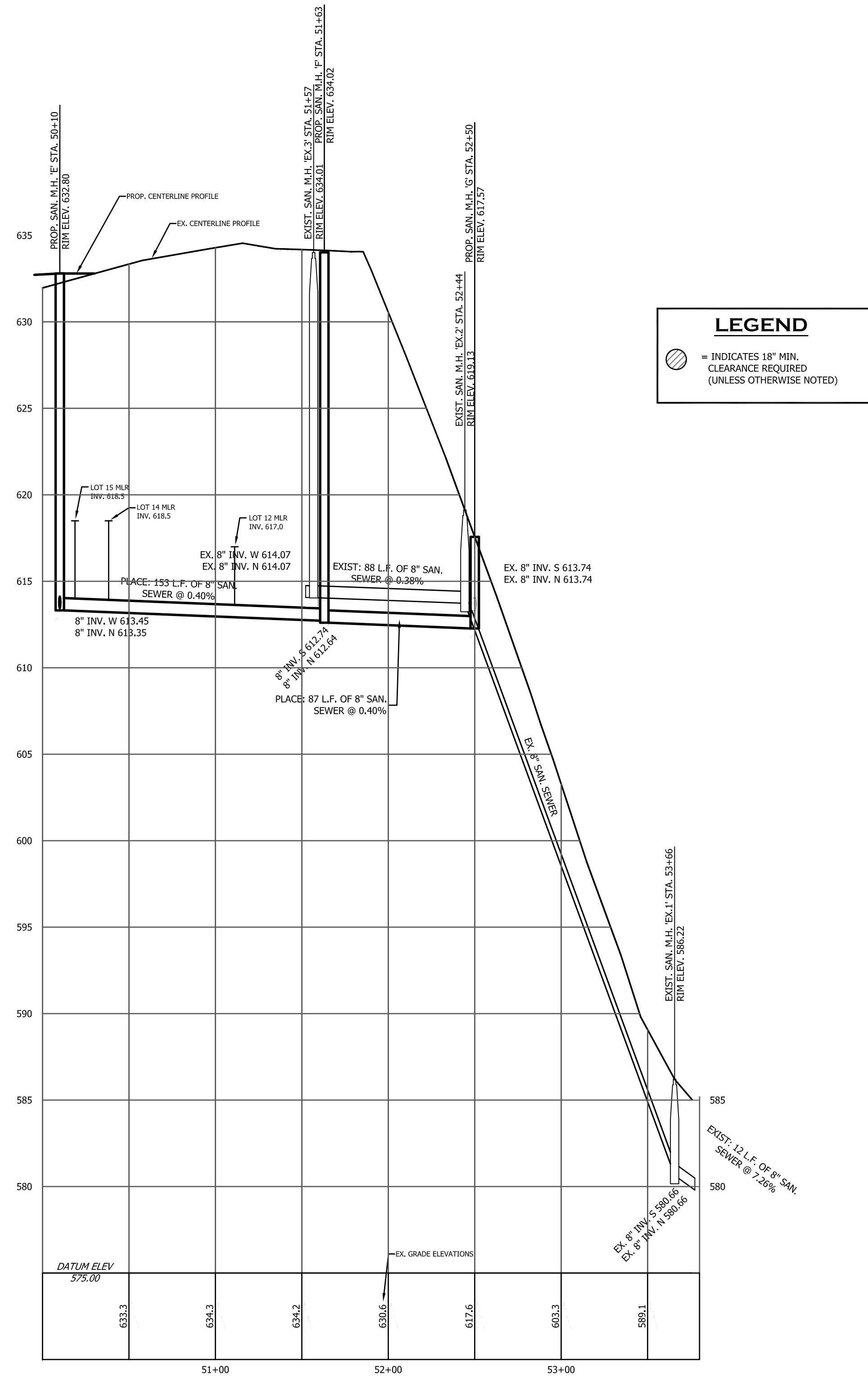


SB-1
Surface Elevation ~ 640
0.0' - 0.1' Topsoil - dark brown fine sand (12.0")
1.0' - 10.0' Sand - compact light brown fine (dry)
10.0' - 10.3' Clay - stiff brown silty
10.3' - 13.5' Clay - stiff gray silty
13.5' - 14.5' Silt - compact brown sandy (wet)
14.5' - 15.0' Clay - stiff gray silty
15.0' End of Boring (Elevation ~ 625)
Groundwater encountered 10.0 ft.

SB-2
Surface Elevation ~ 633
0.0' - 0.1' Topsoil - dark brown fine sand (12.0")
1.0' - 9.5' Sand - compact light brown (wet below 4.0 feet)
9.5' - 10.0' Clay - stiff brown silty
10.0' - 11.0' Clay - stiff gray silty
11.0' - 14.0' Silt - stiff brown clayey with occasional clay seams (wet)
14.0' - 15.0' Silt - stiff gray clayey (wet)
15.0' End of Boring (Elevation ~ 618)
Groundwater encountered 4.5 ft.

SB-4
Surface Elevation ~ 624
0.0' - 1.0' Topsoil - dark brown fine sand (12.0")
1.0' - 2.2' Sand - compact light brown fine with a trace of clay (wet)
2.2' - 9.5' Clay - firm to stiff brown silty
9.5' - 14.0' Sand - compact light brown fine with silt and clay seams (wet)
14.0' - 15.0' Clay - stiff gray silty
15.0' End of Boring (Elevation ~ 609)
Groundwater encountered 1.5 ft.

PROPOSED SANITARY PROFILE



LEGEND
= INDICATES 18" MIN. CLEARANCE REQUIRED (UNLESS OTHERWISE NOTED)

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Golfview Drive (Private)
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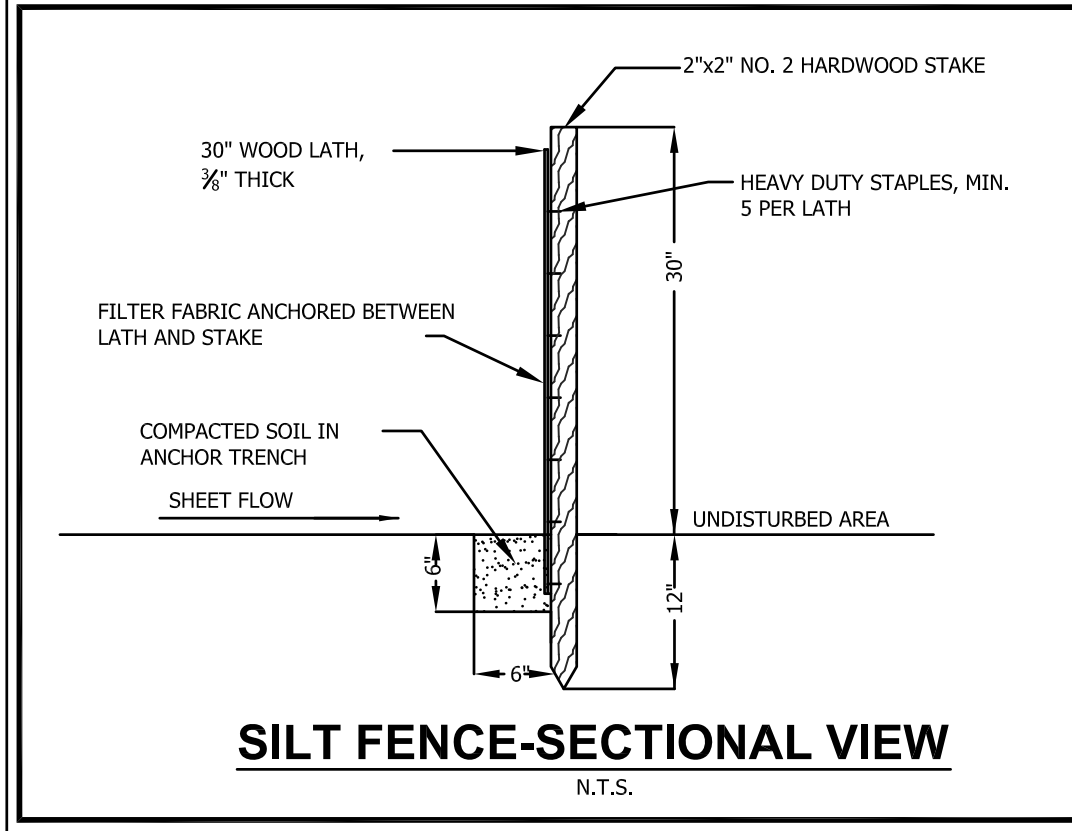
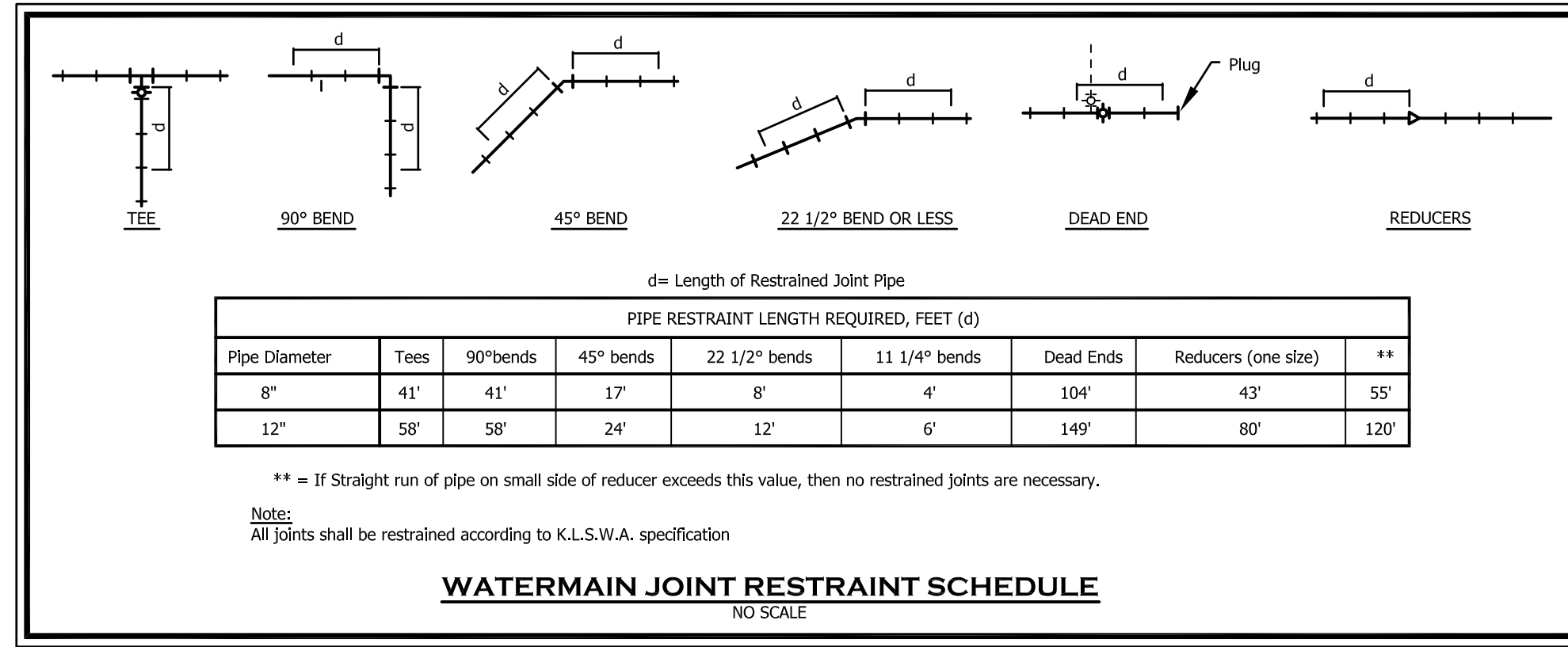
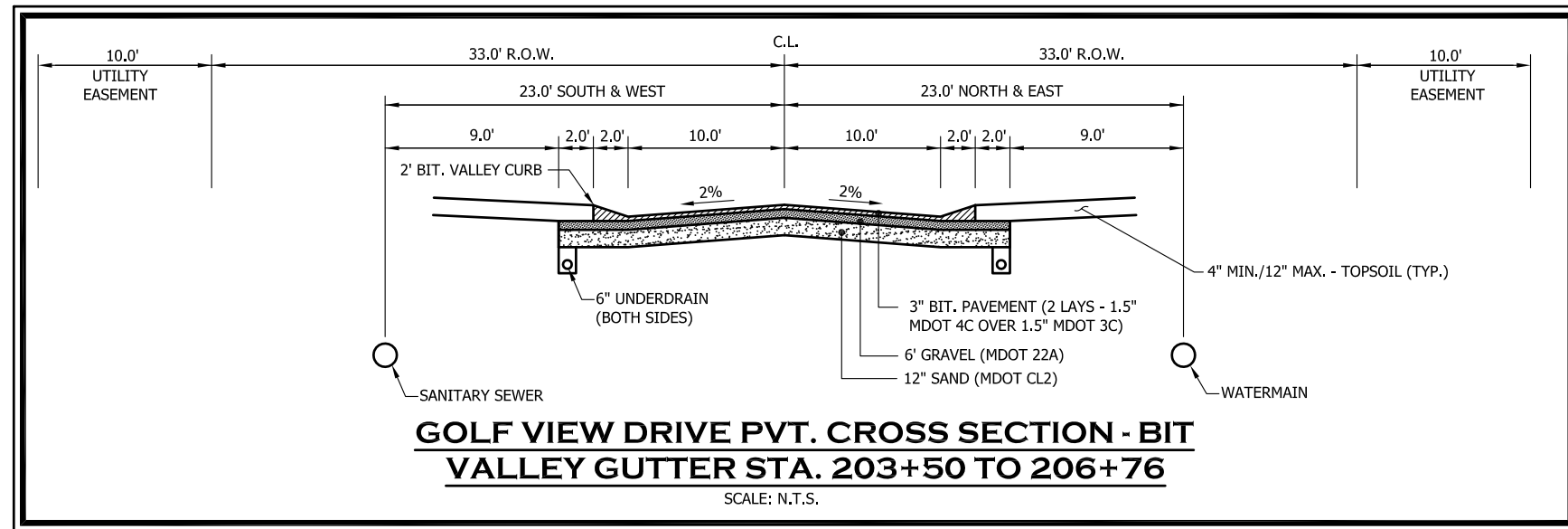
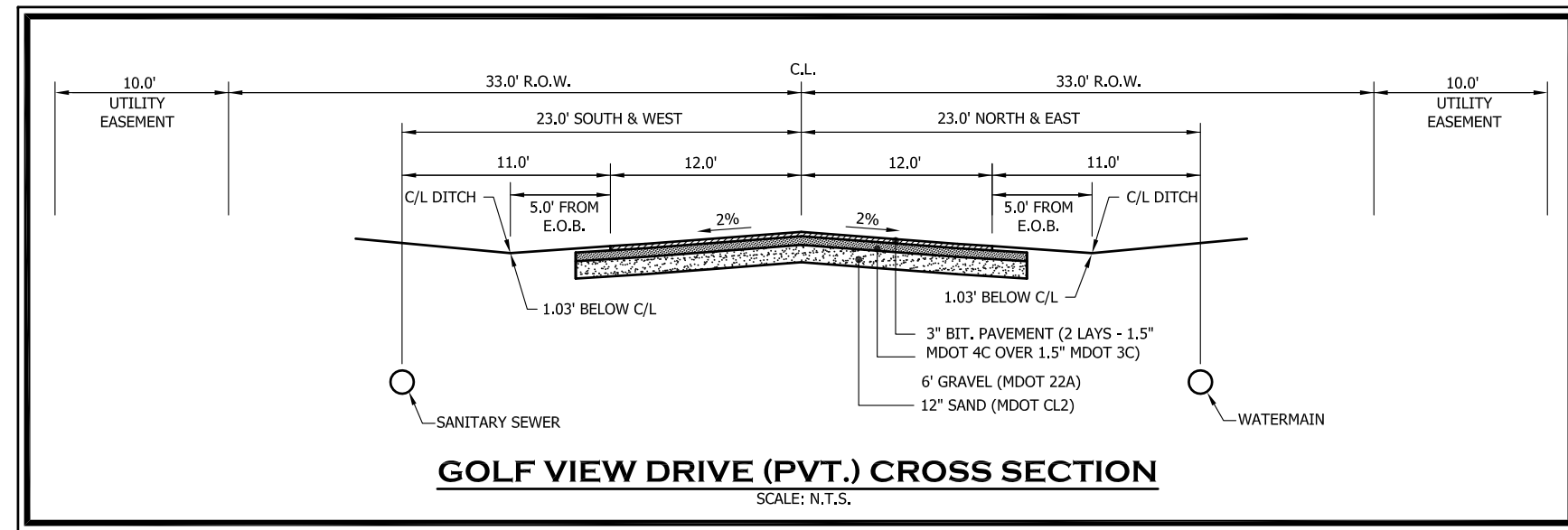
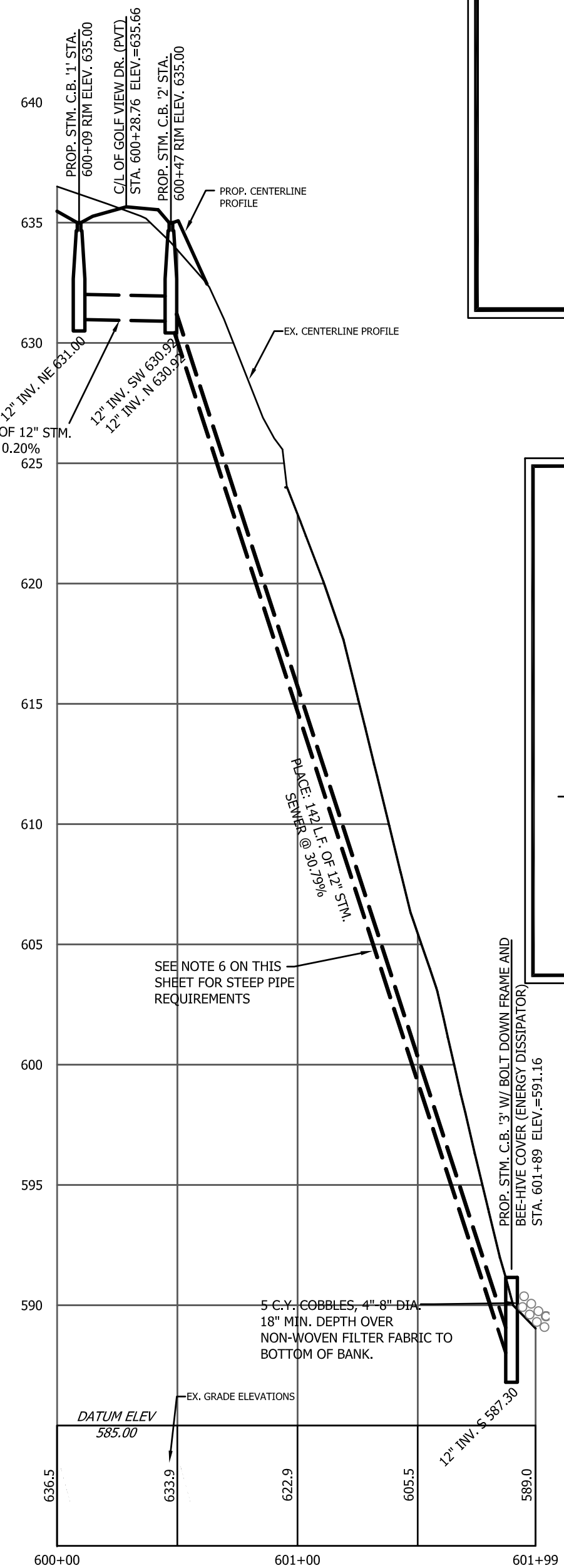
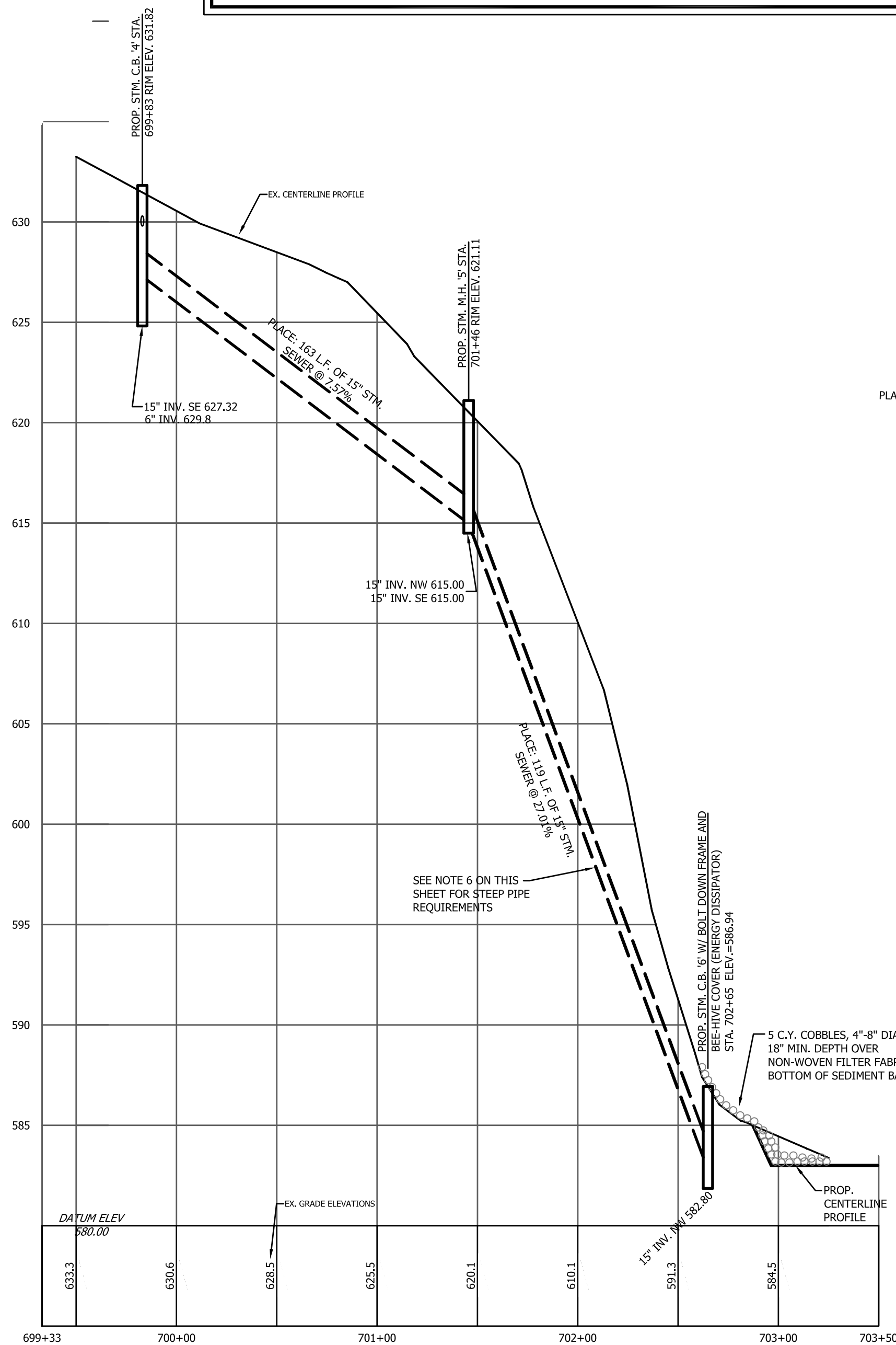
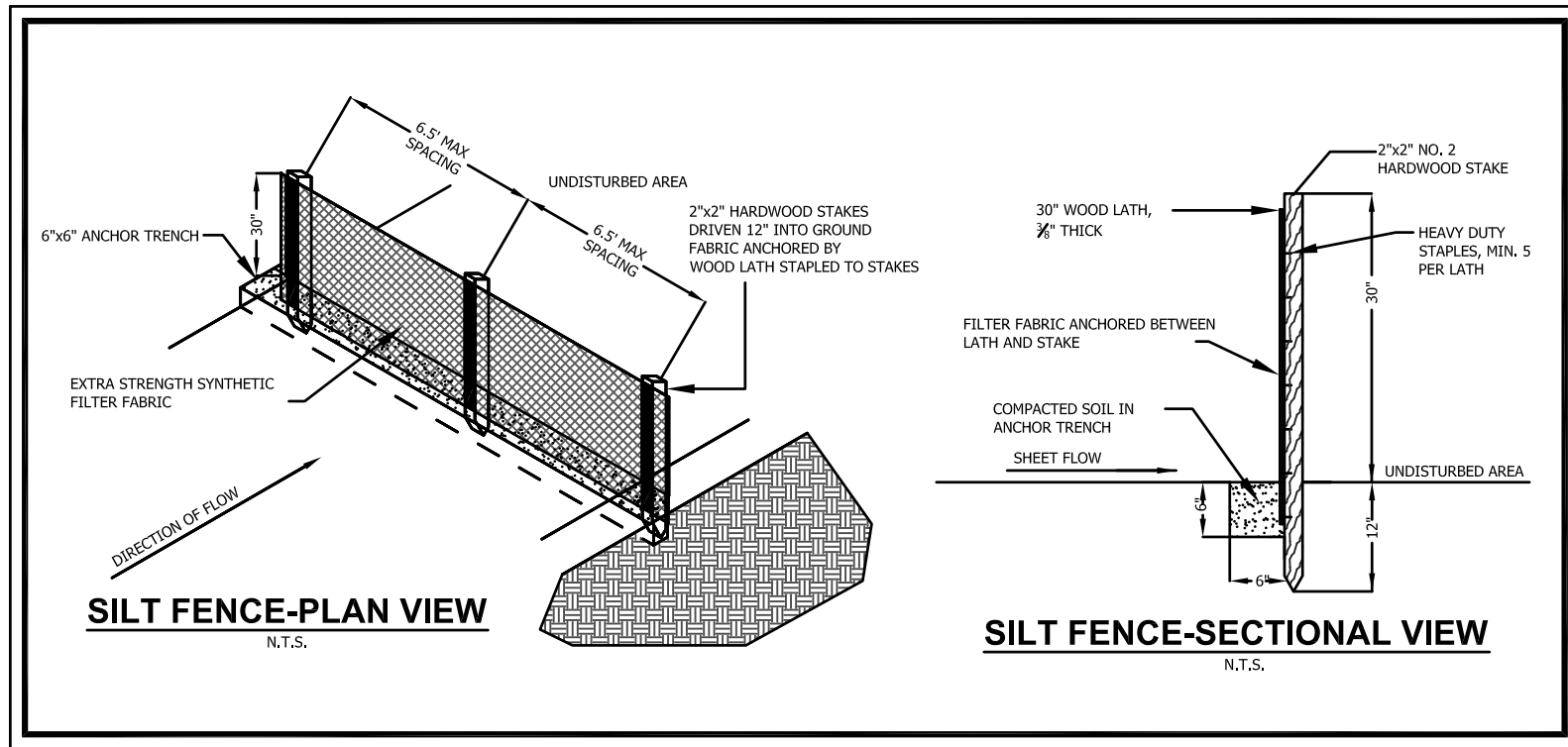
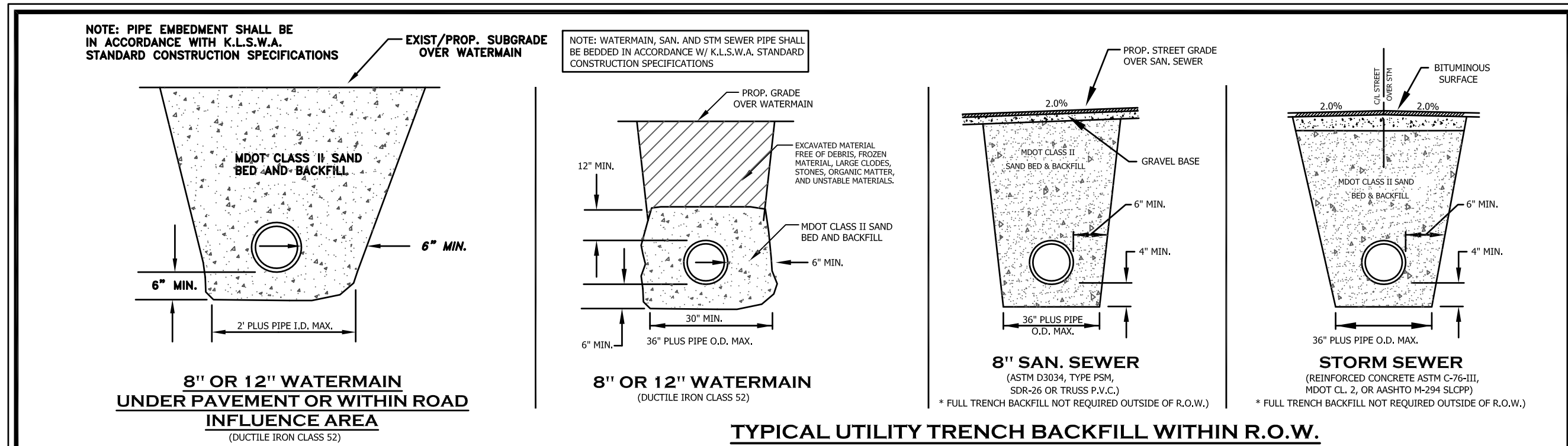
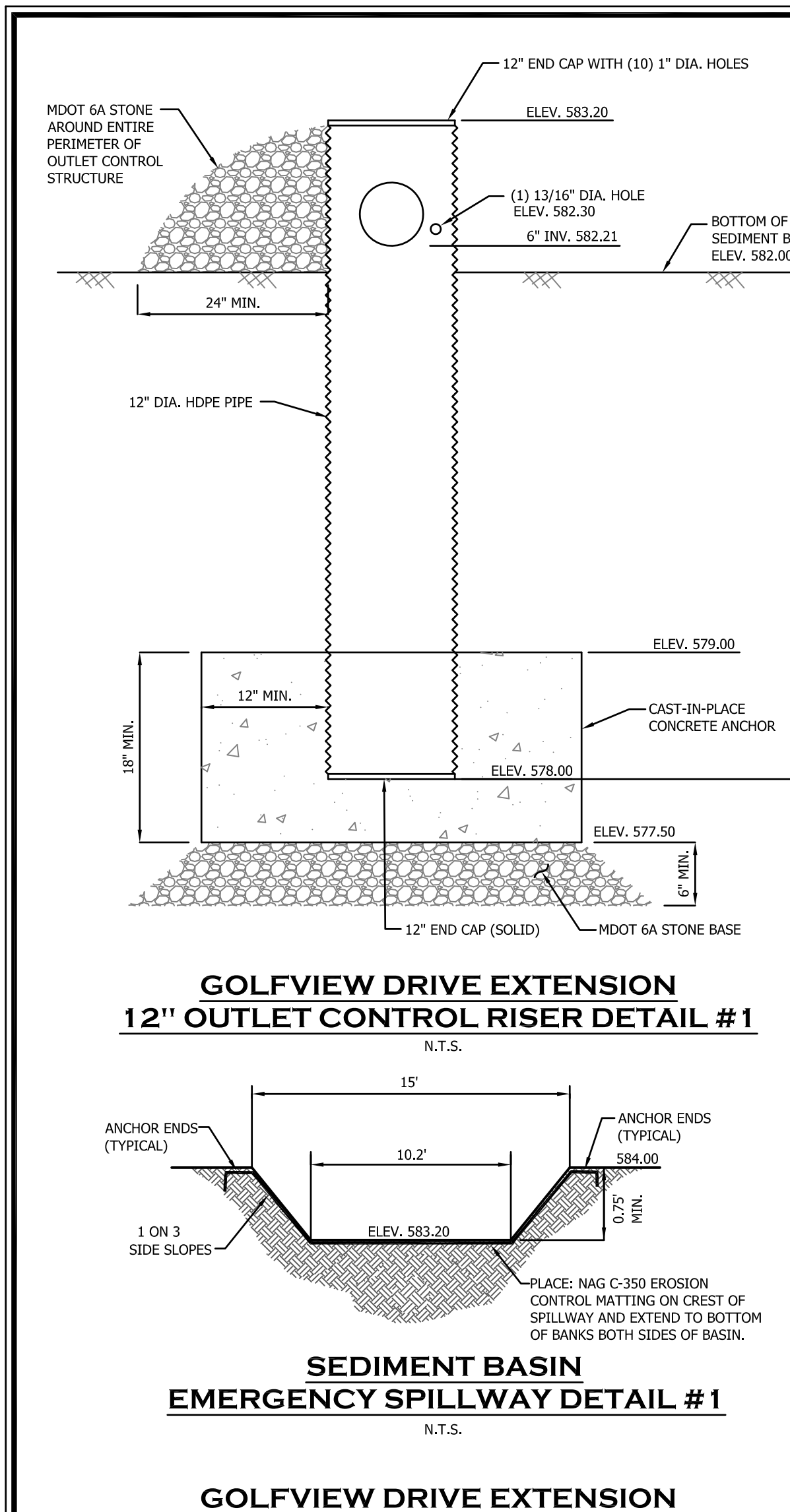
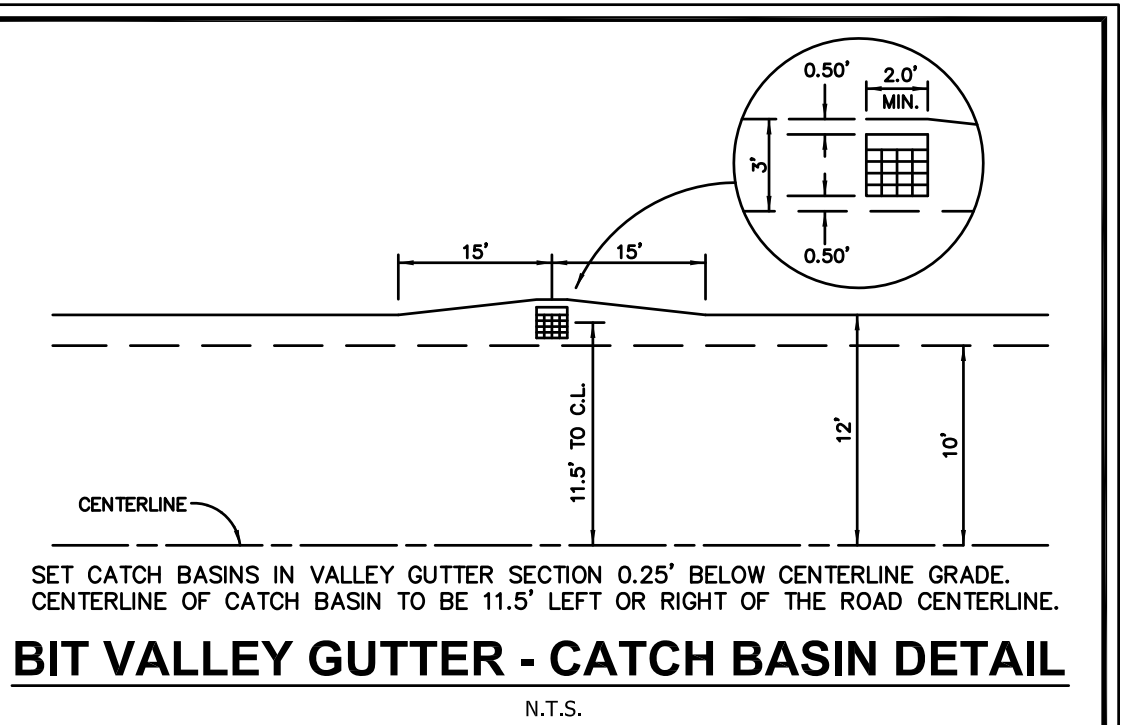
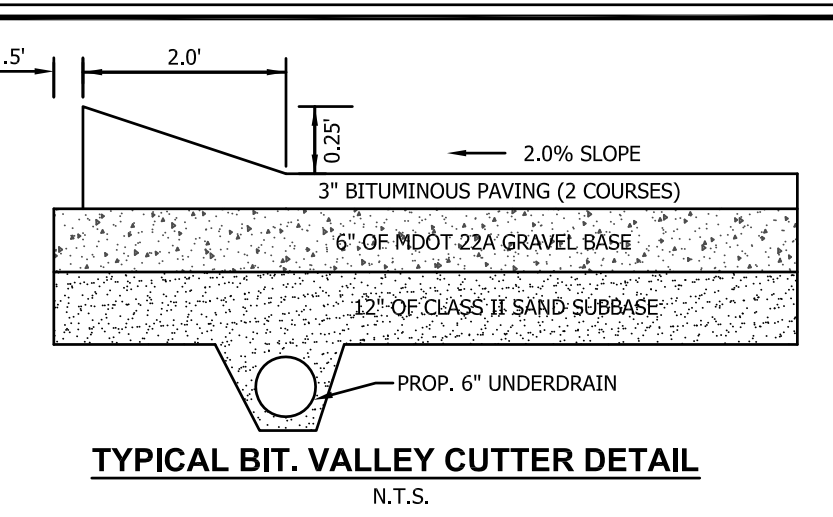
DOUGLAS PROPERTY DEVELOPMENT, LLC
Attention:
Kevin Einfeld
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Grand Rapids, Michigan 49506
Phone (616) 458-8505

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RJB	07/12/13	4	FOR CONSTRUCTION	07/12/13			
		5					
		6					
		7					
		8					

project no.:
13200132
C-402
sheet no.:
5 OF 6
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NOTES

1. TOPSOIL STRIPPING, PIPE EXCAVATION, PIPE BACKFILL & TOPSOIL REPLACEMENT ARE INCIDENTAL TO THE WORK.
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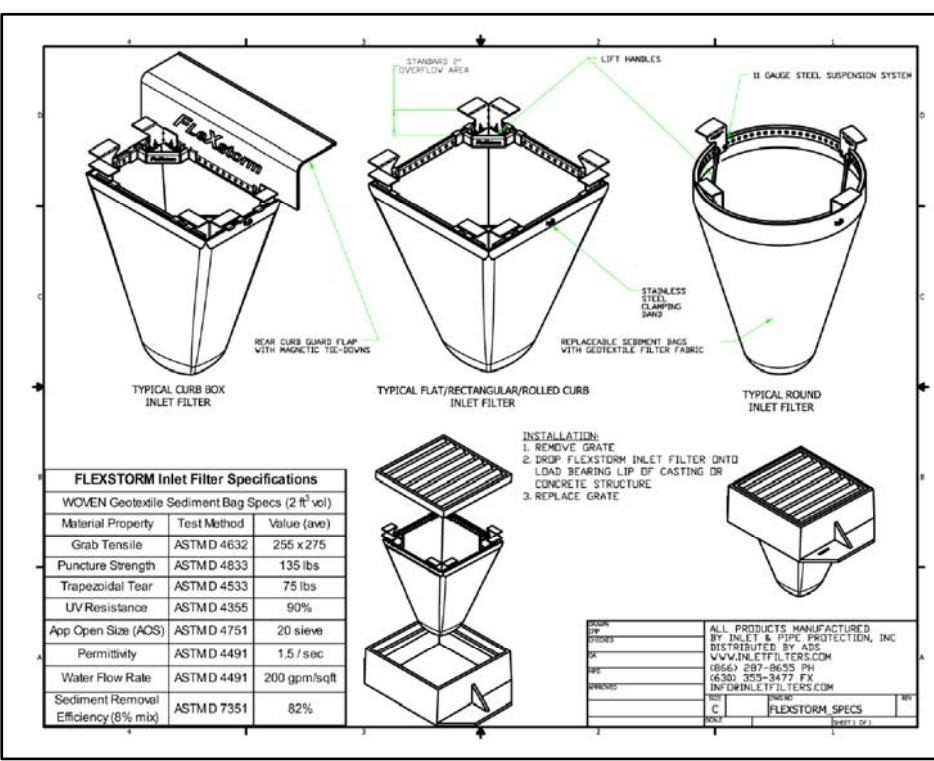


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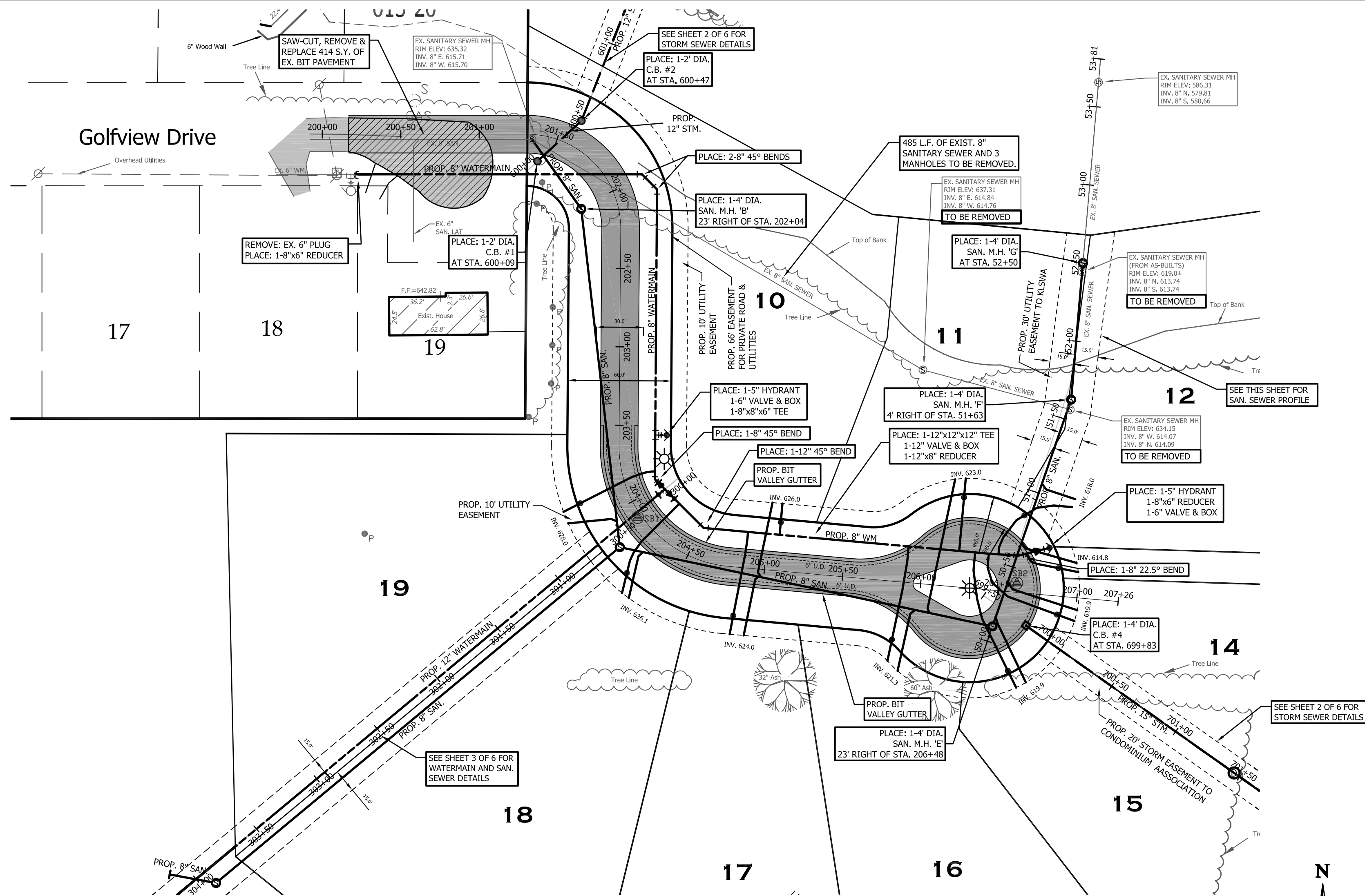
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07/12/13		5					
07/12/13		6					
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project no.: 13200132

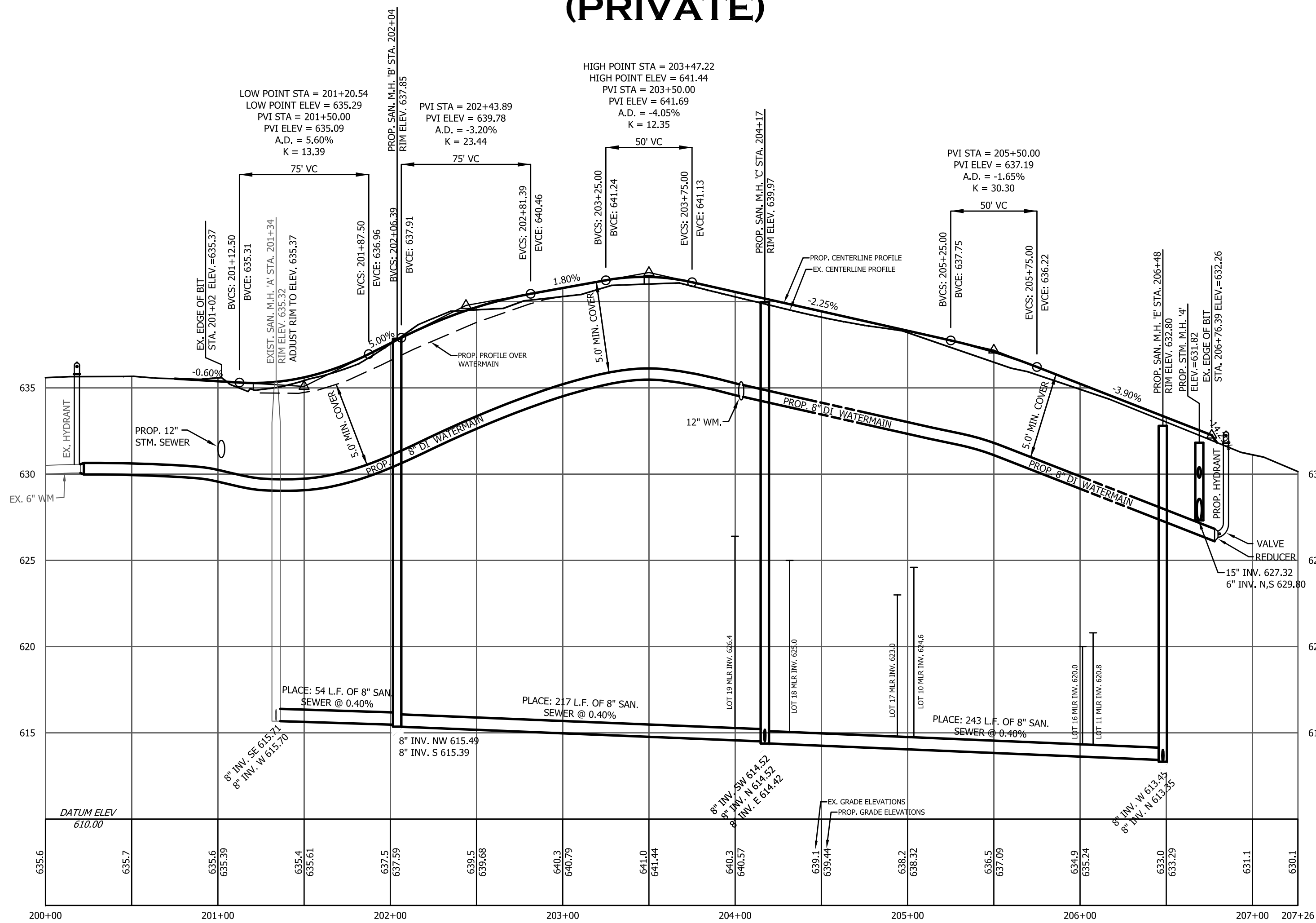
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sheet no.: 6 OF 6

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GOLF VIEW DRIVE (PRIVATE)

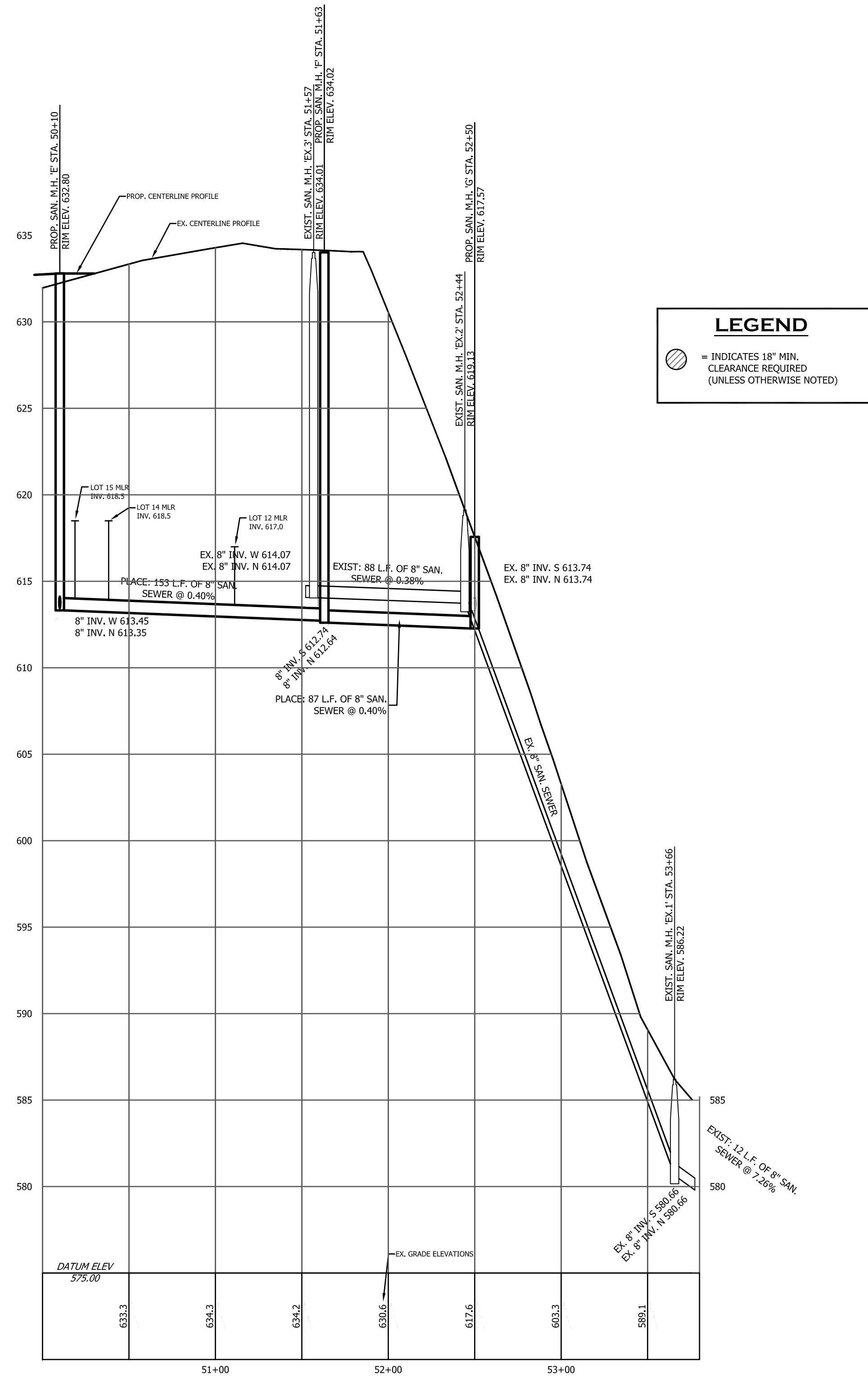


SB-1
Surface Elevation ~ 640
0.0' - 0.1' Topsoil - dark brown fine sand (12.0')
1.0' - 10.0' Sand - compact light brown fine (dry)
10.0' - 10.3' Clay - stiff brown silty
10.3' - 13.5' Clay - stiff gray silty
13.5' - 14.5' Silt - compact brown sandy (wet)
14.5' - 15.0' Clay - stiff gray silty
15.0' End of Boring (Elevation ~ 625)
Groundwater encountered 10.0 ft.

SB-2
Surface Elevation ~ 633
0.0' - 0.1' Topsoil - dark brown fine sand (12.0')
1.0' - 9.5' Sand - compact light brown (wet below 4.0 feet)
9.5' - 10.0' Clay - stiff brown silty
10.0' - 11.0' Clay - stiff gray silty
11.0' - 14.0' Silt - stiff brown clayey with occasional clay seams (wet)
14.0' - 15.0' Silt - stiff gray clayey (wet)
15.0' End of Boring (Elevation ~ 618)
Groundwater encountered 4.5 ft.

SB-4
Surface Elevation ~ 624
0.0' - 1.0' Topsoil - dark brown fine sand (12.0')
1.0' - 2.2' Sand - compact light brown fine with a trace of clay (wet)
2.2' - 9.5' Clay - firm to stiff brown silty
9.5' - 14.0' Sand - compact light brown fine with silt and clay seams (wet)
14.0' - 15.0' Clay - stiff gray silty
15.0' End of Boring (Elevation ~ 609)
Groundwater encountered 1.5 ft.

PROPOSED SANITARY PROFILE



LEGEND
= INDICATES 18" MIN. CLEARANCE REQUIRED (UNLESS OTHERWISE NOTED)

NEDERVELD
www.nederveld.com
800.222.1868
ANN ARBOR
3025 Miller Road
Ann Arbor, MI 48103
PHONE: 734.979.6963
CHICAGO
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INDIANAPOLIS
8459 Castletown Dr., Suite B
Indianapolis, IN 46250
PHONE: 317.288.3762

Golfview Drive (Private)
WESTSHORE PHASE 1B
PART OF SECTION 17, T3N, R16W,
CITY OF DOUGLAS, ALLEGAN COUNTY, MICHIGAN

**DOUGLAS PROPERTY
DEVELOPMENT, LLC**
Attention:
Kevin Einfeld
5510 Cascade Road SE, Suite 21
Grand Rapids, Michigan 49506
Phone (616) 458-8505

checked	date	no.	comment	date	drawn by	date	checked by
RJB	03/14/13	1	CONSTRUCTION PLAN SUBMITTAL	03/14/13			
RJB	03/22/13	2	ALLEGAN COUNTY SUBC. AGENT	03/22/13			
RJB	05/07/13	3	CITY ENGINEER	03/27/13			
RJB	07/12/13	4	FOR CONSTRUCTION				
		5					
		6					
		7					
		8					

project no.:
13200132
C-402
sheet no.:
5 OF 6
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1. TOPSOIL, STRIPPING, PIPE EXCAVATION, PIPE BACKFILL & TOPSOIL REPLACEMENT ARE INCIDENTAL TO THE WORK.

2. ALL DISTURBED AREAS SHALL BE RESTORED WITH 4" MINIMUM AND 12" MAXIMUM TOPSOIL AND SEED/FERTILIZER/MULCH MIXTURE.

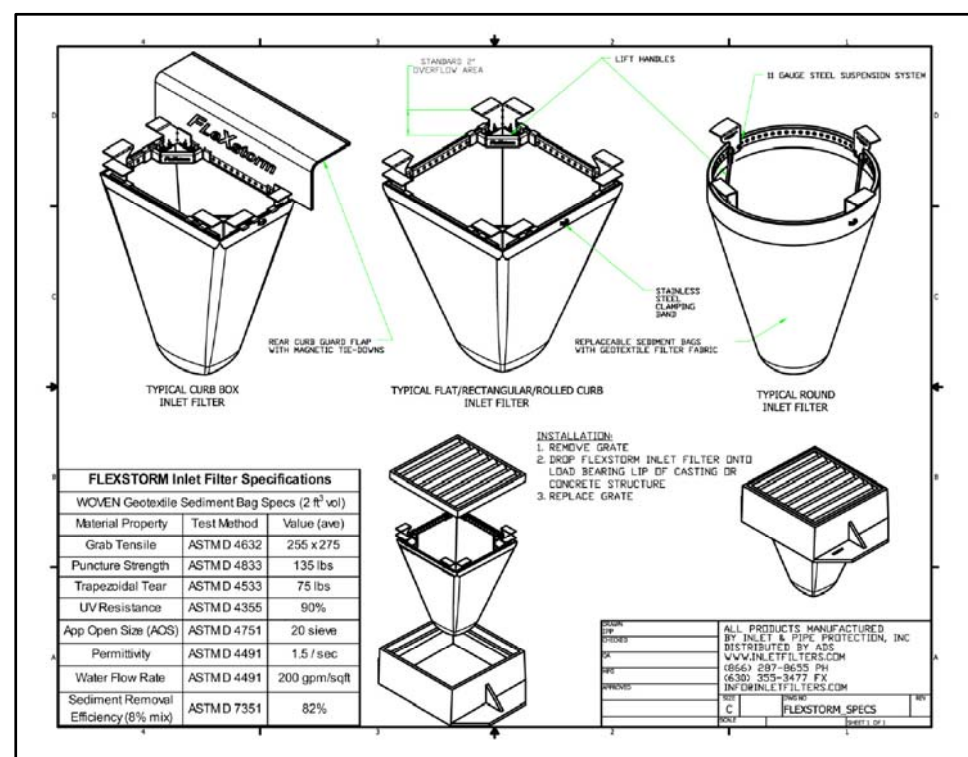
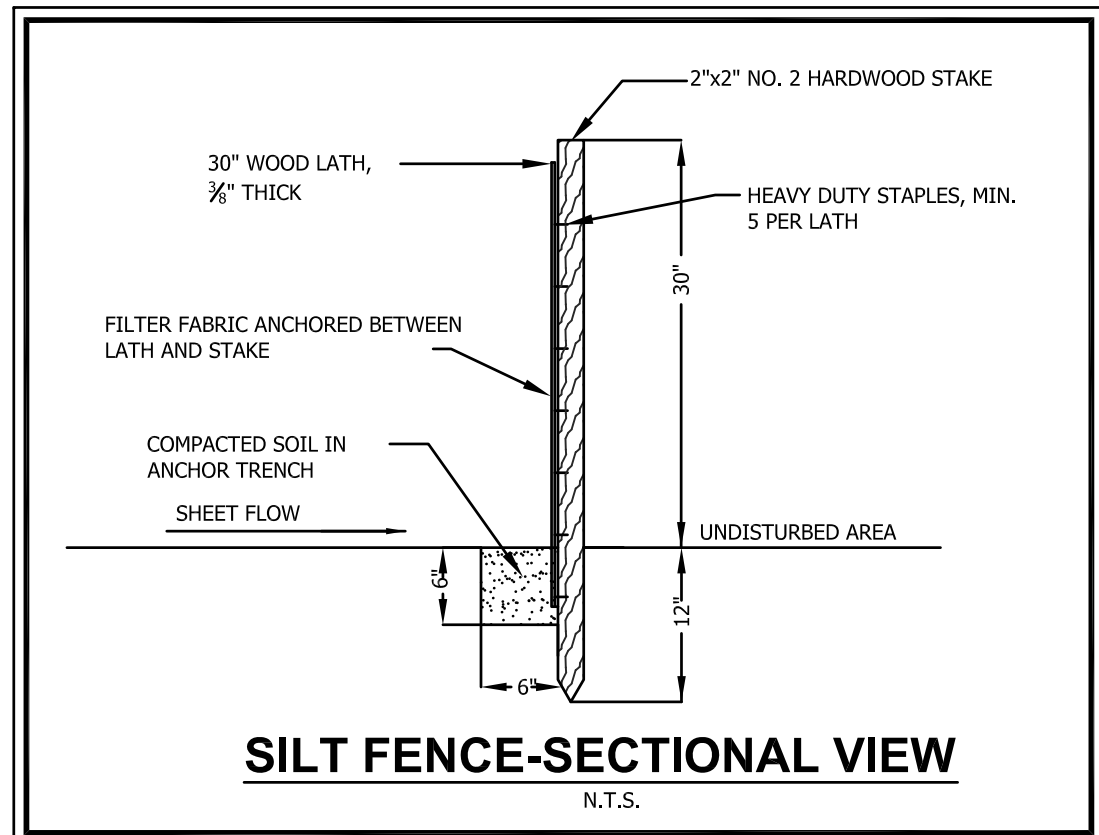
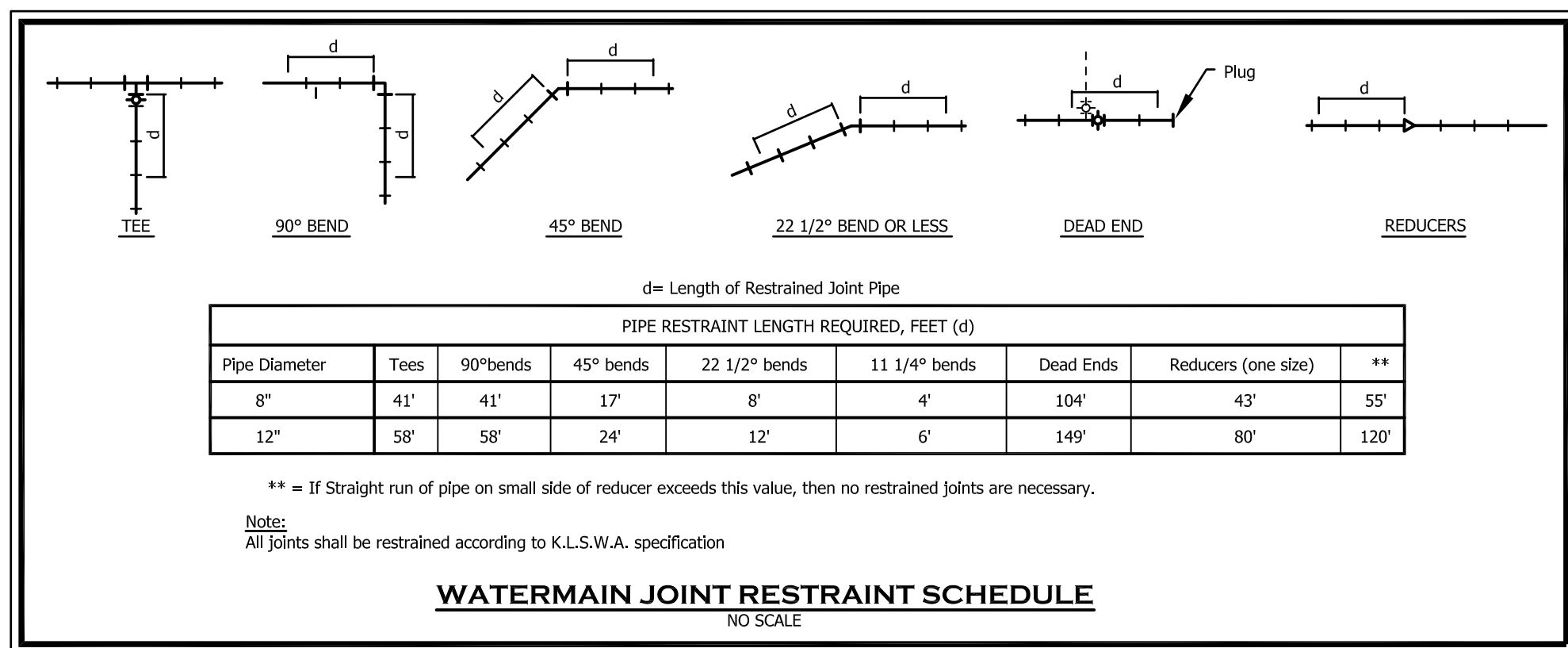
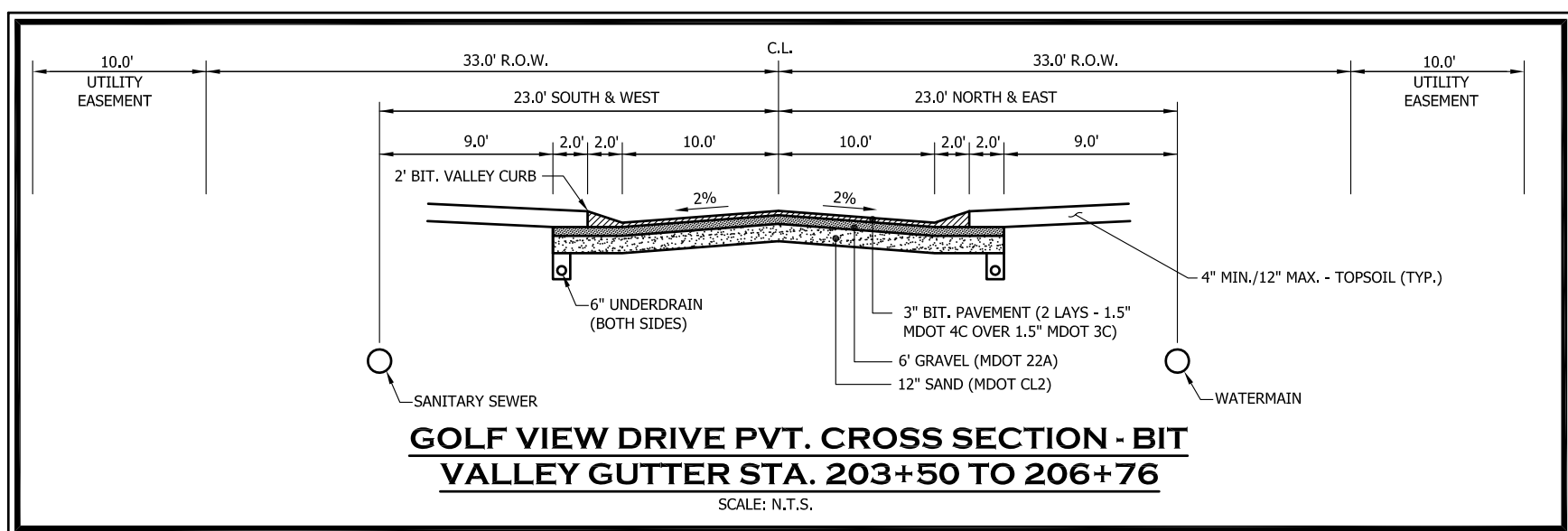
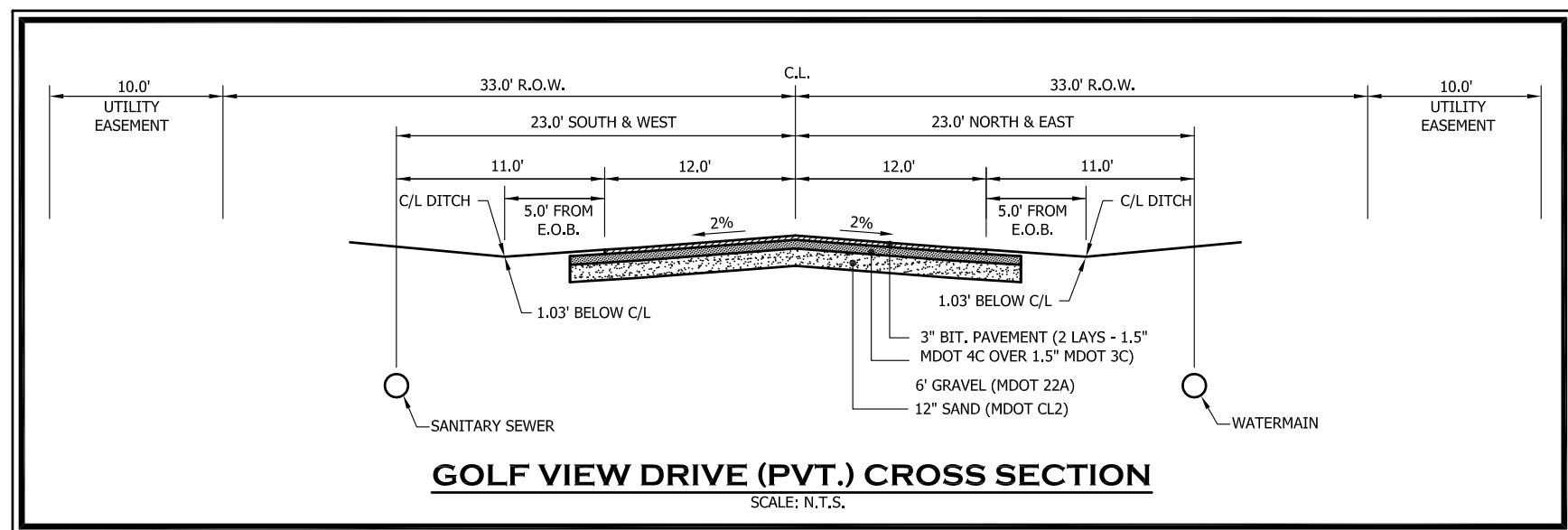
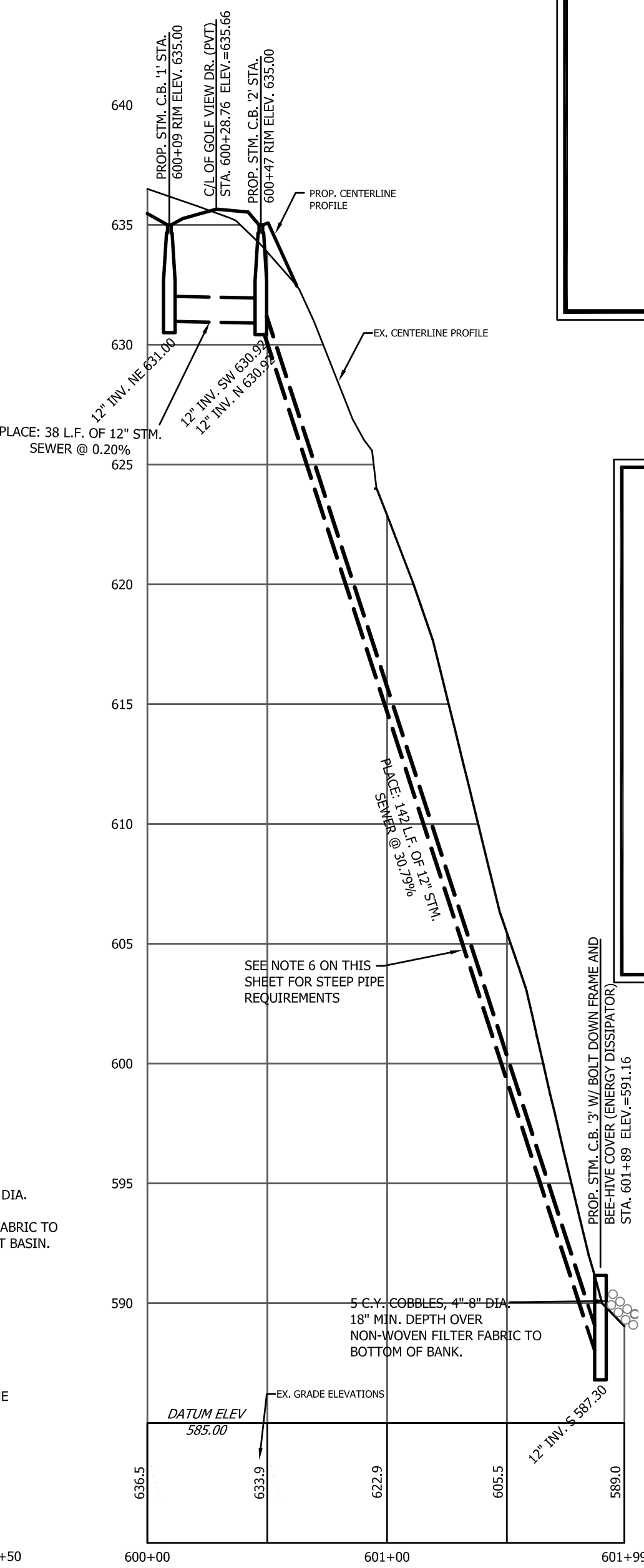
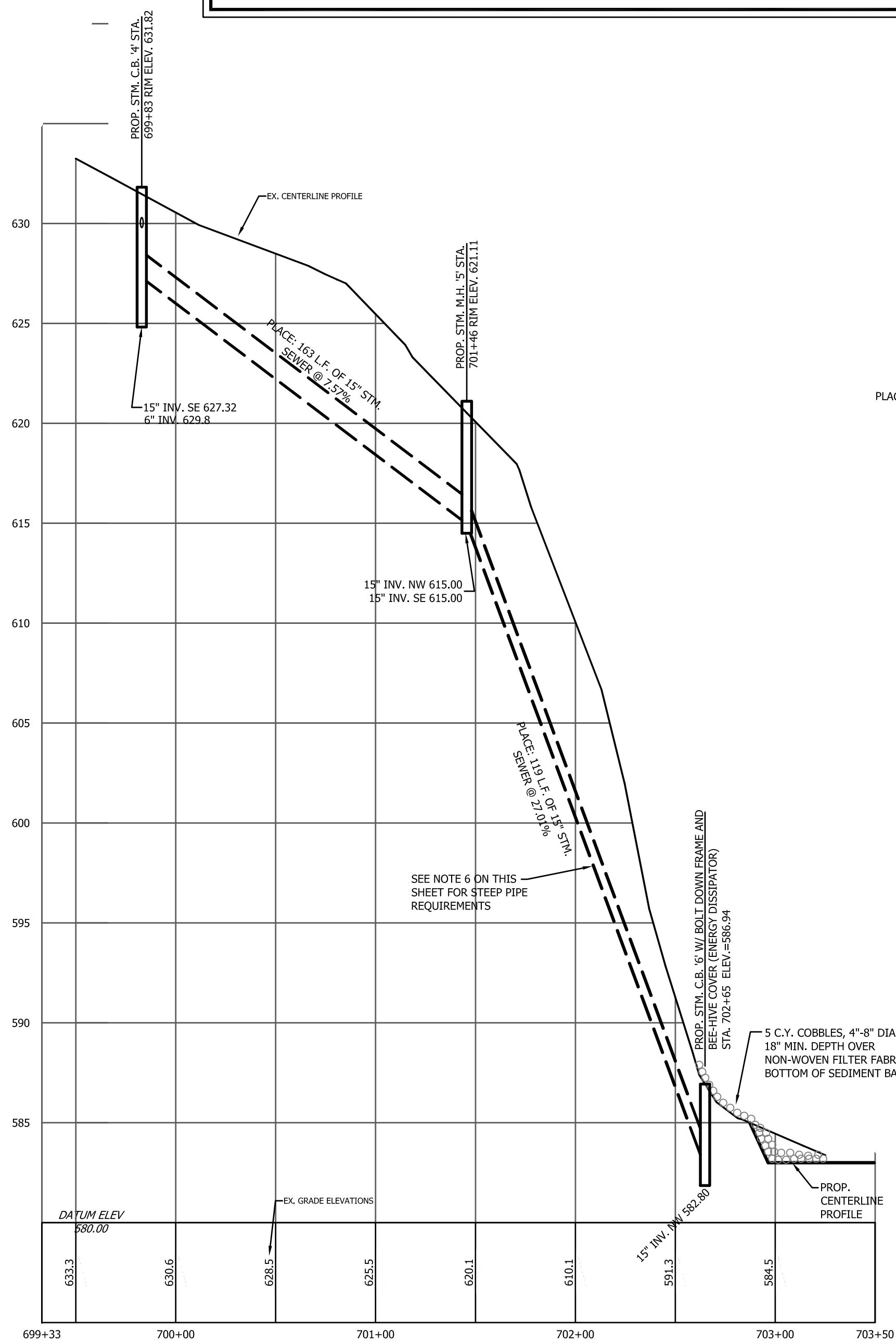
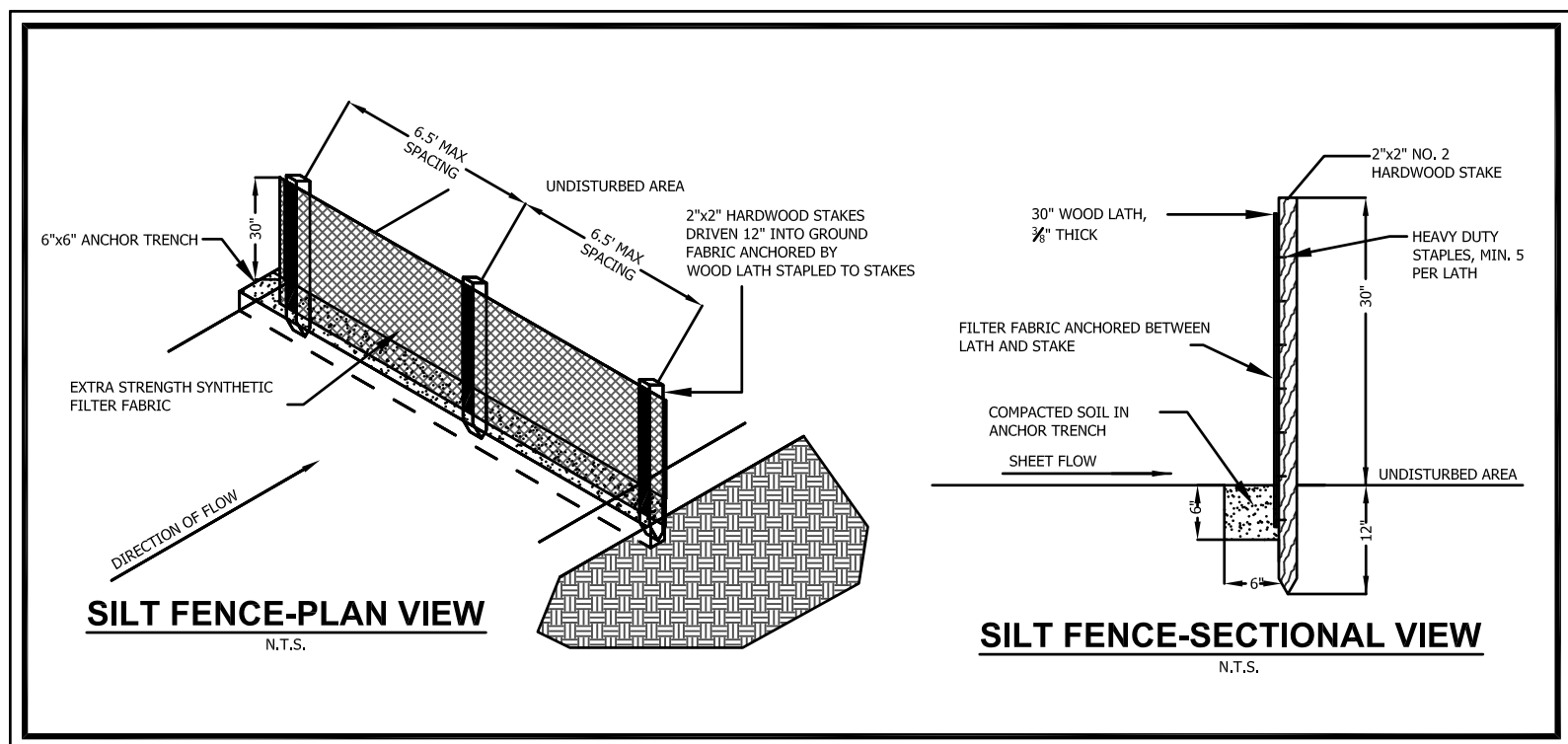
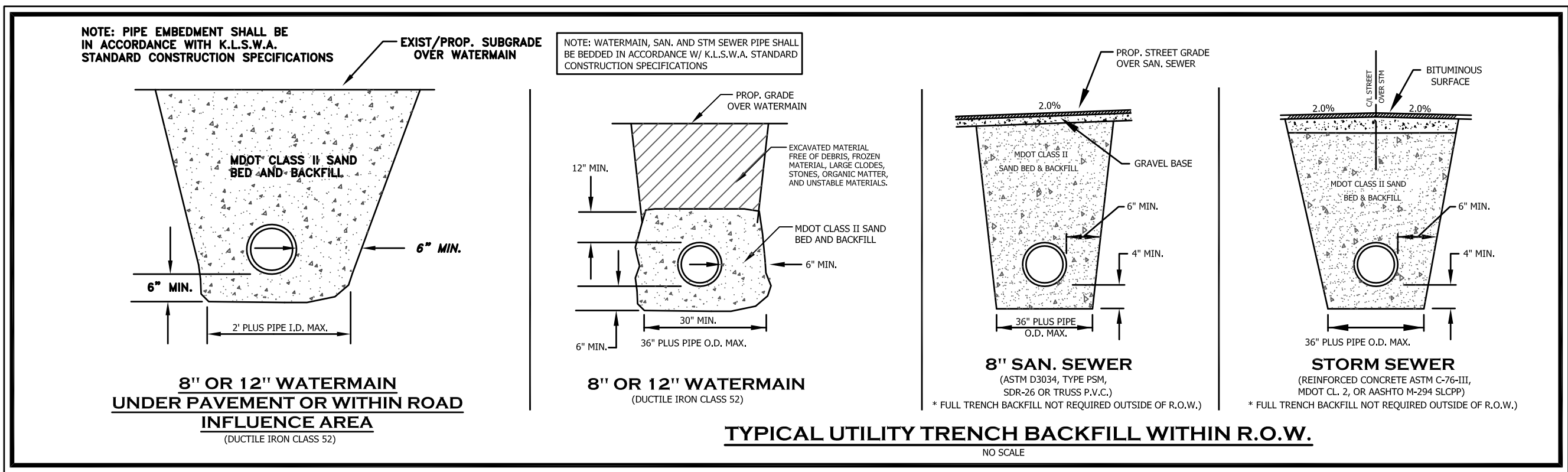
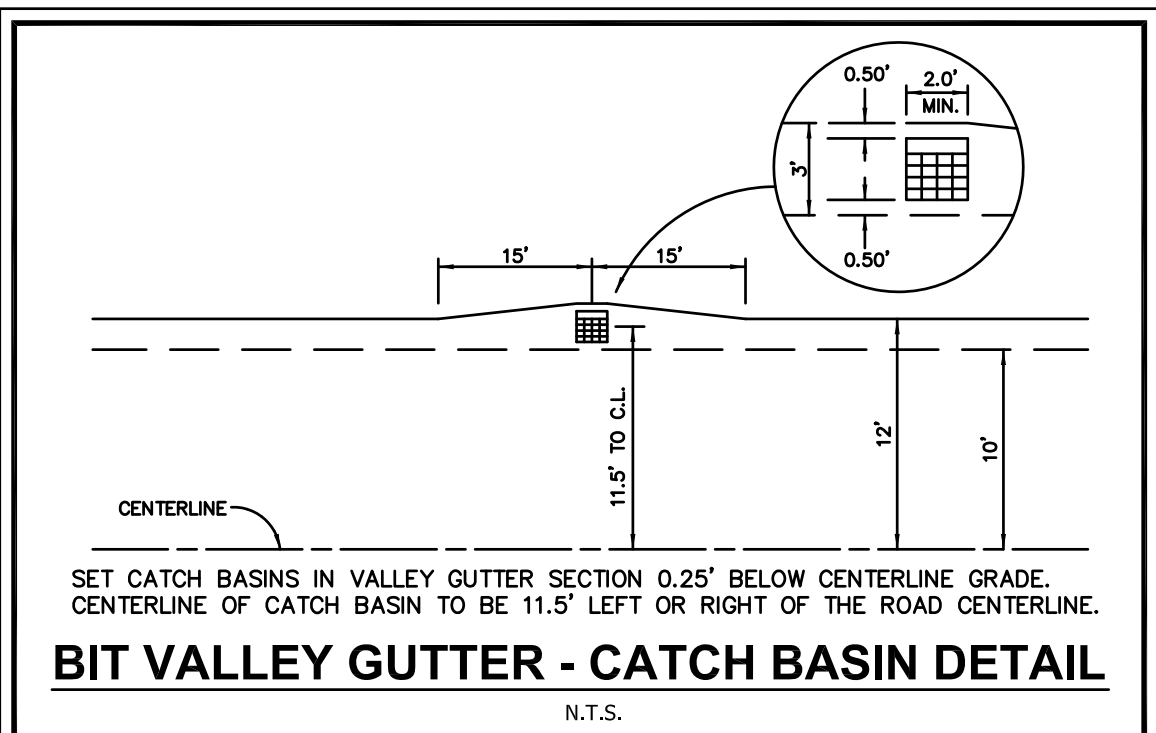
3. REMOVAL AND REPLACEMENT OF DRIVEWAY STALL, SEWER CULVERTS, STREET SIGNS, MAILBOXES, LAWN SPRINKLERS, FENCES, SHRUBS OR SIMILAR ITEMS ARE INCIDENTAL TO THE WORK.

4. CONTRACTOR SHALL VERIFY THAT ALL NECESSARY PERMITS AND EASEMENTS HAVE BEEN OBTAINED PRIOR TO ANY CONSTRUCTION.

5. CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE PROPER PERMIT TO WORK IN FERRY ST., GULFVIEW DR. & CENTER ST. RIGHT-OF-WAY INCIDENTAL TO CONTRACT.

6. ALL STORM SEWER PIPE TO BE INSTALLED ON STEEP SLOPES AT GREATER THAN 12% SLOPE, UNLESS OTHERWISE ORDERED BY THE ANCHORAGE DEPARTMENT TO PREVENT JOINT SEPARATION & PIPE MIGRATION IN ACCORDANCE WITH PIPE MANUFACTURER RECOMMENDATION.

7. ON ALL TRENCHES, THE PIPE CAN BE SOLID WALL CONTINUOUS PIPE DIRECTIONALLY BORED TO THE BOTTOM OF THE BANK.



**Know what's below.
Call before you dig.**

UTILITY LOCATIONS ARE DERIVED FROM ACTUAL MEASUREMENTS OR AVAILABLE RECORDS. THEY SHOULD NOT BE INTERPRETED TO BE EXACT LOCATIONS NOR SHOULD IT BE ASSUMED THAT THEY ARE THE ONLY UTILITIES IN THIS AREA.

NOTE:
EXISTING UTILITIES AND SERVICE LINES IDENTIFIED AS "PLAN" WERE OBTAINED FROM AVAILABLE CITY AS-BUILT RECORD DRAWINGS. THE CONTRACTOR SHALL VERIFY THE LOCATION, DEPTH AND STATUS OF ALL UTILITIES AND SERVICE LINES PRIOR TO NEW CONNECTIONS.

GENERAL NOTES:

1. CONSTRUCTION OF SANITARY SEWER, WATERMAIN, STORM SEWER AND SIDEWALK IMPROVEMENTS SHALL BE IN ACCORDANCE WITH THE CURRENT VILLAGE OF DOUGLAS & KLSWA STANDARD CONSTRUCTION REQUIREMENTS.
2. PROVIDE SIEVE ANALYSIS ON EXISTING SOILS TO DETERMINE IF THEY MEET CLASS II SPECIFICATIONS FOR BACKFILL.
3. INSTALLATION OF S.L.C.P.P. STORM SEWER MUST COMPLY WITH M.D.O.T. SPECIFICATIONS (INCLUDING MIN. COVER AND 30 DAY MANDRILL, ETC.).
4. ROADWAY & UTILITY TRENCH BACKFILL MATERIAL SHALL MEET M.O.T. CLASS II SPECIFICATIONS.

WATERMAIN CONSTRUCTION

1. COORDINATE PART OF THE EXISTING WATERMAIN WITH KLSWA & VILLAGE OF DOUGLAS WATER AND SEWER DEPARTMENT.
2. HYDRANT WEEP HOLES SHALL BE OPEN UNLESS CONSTRUCTED BELOW WATER TABLE. MEGA LUGS OR RODDING IS REQUIRED FOR REACTION BACKING.
3. WATER SERVICES SHALL BE MARKED WITH A SECTION OF PVC PIPE AT THE CURB STOP & BOX (EXTENDING 3' ABOVE GROUND AT A MIN.).
4. WATER SERVICE FITTINGS SHALL BE COMPRESSION FITTINGS. CONTRACTORS SHALL PROVIDE ELECTRICAL CONTINUITY ON FITTINGS.
5. TESTING SHALL CONFORM TO KLSWA STANDARDS.
6. ALL CURB STOPS SHALL BE FURNISHED WITH STATIONARY ROODS.
7. ALL WATERMAIN IS TO BE DUCTILE IRON PIPE CLASS 52.

SANITARY SEWER CONSTRUCTION

1. SANITARY SEWER PIPE SHALL BE ASTM 3034, SDR 35 PVC OR SDR 26 PVC AS NOTED ON THE PLANS.
2. SANITARY SEWER CASTINGS SHALL BE SIMILAR TO E.I.J.W. 1120
3. SANITARY SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF THE KLSWA. (INCL. TESTING)
4. TEMP. PLUG TO BE PLACED IN EX. SEWER UNTIL NEW SEWER IS ACCEPTED BY KLSWA.
5. MANHOLES SHALL BE CASTED, BOOT TYPE WITH OUTER BITUMINOUS COATINGS.
6. THE END OF SEWER LATERALS SHALL BE MARKED WITH A 2" X 4" WOOD STAKE AND A STEEL RIGID, COVERED WITH A SECTION OF PVC PIPE EXTENDING 3' ABOVE GRADE.
7. A 6" PROPERTY LINE RISER SHALL BE PLACED AT THE END OF EACH LATERAL.



WESTSHORE PHASE 1B

Details & Specifications

DOUGLAS PROPERTY

Attention:
Kevin Einfeld

5510 Cascade Road SE, Suite 21
Grand Rapids, Michigan 49546
Phone (616) 458-8505

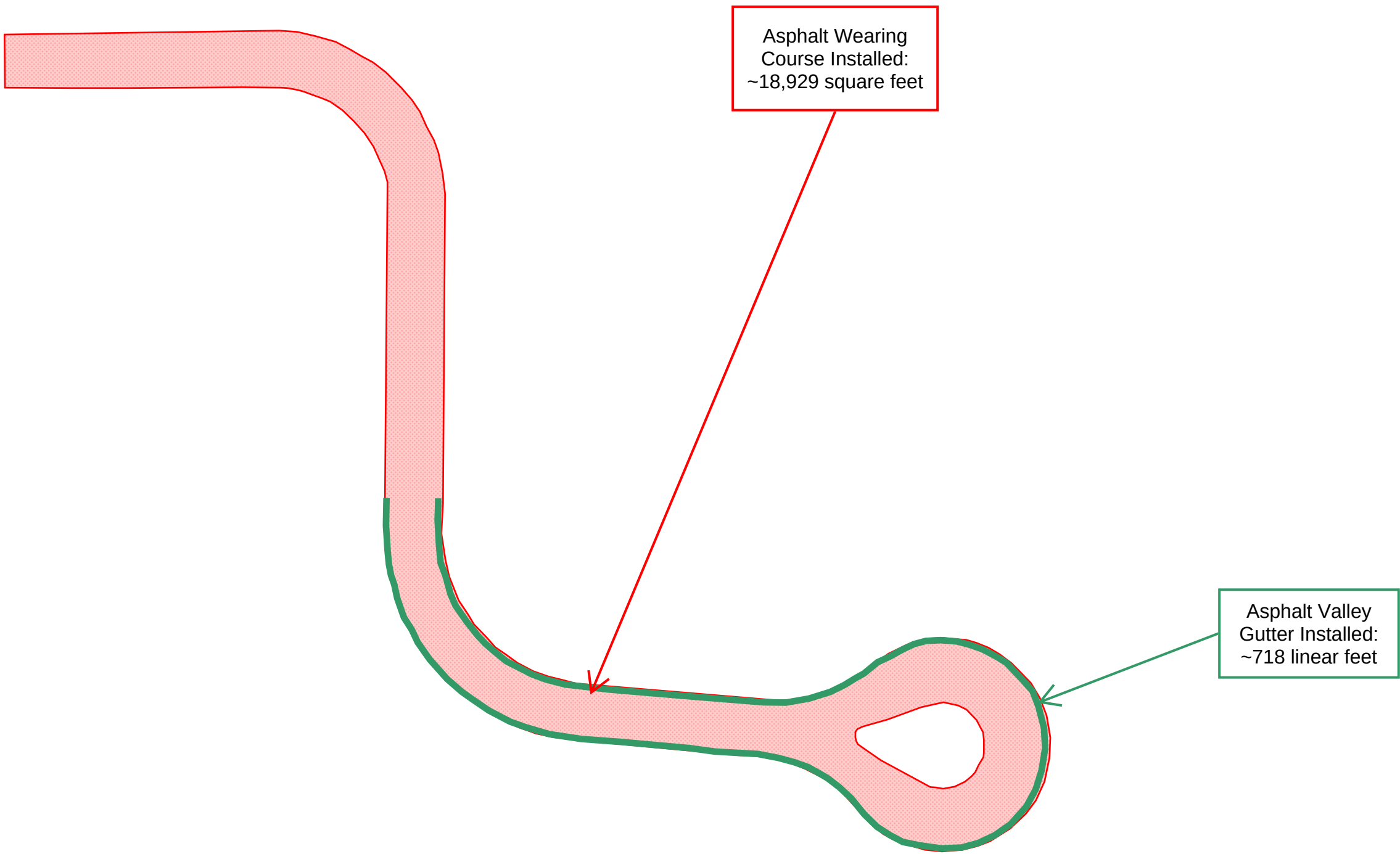
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	R/R	3	CITY ENGINEER	03/27/13
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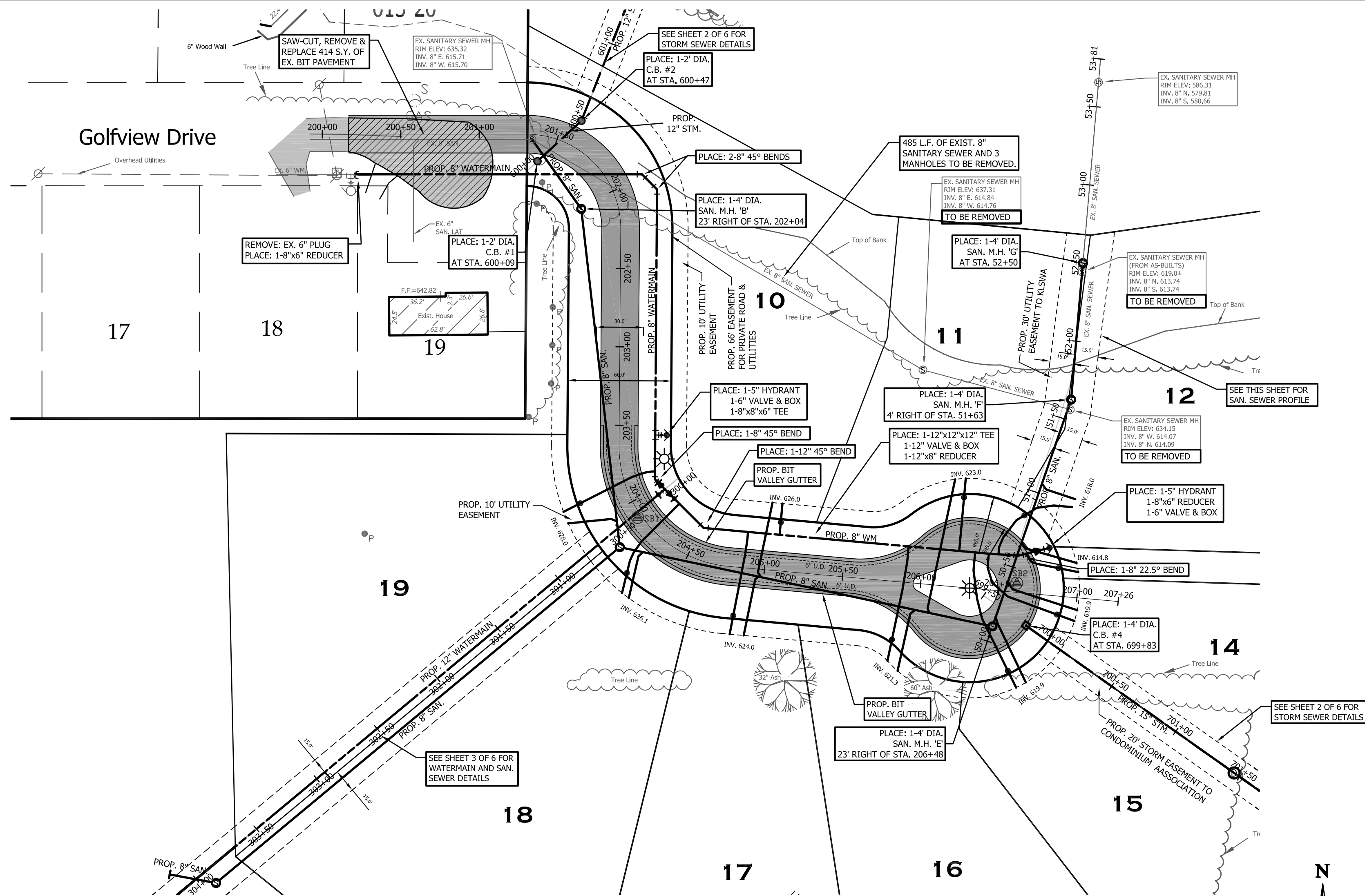
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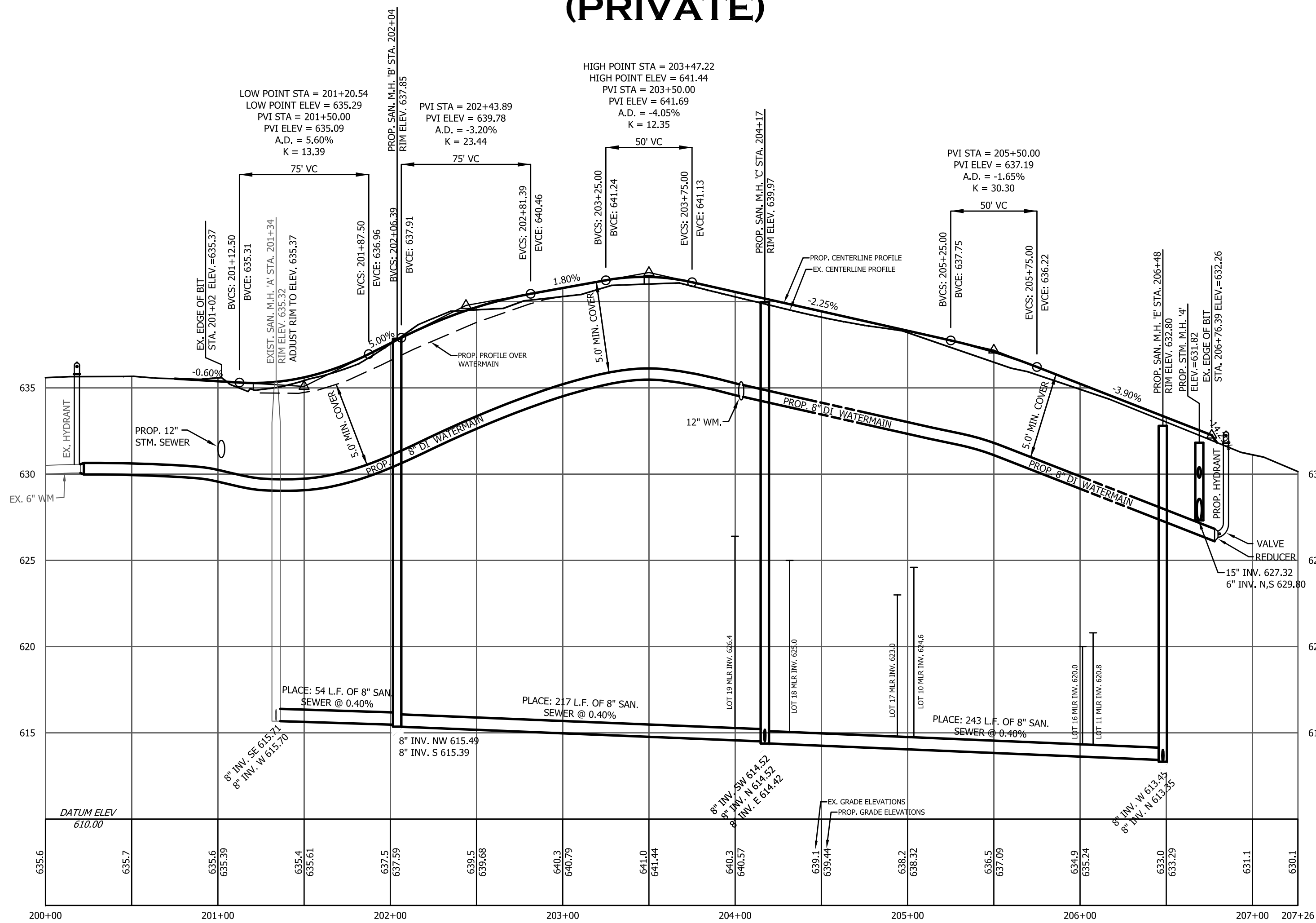
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GOLF VIEW DRIVE (PRIVATE)

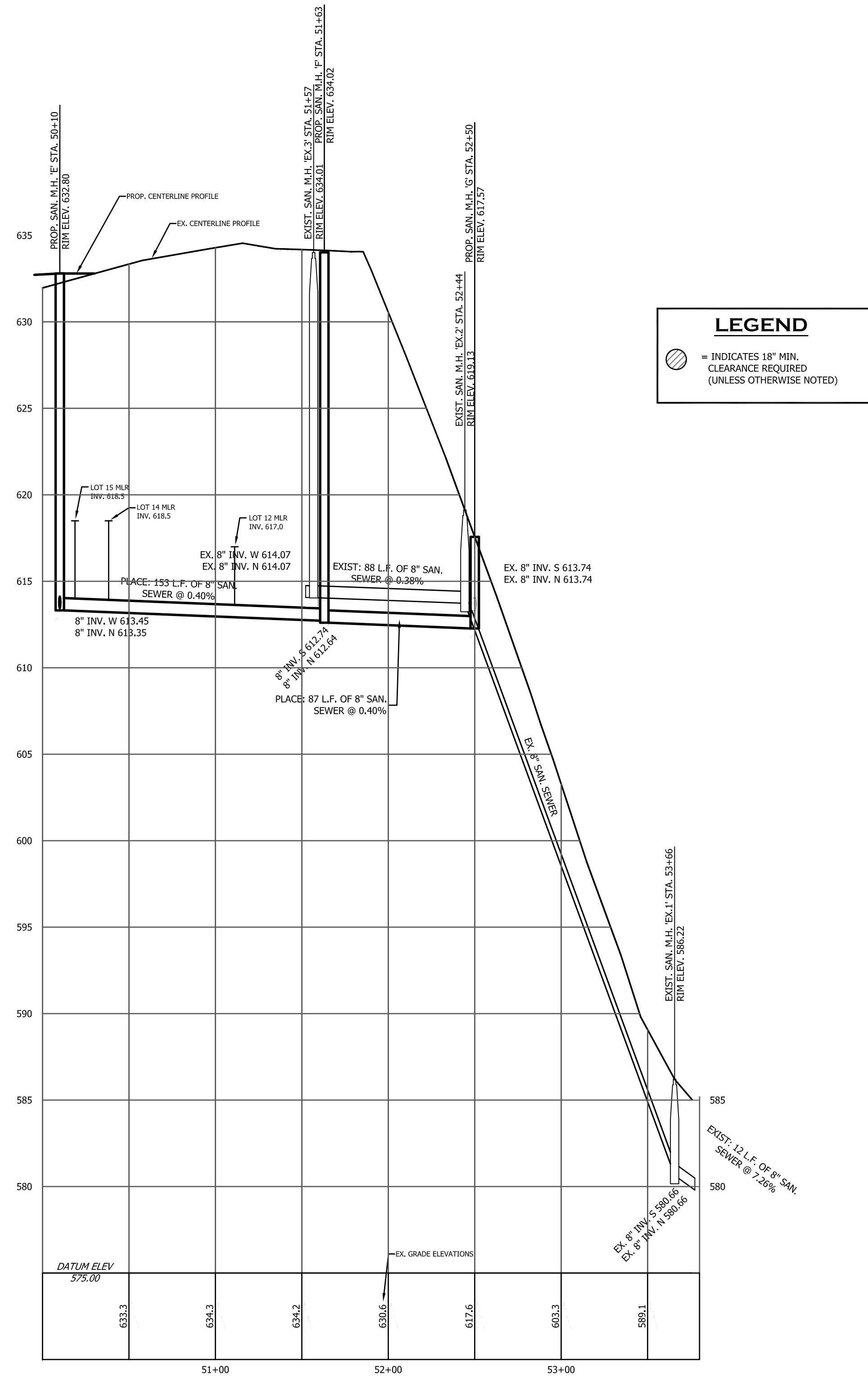


SB-1
Surface Elevation ~ 640
0.0' - 0.1' Topsoil - dark brown fine sand (12.0")
1.0' - 10.0' Sand - compact light brown fine (dry)
10.0' - 10.3' Clay - stiff brown silty
10.3' - 13.5' Clay - stiff gray silty
13.5' - 14.5' Silt - compact brown sandy (wet)
14.5' - 15.0' Clay - stiff gray silty
15.0' End of Boring (Elevation ~ 625)
Groundwater encountered 10.0 ft.

SB-2
Surface Elevation ~ 633
0.0' - 0.1' Topsoil - dark brown fine sand (12.0")
1.0' - 9.5' Sand - compact light brown (wet below 4.0 feet)
9.5' - 10.0' Clay - stiff brown silty
10.0' - 11.0' Clay - stiff gray silty
11.0' - 14.0' Silt - stiff brown clayey with occasional clay seams (wet)
14.0' - 15.0' Silt - stiff gray clayey (wet)
15.0' End of Boring (Elevation ~ 618)
Groundwater encountered 4.5 ft.

SB-4
Surface Elevation ~ 624
0.0' - 1.0' Topsoil - dark brown fine sand (12.0")
1.0' - 2.2' Sand - compact light brown fine with a trace of clay (wet)
2.2' - 9.5' Clay - firm to stiff brown silty
9.5' - 14.0' Sand - compact light brown fine with silt and clay seams (wet)
14.0' - 15.0' Clay - stiff gray silty
15.0' End of Boring (Elevation ~ 609)
Groundwater encountered 1.5 ft.

PROPOSED SANITARY PROFILE



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= INDICATES 18" MIN. CLEARANCE REQUIRED (UNLESS OTHERWISE NOTED)

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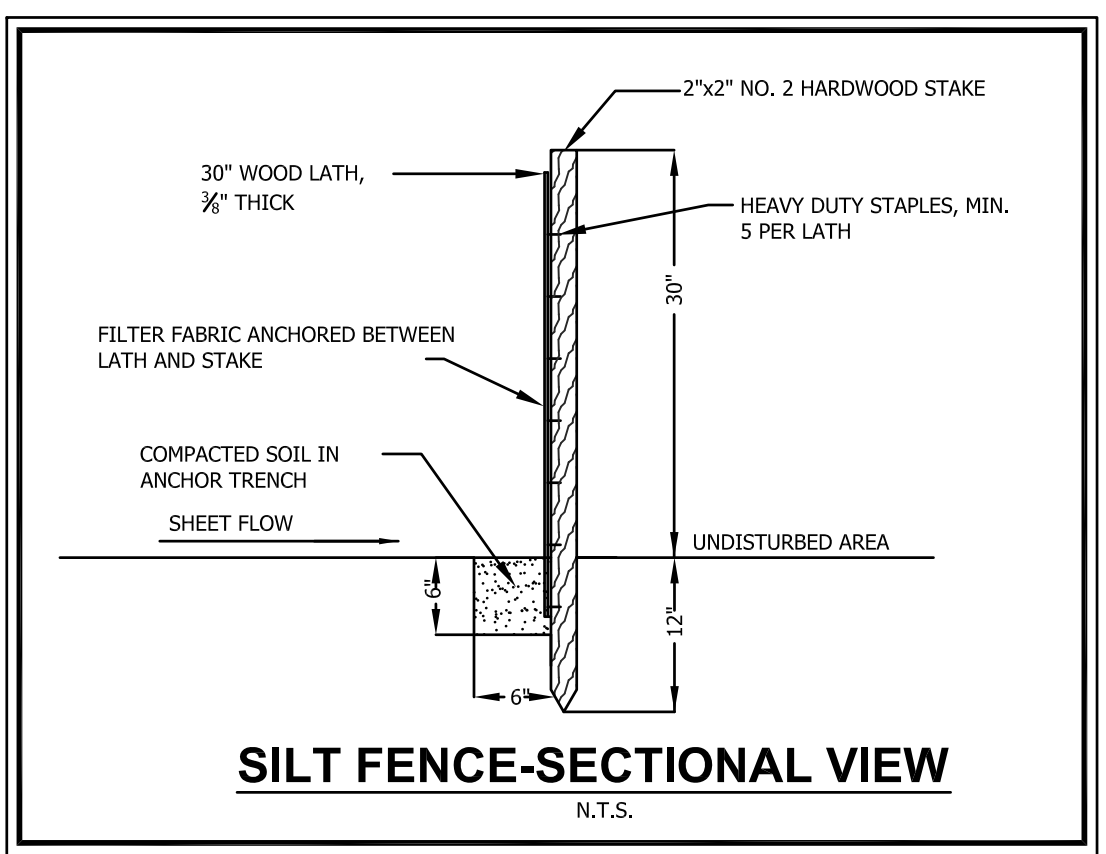
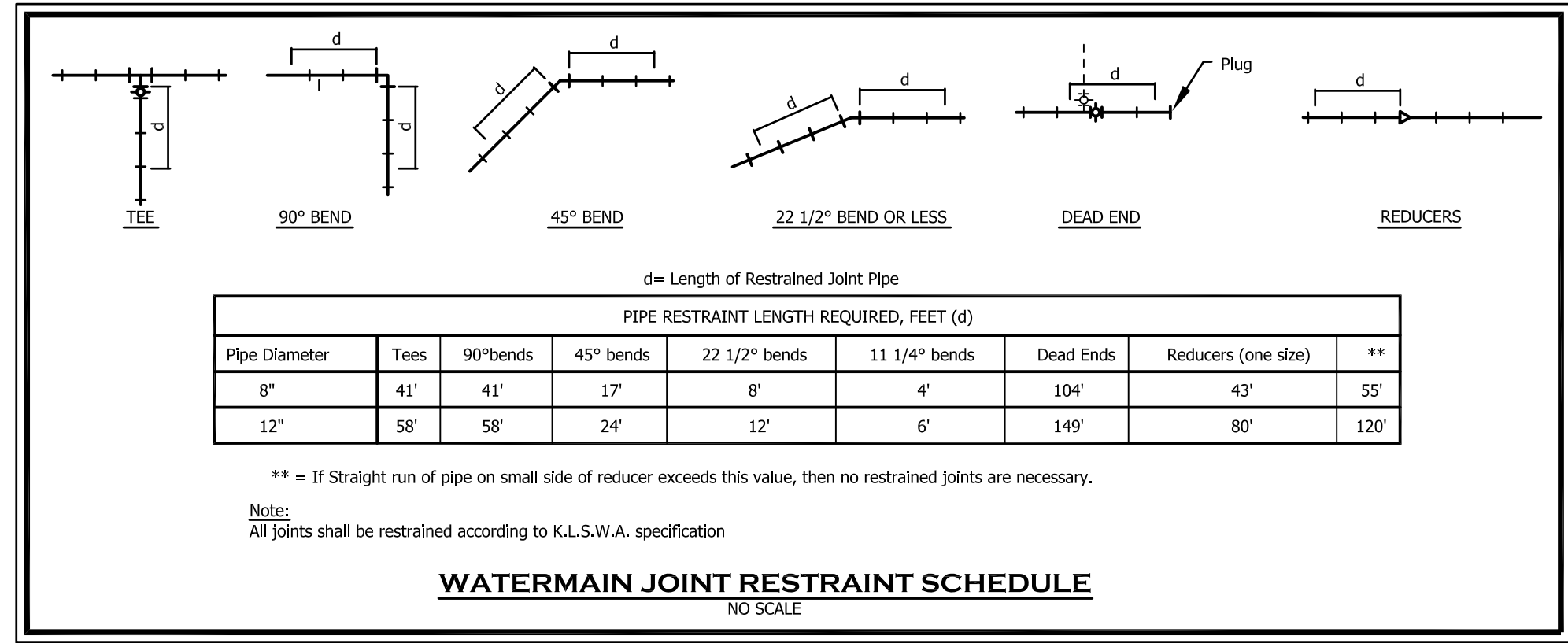
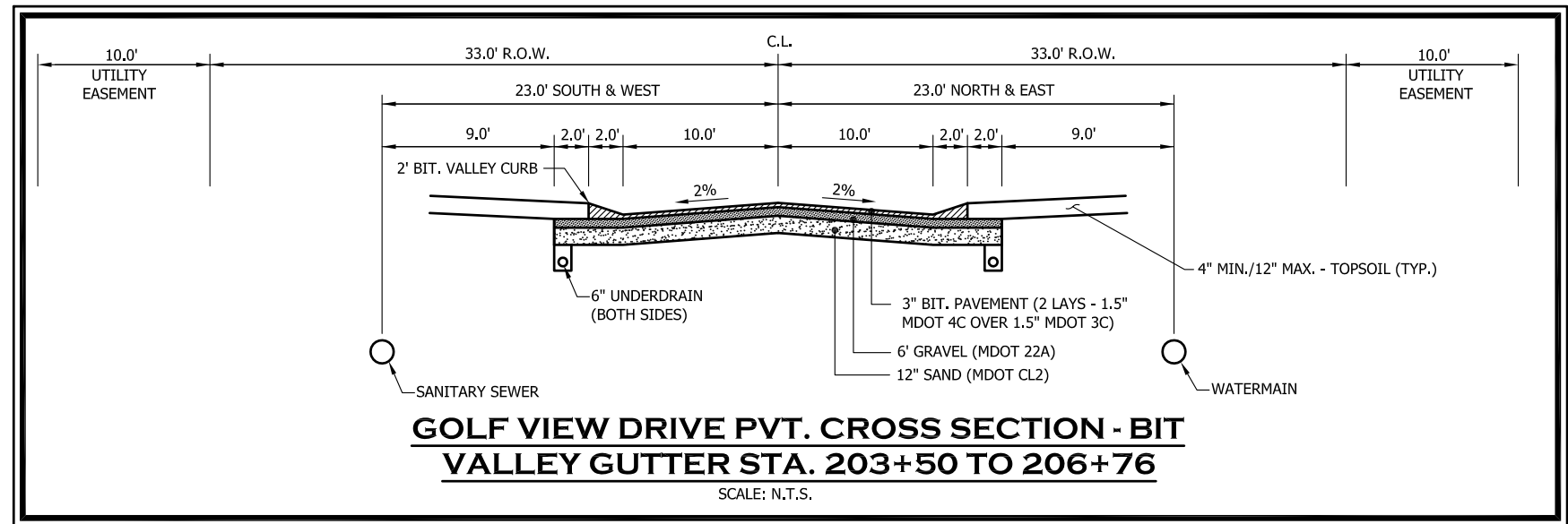
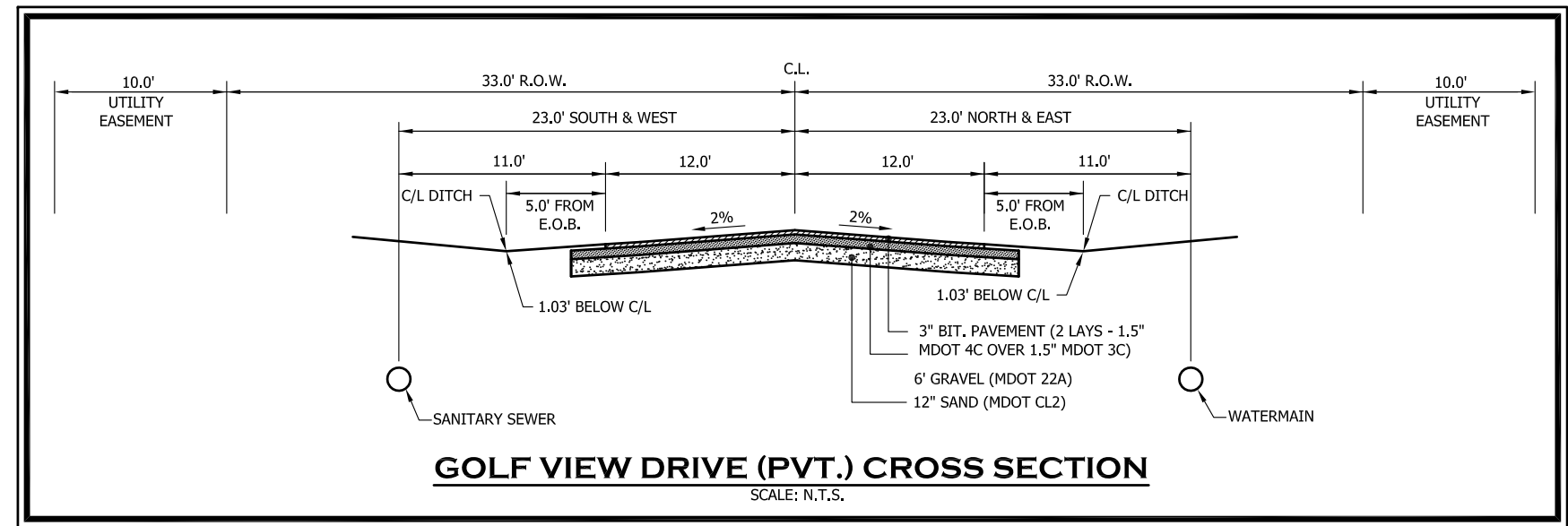
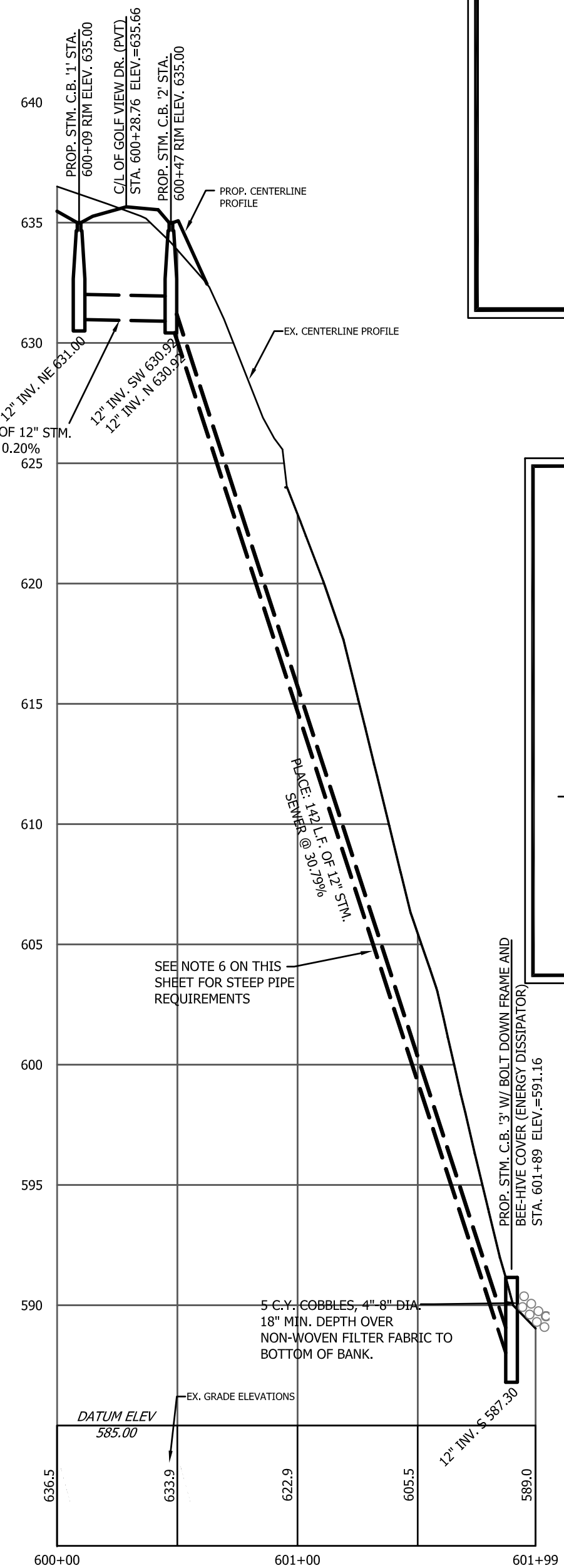
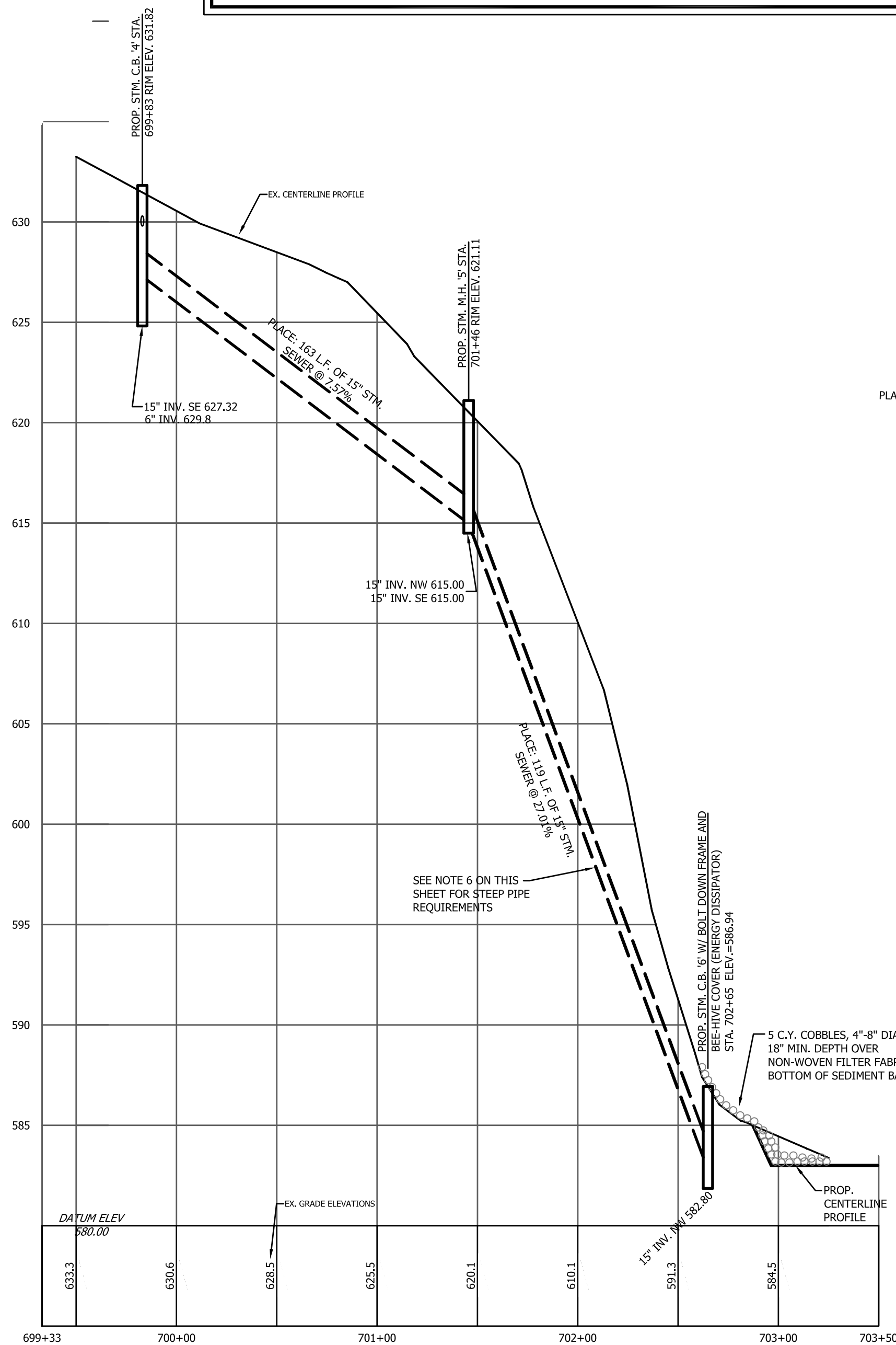
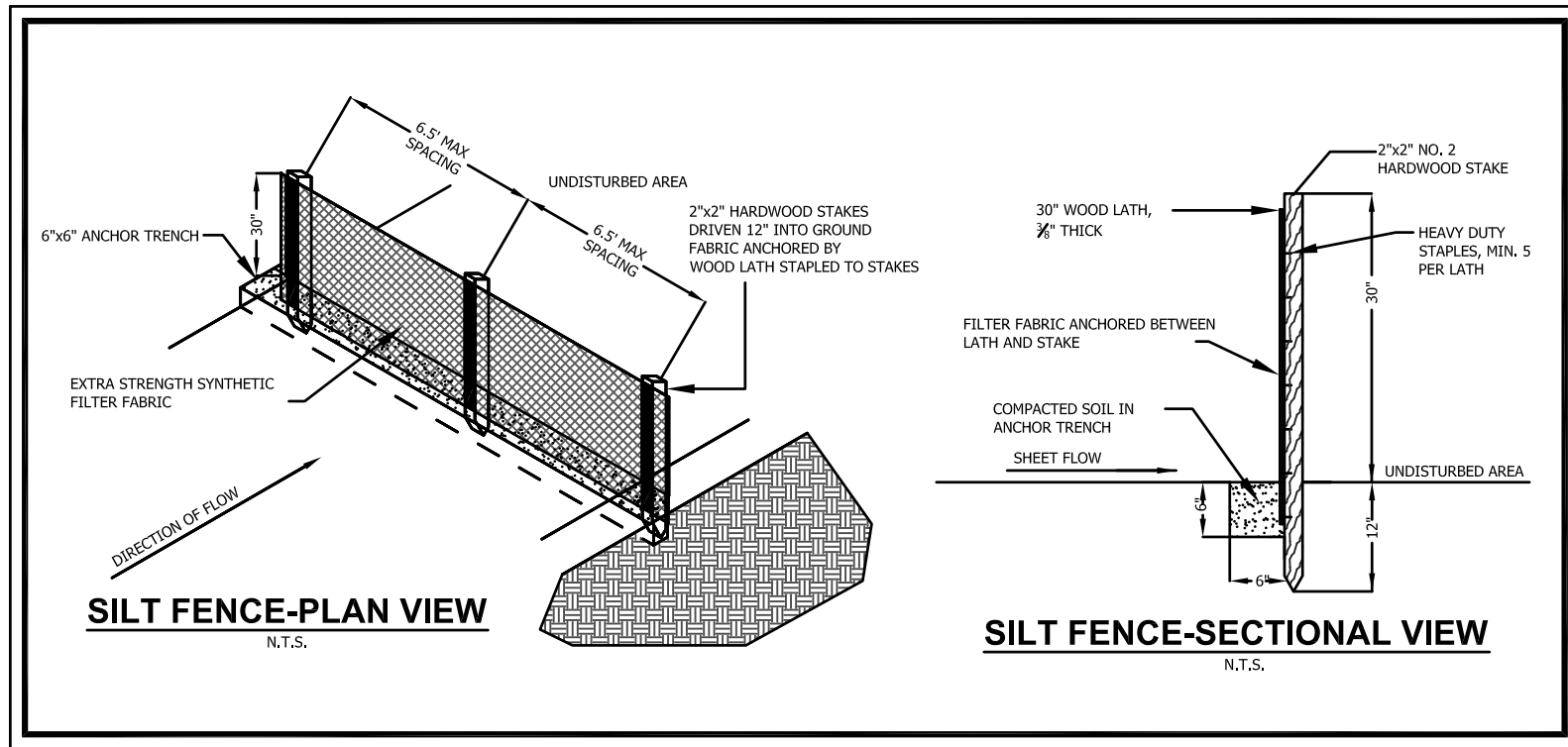
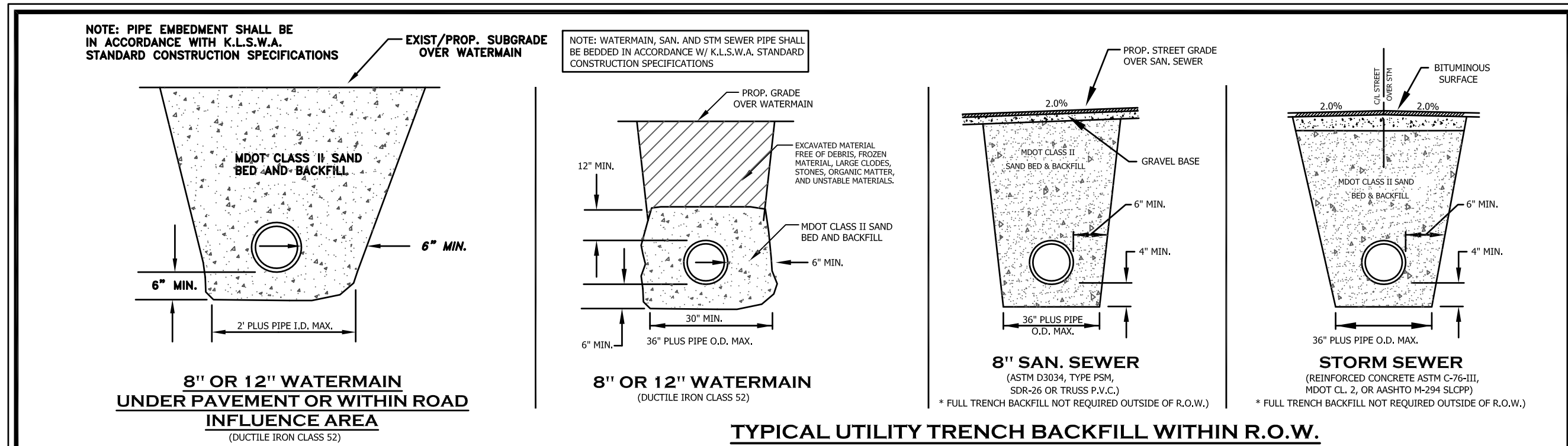
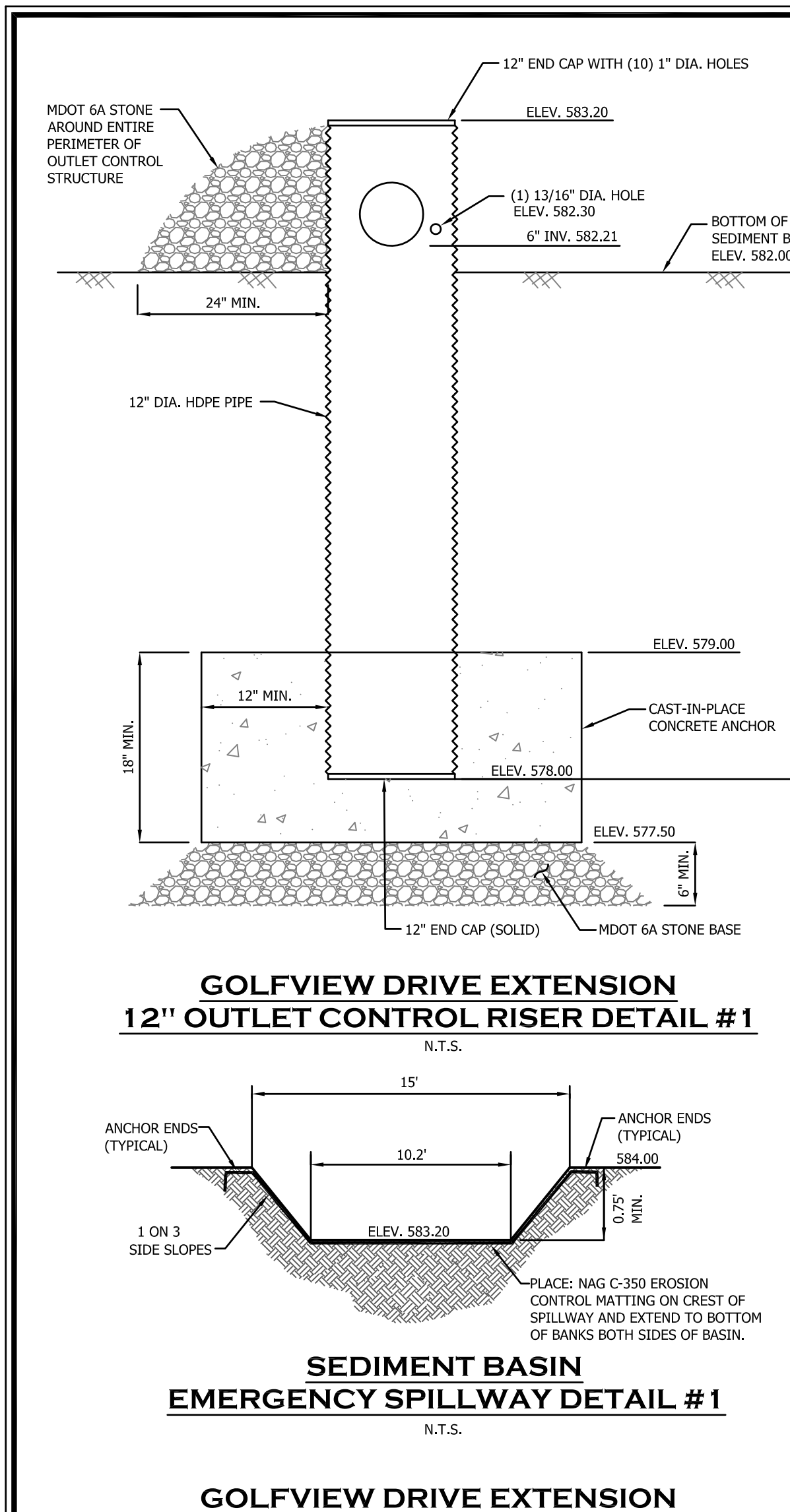
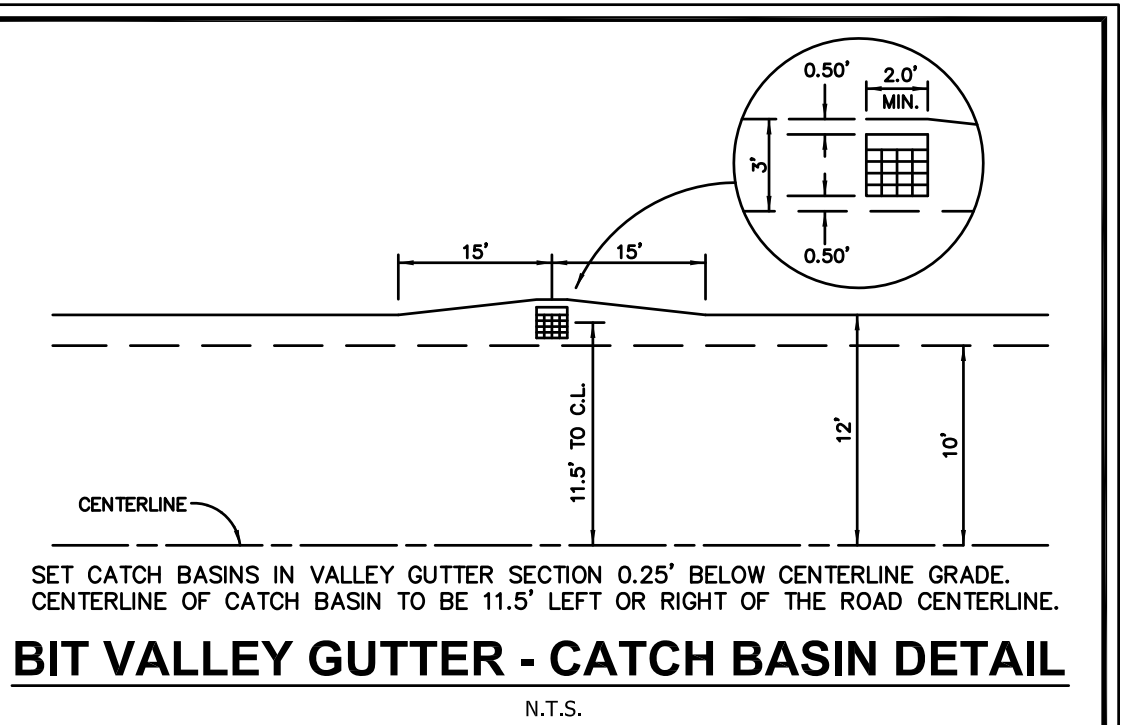
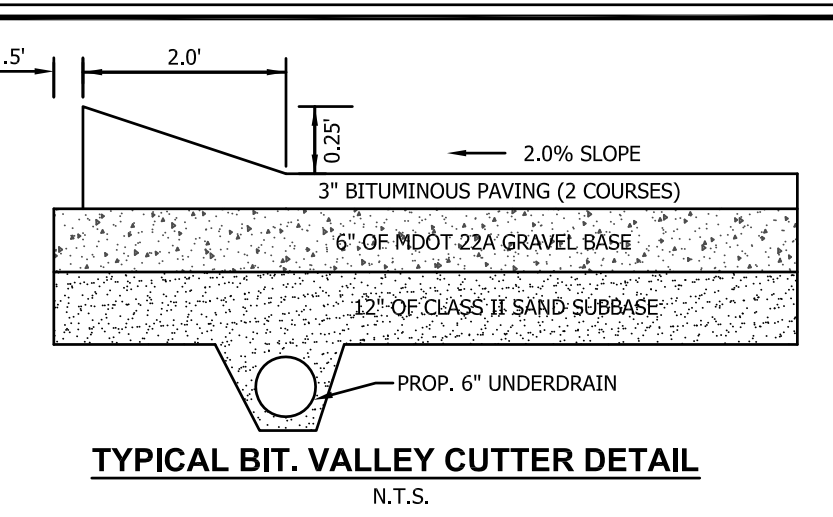
**DOUGLAS PROPERTY
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Attention:
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RJB	07/12/13	4	FOR CONSTRUCTION	07/12/13			
		5					
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		7					
		8					

project no.:
13200132
C-402
sheet no.:
5 OF 6
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NOTES

1. TOPSOIL STRIPPING, PIPE EXCAVATION, PIPE BACKFILL & TOPSOIL REPLACEMENT ARE INCIDENTAL TO THE WORK.
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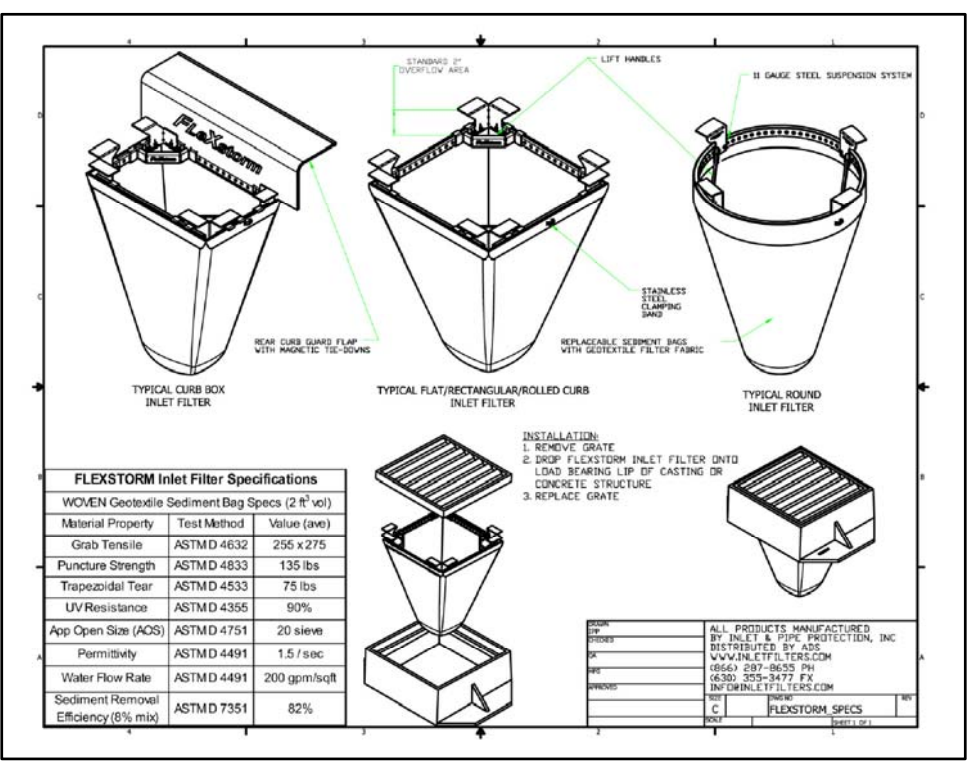


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 3. INSTALLATION OF S.L.C.P.; STORM SEWER MUST COMPLY WITH "M.D.O.T." SPECIFICATIONS (INCLUDING MIN. COVER AND 30' DAY MANDRILL, ETC.).
 4. ROADWAY & UTILITY TRENCH BACKFILL MATERIAL SHALL MEET MDOOT CLASS II SPECIFICATIONS.
 5. TESTING SHALL CONFORM TO KLSWA STANDARDS.
 6. ALL CURB STOPS SHALL BE FURNISHED WITH STATIONARY RODS.
 7. ALL WATERMAIN IS TO BE DUCTILE IRON PIPE CLASS 52.
 8. WATER SERVICE FITTINGS SHALL BE COMPRESSION FITTINGS. CONTRACTORS SHALL PROVIDE ELECTRICAL CONTINUITY ON FITTINGS.
 9. WATER SERVICES SHALL BE MARKED WITH A SECTION OF PVC PIPE AT THE CURB STOP & BOX (EXTENDING 3' ABOVE GROUND AT A MIN.).
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 16. TEMP. PLUG TO BE PLACED IN EX. SEWER UNTIL NEW SEWER IS ACCEPTED BY KLSWA.
 17. MANHOLES SHALL BE PRECAST, BOOT TYPE WITH OUTER BITUMINOUS COATING.
 18. THE END OF SEWER LATERALS SHALL BE MARKED WITH A 2"x2" WOOD STAKE AND A STEEL REOD, COVERED WITH A SECTION OF PVC PIPE EXTENDING 3' ABOVE GRADE.
 19. A 6" PROPERTY LINE RISER SHALL BE PLACED AT THE END OF EACH LATERAL.



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Details & Specifications

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03/27/13	CITY ENGINEER	3	RJB	03/27/13	3	03/27/13	03/27/13
07/12/13	FOR CONSTRUCTION	4	RJB	07/12/13	4	07/12/13	07/12/13
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project no.: 13200132

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sheet no.: 6 OF 6

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