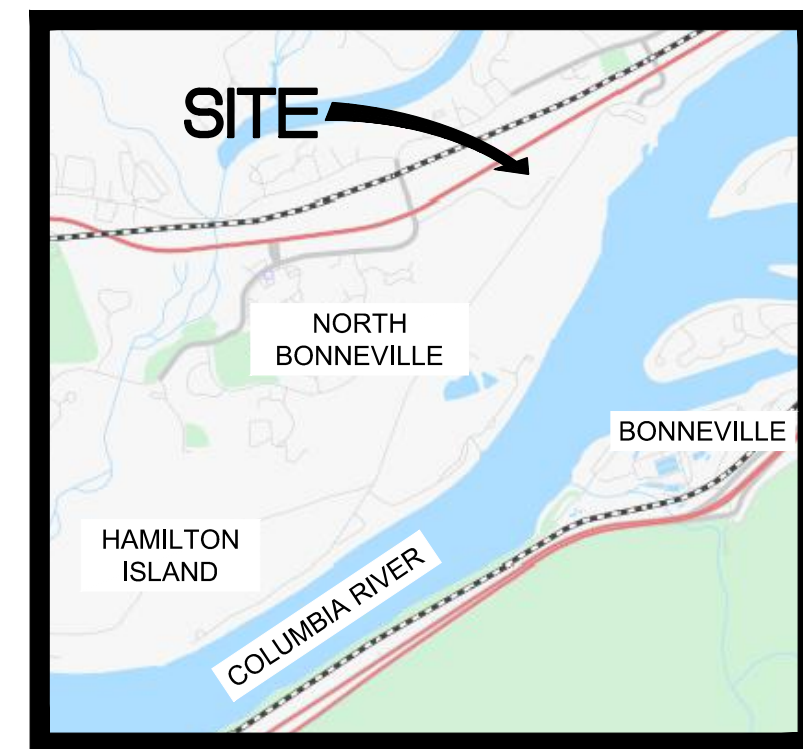
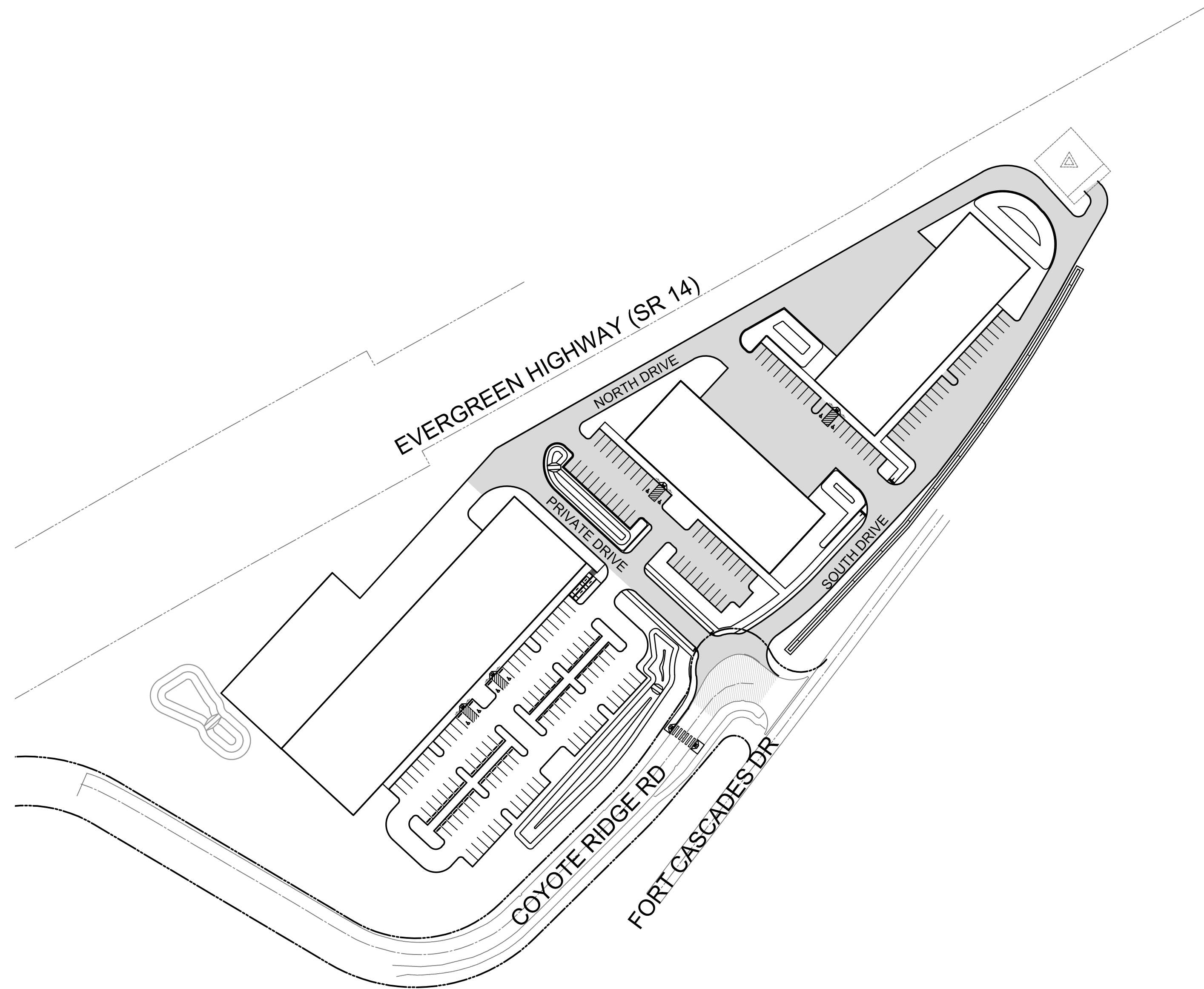


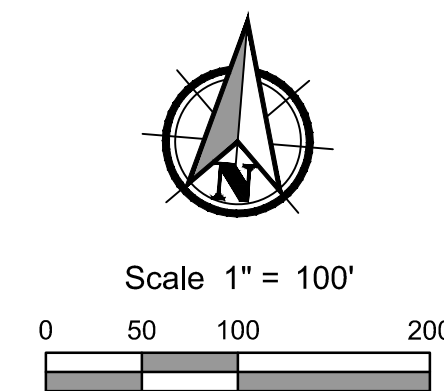
CASCADES BUISINESS PARK INFRASTRUCTURE IMPROVEMENTS - PHASE 1

SE 1/4 OF SEC 20, T. 2 N., R. 7 E., W.M.



VICINITY MAP
NOT TO SCALE

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SHT NO.	SHT ID.	SHT TITLE
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3	G03	GENERAL NOTES
4	EG01	EXISTING CONDITIONS AND SITE PREP
5	EC01	EROSION CONTROL PLAN
6	EC02	EROSION CONTROL PLAN
7	EC03	EROSION CONTROL DETAILS
8	EC04	EROSION CONTROL DETAILS
9	GR01	GRADING PLAN
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11	ST01	TYPICAL SECTIONS
12	C01	STREET AND STORM PLAN
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14	C03	PRIVATE DRIVE STORM PROFILE
15	C04	SOUTH DRIVE STORM PROFILE
16	C05	NORTH DRIVE STORM PROFILE
17	C06	BIOFILTRATION SWALE PROFILE
18	C07	BIOFILTRATION SWALE PROFILE
19	UT01	SANITARY SEWER AND WATER PLAN AND PROFILE
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22	D01	MISCELLANEOUS DETAILS
23	D02	MISCELLANEOUS DETAILS
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26	D05	STANDARD DETAILS
27	IL01	PHOTOMETRIC ANALYSIS
28	IL02	SITE LIGHTIN DETAILS (ADD ALT)



CONTACT INFORMATION

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North Bonneville, WA

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Base Survey Control:

Vertical Datum:

Elevations shown hereon are navd88 derived from trimble rx post-processing service on temporary benchmark no. 1 shown hereon.

Horizontal Datum (basis of bearings):

Washington state plane coordinate system, nad 83 (2011), south zone 4602, us survey feet, derived from trimble rx post-processing service, distances shown hereon are ground and have been scaled by a combined grid to ground scale of 0.999951262 about temporary benchmark no. 1 shown hereon.

**PUBLIC WORKS - WATER
& SEWER**
P.O. BOX 7 NORTH BONNEVILLE, WA 98639
509-427-8182
EMERGENCY: 541-400-8437

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COVERSHEET FOR:
CASCADES BUSINESS PARK INFRASTRUCTURE IMPROVEMENTS - PHASE 1
A SITE LOCATED IN THE CITY OF NORTH BONNEVILLE, WASHINGTON



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SHEET **1** OF **28**

Filename: I:\Projects\78260\78260-000\Civil\CAD\Working\Sheets\project-01\78260-000_C02-03.dwg User: Allison Timboe Layout Tab: G02 CAD Plot Date/Time: 4/20/2026 10:47:22 AM

PROPOSED SYMBOL LEGEND	
Proposed Sanitary Cleanout	
Proposed Sanitary Manhole	
Proposed Catch Basin	
Proposed Storm Manhole	
Proposed Water Valve	
Proposed Water Bend Tee W/ Valve	
Proposed Water Bend Tee W/ TB	
Proposed Water Bend X	
Proposed Water Temporary Blowoff	
Proposed Water Reducer	
Proposed Water Thrust Block	
Proposed Fire Hydrant	
Proposed Street Light	
Proposed Road Sign	
Proposed Flow Arrow	
Proposed Inlet Protection Pillow	
Proposed Gravel Construction Entrance	

PROPOSED LINETYPE LEGEND	
Proposed Sanitary Lateral	
Proposed Sanitary Sewer Pipe	
Proposed Storm Pipe	
Proposed Storm Rain Drain	
Proposed Storm Under Drain	
Proposed Water Lateral	
Proposed Water Pipe	
Proposed Building	
Proposed Centerline	
Proposed Contour	
Proposed Curb & Gutter	
Proposed Easement	
Proposed End of Pavement	
Proposed Erosion Control Filter Fabric Fence	
Proposed Fence	
Proposed Flow Line	
Proposed Lot Line	
Proposed Paint Stripe	
Proposed Property Line	
Proposed Right-Of-Way	
Proposed Sawcut Line	
FUTURE LINETYPE LEGEND	
Future Centerline	
Future Contour	
Future Curb	
Future Lot Line	
Future Paint Stripe	
Future Right-Of-Way	
Future Sidewalk	

EXISTING SYMBOL LEGEND	
Existing Area Drain	
Existing Catch Basin	
Existing Sign	
Existing Electrical Pedestal	
Existing Fire Hydrant	
Existing Flow Arrow	
Existing Power Riser	
Existing Project Bench Mark	
Existing Sanitary Manhole	

EXISTING LINETYPE LEGEND	
Existing Sanitary Sewer Pipe	
Existing Storm Sewer Pipe	
Existing Water Pipe	
Existing Water Lateral	
Existing Building	
Existing Centerline	
Existing Contour	
Existing Curb	
Existing Curb & Gutter	
Existing Fence	
Existing Fiber Optic Line	
Existing Flow Line	
Existing Gas Line	
Existing Gravel Road	
Existing Lot Line	
Existing Over Head Power Line	
Existing Paint Stripe	
Existing Property Line	
Existing Quarter Section	
Existing Right-Of-Way	
Existing Telephone Line	
Existing Electrical Line	
Existing Utility Easement	
Existing Wall	

STANDARD ENGINEERING ABBREVIATIONS							
A		E		N		S	
Ac	Acres	E	East	N	North	SF	Square Feet
AC	Asphalt Concrete	EG	Extg Ground	NA	Not Applicable	SHLDR	Shoulder
AD	Area Drain	EL	Elevation	No or #	Number	SHT	Sheet
ADS	Advanced Drainage Systems	ELEC	Electric	NE	Northeast	SLV	Sleeve
		EOP	End Of Project	NIC	Not In Contract	SPEC	Specification
APPD	Approved	EP	Edge Of Pavement	NOM	Nominal	SQ	Square
ASSY	Assembly	ER	End Curb Return	NTS	Not to Scale	SS	Sanitary Sewer
ASTM	American Society for Testing & Materials	ESMT	Easement	NW	Northwest	S/S	Stainless Steel
		EVC	End Vertical Curve			SSMH	Sanitary Sewer Manhole
AVE	Avenue	EXTG	Existing	O			
				OC	On Center	ST	Steel
				OD	Outside Diameter	ST	Street
BC	Back Of Curb	FF	Finished Floor Elevation	OHP	Overhead Power	ST W	Storm Water
BF	Butterfly			OZ	Ounce	STA	Station
BLVD	Boulevard	FG	Finish Grade			STD	Standard
BM	Benchmark	FH	Fire Hydrant	P		SVC	Service
BO	Blowoff	FL	Flow Line	PAVT	Pavement	SW or S/W	Sidewalk
BOP	Beginning Of Project	FLG	Flange	PC	Point Of Curvature	SW	Southwest
		FM	Force Main	PCC	Point Of Compound Curvature	SYM	Symbol
BOT	Bottom	FPT	Female pipe tapered	PCC	Portland Cement Concrete		
BR	Begin Curb Return	FT	Foot/Feet	PE	Plain End	T	Tangent
BVC	Begin Vertical Curve			PERC	Percolation	T&G	Tongue and groove
BW	Bottom Of Wall	G		PERF	Perforated	TA	Top of Asphalt
C		G	Natural Gas	PH	Phase	TB	Thrust Block
C&G	Curb And Gutter	GA	Guage	PI	Point Of Intersection	TBC	Top Back of Curb
CAT	Category	GND	Ground	PKWY	Parkway	TBM	Temp Benchmark
CB	Catch Basin	GRD	Grade	PL	Place	TC	Top Of Curb
CCI	Combination Curb Inlet	GV	Gate Valve	PL	Property Line	TEL	Telephone
CEM	Cement	H		PL	Point Of Connection	TEMP	Temporary
CF	Cubic Feet	HDPE	High Density Polyethylene	POC	Point Of Connection	TFC	Top Face of Curb
CHK	Check			PP	Power Pole	TOP	Top Of Manhole Rim Elevation
CI	Curb Inlet	HMA	Hot Mix Asphalt	PRC	Point Of Reverse Curve	TOPO	Topography
CIP	Cast In Place	HORIZ	Horizontal	PRELIM	Preliminary	TP	Test Pit
CIR	Circle	HW	High Water Elevation	PRVC	Point Of Reverse Vert Curve	TSW	Top of Sidewalk
CL	Centerline	HWY	Highway	PSI	Pound per Square Inch	TV	Cable Television
CL	Class	HYD	Hydrant	PT	Point	TW	Top Of Wall
CM/SEC	Centimeters per Second			PT	Point	TYP	Typical
CMP	Corrugated Metal Pipe	I		PT	Point Of Tangency	U	
		ID	Inside Diameter	PVC	Polyvinylchloride	UGP	Underground Power
CO	Cleanout	IE	Invert Elevation	PVI	Point Of Vertical Intx	UTIL	Utility
COMB	Combination	IN/HR	Inches per Hour				
COMP	Compaction	INTX	Intersection	R		V	
CONC	Concrete	INV	Invert	R	Radius	VC	Vertical Curve
CONST	Construction	IPS	Iron Pipe Size	RAD	Radius	VERT	Vertical
CPE	Corrugated Polyethylene	IRR	Irrigation Water	RD	Road		
CSBC	Crushed Surfacing Base Course	L		REINF	Reinforced	W	
		L	Length	REQD	Required	W	West
CT	Court	LAT	Lateral	REV	Revision	W/	With
CY	Cubic Yard	LBS	Pounds	ROW	Right Of Way	W/O	Without
D		LF	Linear Feet	RR	Railroad	WL	Water Line
Δ	Delta	LT	Left	RT	Right	WM	Water Meter
D	Depth	LUM	Luminaire				
DB	Drain Basin			S		Y	
DBL	Double	M					
DCVA	Double Check Valve Assembly	MAX	Maximum	S	South	YD	Yard
DEMO	Demolition	MB	Mail Box	S=	Slope Equals		
DET	Detail	MFR	Manufacturer	SCHED	Schedule		
Ø or DIA	Diameter	MH	Manhole	SD	Storm Drain		
		MIL	Millimeter	SDMH	Storm Drain Manhole		
DI or DIP	Ductile Iron Pipe	MIN	Minimum	SE	Southeast		
DR	Drive	MISC	Miscellaneous	SECT	Section		
DS	Downspout	MJ	Mechanical Joint				
DW	Drywell						
DWY	Driveway						

HATCH LEGEND	
Proposed Crushed Surfacing Base Course (CSBC)	
Proposed Grind and Inlay	

LEGEND AND ABBREVIATIONS FOR:

CASCADES BUSINESS PARK INFRASTRUCTURE IMPROVEMENTS - PHASE 1

A SITE LOCATED IN THE CITY OF NORTH BONNEVILLE, WASHINGTON



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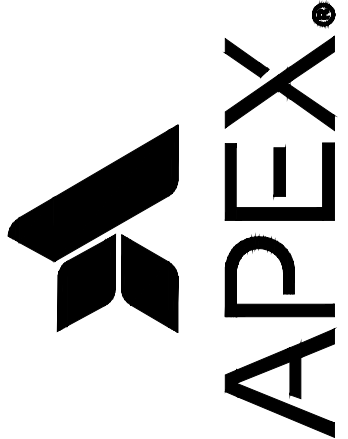
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SHEET 2 OF 28

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File name: I:\Projects\78260\78260-000\Civil\CAD\Working Sheets\project-01\78260-000_C02-03.dwg Layout Tab: G03 User: Allison Timboe CAD Plot Date/Time: 4/20/2026 10:47:31 AM

GENERAL NOTES:

1.

SURVEY PERFORMED BY S&f LAND SERVICES ON JUNE 6, 2023.
2.

THE VERTICAL DATUM: ELEVATIONS SHOWN HEREON ARE NAVD88
3.

HORIZONTAL DATUM (BASIS OF BEARINGS): WASHINGTON STATE PLANE COORDINATE SYSTEM, NAD 83.
4.

CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS AND DEPTHS PRIOR TO CONSTRUCTION. A MINIMUM OF TWO FULL BUSINESS DAYS PRIOR TO BEGINNING OF CONSTRUCTION, THE CONTRACTOR SHALL CALL 811 (UTILITY NOTIFICATION CENTER) FOR LOCATION MARK-UP OF EXISTING UTILITIES. NOTIFY ENGINEER OF ANY DISCREPANCIES.
5.

ALL CONSTRUCTION AND MATERIALS, UNLESS OTHERWISE SPECIFIED, SHALL CONFORM TO THE LATEST STANDARDS AND PRACTICES OF THE CITY OF NORTH BONNEVILLE AND THE 2026 EDITION OF THE WSDOT STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION.
6.

THE CONTRACTOR SHALL HAVE A COPY OF THESE PLANS, PROJECT SPECIFICATIONS, ADDENDA, CHANGE ORDERS AND SWPPP ON THE JOB SITE AT ALL TIMES. THE CONTRACTOR SHALL MAINTAIN AND UPDATE A FULL-SIZE SET OF AS-BUILT'S AND THE SWPPP.
7.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL CONSTRUCTION EASEMENTS AND PERMITS NECESSARY TO PERFORM THE WORK.
8.

AT THE END OF EACH DAY, THE CONTRACTOR SHALL CLEAN UP THE PROJECT AREA AND LEAVE IT IN A NEAT AND SECURED MANNER. UPON COMPLETION, THE CONTRACTOR SHALL LEAVE THE PROJECT FREE OF DEBRIS AND UNUSED MATERIAL.
9.

IF EXISTING CURB AND SIDEWALK DESIGNATED TO REMAIN ARE DAMAGED, THE CURB AND/OR SIDEWALK SHALL BE REMOVED AND REPLACED TO THE ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
10.

ALL LAWN AND VEGETATED AREAS DISTURBED WILL BE RESTORED TO ORIGINAL CONDITION, ANY DISTURBANCE OR DAMAGE TO OTHER PROPERTY ON ADJACENT PARCELS OR IN THE PUBLIC RIGHT OF WAY SHALL ALSO BE REPAIRED OR RESTORED TO ORIGINAL CONDITION.
11.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE INTEGRITY OF ADJACENT UTILITIES WHICH MAY INCLUDE, BUT ARE NOT LIMITED TO, WATER, SANITARY SEWER, STORMWATER, POWER, TELEPHONE, CABLE TV, GAS, IRRIGATION, AND STREET LIGHTING. THE CONTRACTOR SHALL
12.

ALL TRENCHING EXCAVATION AND PIPE INSTALLATION SHALL CONFORM TO THE MOST CURRENT APWA\WSDOT STANDARD SPECIFICATIONS SECTION 7-08.3(1) AND SPECIAL PROVISIONS. ALL EXCESS MATERIAL FROM THE TRENCH EXCAVATION SHALL BE DISPOSED OF AT AN APPROVED SITE.
13.

SHORING IS REQUIRED FOR ALL TRENCHES IN EXCESS OF 48-IN DEPTH.
14.

PROTECTION OF THE ENVIRONMENT: NO CONSTRUCTION RELATED ACTIVITIES SHALL CONTRIBUTE TO THE DEGENERATION OF THE ENVIRONMENT, ALLOW MATERIAL TO ENTER SURFACE OR GROUND WATERS, OR ALLOW PARTICULATE EMISSIONS TO ENTER THE ATMOSPHERE, WHICH EXCEED STATE OR FEDERAL STANDARDS. ANY ACTION THAT POTENTIALLY ALLOWS A DISCHARGE TO STATE WATERS MUST HAVE PRIOR APPROVAL OF THE STATE OF WASHINGTON, DEPARTMENT OF ECOLOGY. IT IS CRITICAL THAT NO SEDIMENT BE ALLOWED TO MIGRATE FROM THE CONSTRUCTION AREA OR DURING TRANSPORTATION OF EQUIPMENT AND MATERIALS TO THE WORK AREA. THE CONTRACTOR SHALL BE FAMILIAR WITH THE CITY OF NORTH BONNEVILLE MUNICIPAL CODE. A STOP WORK ORDER WILL BE ISSUED UPON ANY OCCURRENCE OF SEDIMENT TRANSPORT, TRACKING, OR OTHER RELATED PROBLEMS. VIOLATIONS OF THE MUNICIPAL CODE AND THE CLEAN WATER ACT ARE SUBJECT TO ENFORCEMENT ACTIONS AND FINES BY THE CITY OF NORTH BONNEVILLE AND THE DEPARTMENT OF ECOLOGY.
15.

INADVERTENT DISCOVERY PLAN: IN THE EVENT ANY HUMAN ARCHAEOLOGICAL OR HISTORIC MATERIALS ARE ENCOUNTERED DURING PROJECT ACTIVITY, WORK IN THE IMMEDIATE AREA (INITIALLY ALLOWING FOR A 100' BUFFER; THIS NUMBER MAY VARY BY CIRCUMSTANCE) MUST STOP AND THE FOLLOWING ACTIONS TAKEN:

A.

ADVISE OWNER; AND

B.

IMPLEMENT REASONABLE MEASURES TO PROTECT THE DISCOVERY SITE, INCLUDING ANY APPROPRIATE STABILIZATION OR COVERING; AND

C.

TAKE REASONABLE STEPS TO ENSURE THE CONFIDENTIALITY OF THE DISCOVERY SITE; AND,

D.

TAKE REASONABLE STEPS TO RESTRICT ACCESS TO THE SITE OF DISCOVERY.

E.

THE PORT WILL NOTIFY THE CONCERNED TRIBES AND ALL APPROPRIATE COUNTY, STATE, AND FEDERAL AGENCIES, INCLUDING THE DEPARTMENT OF ARCHAEOLOGY AND HISTORIC RESERVATION.THE AGENCIES AND TRIBE(S) WILL DISCUSS POSSIBLE MEASURES TO REMOVE OR AVOID CULTURAL MATERIAL, AND WILL REACH AN AGREEMENT WITH THE PROJECT PROPONENT REGARDING ACTIONS TO BE TAKEN AND DISPOSITION OF MATERIAL.IF HUMAN REMAINS ARE UNCOVERED, APPROPRIATE LAW ENFORCEMENT AGENCIES SHALL BE NOTIFIED FIRST, AND THE ABOVE STEPS FOLLOWED. IF THE REMAINS ARE DETERMINED TO BE NATIVE, CONSULTATION WITH THE AFFECTED TRIBES WILL TAKE PLACE IN ORDER TO MITIGATE THE FINAL DISPOSITION OF SAID REMAINS.SEE THE REVISED CODE OF WASHINGTON, CHAPTER 27.53, "ARCHAEOLOGICAL SITES AND RESOURCES," FOR APPLICABLE STATE LAWS AND STATUTES. SEE ALSO WASHINGTON STATE EXECUTIVE ORDER 05—05,"ARCHAEOLOGICAL AND CULTURAL RESOURCES." ADDITIONAL STATE AND FEDERAL LAW(S) MAY ALSO APPLY.
- GRADING NOTES:
1.

ALL GRADING SHALL CONFORM TO THE 2026 EDITION OF THE WSDOT STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION.

2.

THE LIMITS OF CLEARING SHALL BE FENCED PRIOR TO CLEARING AND GRUBBING OF THE SITE.

3.

THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE GEOTECHNICAL REPORT PREPARED BY HART CROWSER FOR THE SITE DATED APRIL 2022. THE CONTRACTOR SHALL FOLLOW ALL RECOMMENDATIONS REGARDING EARTHWORK AS DETAILED IN THE REPORT.

4.

ALL SURFACES SHALL BE GRADED SMOOTH AND BE FREE OF IRREGULARITIES THAT MIGHT ACCUMULATE SURFACE WATER.

5.

ALL CUT AND FILL SLOPES SHALL NOT EXCEED 2:1 SLOPES.

6.

ANY EXCESS MATERIAL NOT REQUIRED TO MEET THE GRADES SHOWN ON THE PLANS SHALL BE HAULED FROM THE SITE TO A CONTRACTOR PROVIDED WASTE SITE. IF WASTE SITE IS WITHIN CITY LIMITS, A GRADING PERMIT MAYBE REQUIRED.

7.

ALL EXPOSED AND UNWORKED SOILS SHALL BE STABILIZED BY SUITABLE APPLICATION OF EROSION CONTROL BMP'S.

8.

ALL SURFACES REQUIRING VEGETATION SHALL BE ROUGHENED PRIOR TO SEEDING (I.E. TRACKED PERPENDICULAR TO SURFACE FLOW TO REDUCE EROSION AND HELP VEGETATION).
- STORM SEWER NOTES:
1.

STORM SEWERS SHALL MEET THE PROVISIONS SET FORTH IN THE WASHINGTON DEPARTMENT OF ECOLOGY 1992 PUGET SOUND MANUAL AND THE LATEST WSDOT "STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION (CCC 40.386).

2.

MATERIALS FOR STORM SEWER PIPE SHALL BE SMOOTH INTERIOR WATER TIGHT HDPE UNLESS OTHERWISE NOTED ON PLANS.

3.

CONTRACTOR SHALL FIELD VERIFY THE LOCATION, ALIGNMENT, DEPTH AND INVERTS OF ALL EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION AND ORDERING MATERIALS. NOTIFY OWNER IMMEDIATELY OF EXISTING UTILITY CONFLICTS WITH NEW CONSTRUCTION.

4.

IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER AND/OR CONTRACTOR TO PROCURE ALL APPLICABLE PERMITS, LICENSES AND CERTIFICATES RELATIVE TO THE TRADES TO COMPLETE THE PROJECT AND FOR THE USE OF SUCH WORK WHEN COMPLETED. COMPLIANCE SHALL BE AT ALL LEVELS: FEDERAL, STATE AND COUNTRY RELATING TO THE PERFORMANCE OF THIS WORK.
- SANITARY SEWER NOTES:
1.

THE CONTRACTOR SHALL UNDERSTAND AND ABIDE BY THE PROV ISIONS SET FORTH IN THE CITY OF NORTH BONNEVILLE MUNICIPAL CODE CHAPTER 13.12.

2.

SANITARY SEWER LATERALS SHALL INSTALLED AT A MINIMUM SLOPE OF 0.02 FT/FT UNLESS OTHERWISE SPECIFIED ON PLANS.

3.

MATERIALS FOR SANITARY SEWER PIPE SHALL BE SOLID WALL PVC SANITARY SEWER PIPE, UNLESS OTHERWISE SPECIFIED ON PLANS.
- WATER SYSTEM NOTES:
1.

THE CONTRACTOR SHALL UNDERSTAND AND ABIDE BY THE PROVISIONS SET FORTH IN THE CITY OF NORTH BONNEVILLE MUNICIPAL CODE CHAPTER 13.04.

2.

USAGE OF THE CITY'S WATER DISTRIBUTION SYSTEM FOR CONSTRUCTION PURPOSES SHALL BE PERMITTED ONLY AFTER ARRANGEMENTS HAVE BEEN MADE WITH THE CITY OF NORTH BONNEVILLE. A CITY-APPROVED METER SHALL BE USED TO MEASURE ALL WATER WITHDRAWN BY THE CONTRACTOR FROM THE SYSTEM.

3.

ALL WATER DISTRIBUTION MATERIALS SHALL MEET OR EXCEED THE REQUIREMENTS SET FORTH IN SECTION 9-30 OF THE WSDOT STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION.

4.

WATER MAINS SHALL BE DUCTILE IRON PIPE, OR POLYVINYL CHLORIDE (PVC) PIPE MEETING THE REQUIREMENTS OF AWWA C900.

5.

WHERE A PIPE DEFLECTION IS PROVIDED ON THE PLANS AS AN ANGLE OR A RADIUS, THE DEFLECTION CAN BE ACHEIEVED WITH DUCTILE IRON PIPE OR POLYVINYL CHLORIDE (PVC) PIPE AS SHOWN IN THE FOLLOWING TABLE:
- | | DEFLECTION ANGLE | DEFLECTION RADIUS |
|-------------------------------|--|--|
| DUCTILE IRON PIPE | AXIAL DEFLECTION AT ONE OR MORE PIPE JOINTS ADDING UP TO THE DEFLECTION ANGLE SHOWN ON THE PLANS. | AXIAL DEFLECTION AT ONE OR MORE PIPE JOINTS SUCH THAT EACH PIPE JOINT IS LOCATED ON THE RADIUS CURVE. PIPE STICK LENGTHS ALONG THE RADIUS CURVE SHALL BE SELECTED SUCH THAT THE DEFLECTION AT EACH JOINT IS WITHIN MANUFACTURER ACCEPTABLE RANGE. SEE SPECIFICATION SECTION 7-09.3(15)A. |
| POLYVINYL CHLORIDE (PVC) PIPE | BEND PIPE TO A RADIUS GREATER THAN OR EQUAL TO MINIMUM SET FORTH IN SPECIFICATION SECTION 7-09.3(15)B. | BEND PIPE TO THE RADIUS SHOWN ON THE PLANS. |
- EROSION/SEDIMENT CONTROL NOTES:
1.

THE GRADING AND EROSION CONTROL PLAN AND STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IS TO BE UTILIZED AS A GUIDE TO CONTROL THE TRANSPORT OF LOOSE SOILS TO THE PROPERTY OUTSIDE OF THE CONSTRUCTION AREA AND AROUND THE CONSTRUCTION SITE. THE EROSION/SEDIMENT CONTROL MEASURES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DOES NOT LEAVE THE SITE.

2.

THE IMPLEMENTATION OF THE GRADING AND EROSION CONTROL PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT AND UPGRADING OF THE EROSION/SEDIMENT CONTROL MEASURES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED AND PERMANENT VEGETATION/LANDSCAPING IS ESTABLISHED.

3.

THE CONTRACTORS SHALL BE RESPONSIBLE TO FAMILIARIZE THEMSELVES WITH THE 1992 EDITION OF THE STORMWATER MANAGEMENT MANUAL FOR PUGET SOUND.

4.

ALL EROSION/SEDIMENT CONTROL MEASURES SHALL BE IN PLACE AND IN WORKING CONDITION PRIOR TO DISTURBING AND EXPOSING ANY SOIL SURFACES (I.E. CONSTRUCTION ENTRANCES, FILTER FABRIC SEDIMENT BARRIERS, AND SEDIMENTATION TRAPS) AND MAINTAINED FOR THE DURATION OF THE PROJECT. TRAPPED SEDIMENT IN EXCESS OF 1 FOOT SHALL BE REMOVED OR STABILIZED ON-SITE. DISTURBED SOIL AREAS RESULTING FROM VEGETATION REMOVAL SHALL BE PERMANENTLY STABILIZED. ADDITIONAL MEASURES MAY BE REQUIRED TO ENSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.

5.

TO MINIMIZE EROSION AND SEDIMENTATION TRANSPORTATION. EARTHWORK SHALL NOT BE PERFORMED WHILE SOILS ARE IN AN UNSTABLE STATE DUE TO PRECIPITATION.

6.

THE CONTRACTOR SHALL BE RESPONSIBLE TO HAVE CLEARING LIMITS AND/OR ANY EASEMENTS, SENSITIVE OR CRITICAL AREAS, AND THEIR BUFFERS, TREES, AND DRAINAGE COURSES FLAGGED PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE FLAGGED CLEARING LIMITS SHALL BE PERMITTED. FLAGGING LIMITS ARE TO BE MAINTAINED BY THE CONTRACTOR FOR THE DURATION OF CONSTRUCTION.

7.

ALL POLLUTANTS THAT OCCUR ON-SITE DURING CONSTRUCTION SHALL BE HANDLED AND DISPOSED OF IN A MANNER THAT DOES NOT CAUSE CONTAMINATION OF THE STORMWATER SYSTEM.

8.

ALL DISTURBED SOIL SURFACES ARE TO BE STABILIZED BY A SUITABLE APPLICATION OF "BEST MANAGEMENT PRACTICES" (BMP'S). DURING THE PERIOD OF OCTOBER 1 THROUGH JULY 5 DISTURBED SOILS MAY REMAIN UNSTABILIZED FOR UP TO TWO DAYS WHEN NOT BEING WORKED. FROM JULY 5 THROUGH OCTOBER 1, DISTURBED SOILS MAY REMAIN UNSTABILIZED FOR UP TO 7 DAYS WHEN NOT BEING WORKED. STABILIZATION OF DISTURBED SOIL AREAS MAY CONSIST OF HYDROSEEDING, HAND-SEEDING AND MULCHING. PLACEMENT OF EROSION CONTROL BLANKETS OR PLASTIC. ALL SEEDED AREAS ARE TO BE FERTILIZED, WATERED, AND MAINTAINED TO ENSURE THAT THE GROWTH OF VEGETATION OCCURS AS SOON AS POSSIBLE.

9.

ALL TEMPORARY SEDIMENT AND EROSION CONTROL BMP'S SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY BMP'S ARE NO LONGER NEEDED.

10.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR POLICING THE JOB SITE DAILY AND MAINTAINING THE EROSION/SEDIMENT CONTROL MEASURES THROUGHOUT ALL PHASES OF CONSTRUCTION. AN INSPECTION LOG SHALL BE KEPT AND MADE AVAILABLE TO THE CITY OF NORTH BONNEVILLE. THE POLICING AND MAINTENANCE SHALL INCLUDE, BUT NOT BE LIMITED TO:
- VERIFYING THAT ALL AREAS ARE GRADED SUCH THAT ALL RUNOFF IS DIRECTED TO A SEDIMENTATION DEVICE BEFORE DISCHARGE TO SURFACE.

•

REMOVAL OF TRAPPED SILT A T SILT BARRIERS, SILT TRAPS, OR POINTS OF ACCUMULATION.

•

MONITORING OF VEHICLES LEAVING THE SITE TO MINIMIZE TRANSMISSION OF LOOSE SOILS TO THE PUBLIC ROADWAYS.

•

VERIFY THAT ALL PROPERTIES ADJACENT TO THE PROJECT SITE ARE PROTECTED FROM SEDIMENTATION DEPOSITION. THIS MAY BE ACCOMPLISHED BY INSTALLING PERIMETER CONTROLS SUCH AS SEDIMENTATION BARRIERS, FILTERS OR DIKES, SEDIMENTATION BASINS/TRAPS, OR BY A COMBINATION OF SUCH MEASURES.

11.

CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES FOUND TO BE ERODING EXCESSIVELY WITHIN TWO YEARS OF CONSTRUCTION MUST BE PROVIDED WITH ADDITIONAL SLOPE STABILIZING MEASURES. THESE MEASURES MAY CONSIST OF ROUGHENED SOIL SURFACES, INTERCEPTORS, DIVERSIONS OR TERRACES, TEMPORARY OR PERMANENT CHANNELS, ADDITIONAL VEGETATION, UNTIL THE PROBLEM IS CORRECTED.

12.

THE ESC MEASURES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH OR WITHIN 24 HOURS FOLLOWING ANY STORM EVENT.

13.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING UNDERGROUND UTILITIES AS SPECIFIED BELOW:

•

WHERE FEASIBLE, NO MORE THAN 500 FEET OF TRENCH SHALL BE OPEN AT ONE TIME.

•

WHERE CONSISTENT WITH SAFETY AND SPACE CONSIDERATIONS, EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.

•

TRENCH DE-WATER DEVICES SHALL DISCHARGE INTO A SEDIMENT TRAP OR SEDIMENT POND

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SHEET ID G03
SHEET 3 OF 28

GENERAL NOTES FOR:

CASCADES BUSINESS PARK INFRASTRUCTURE IMPROVEMENTS - PHASE 1

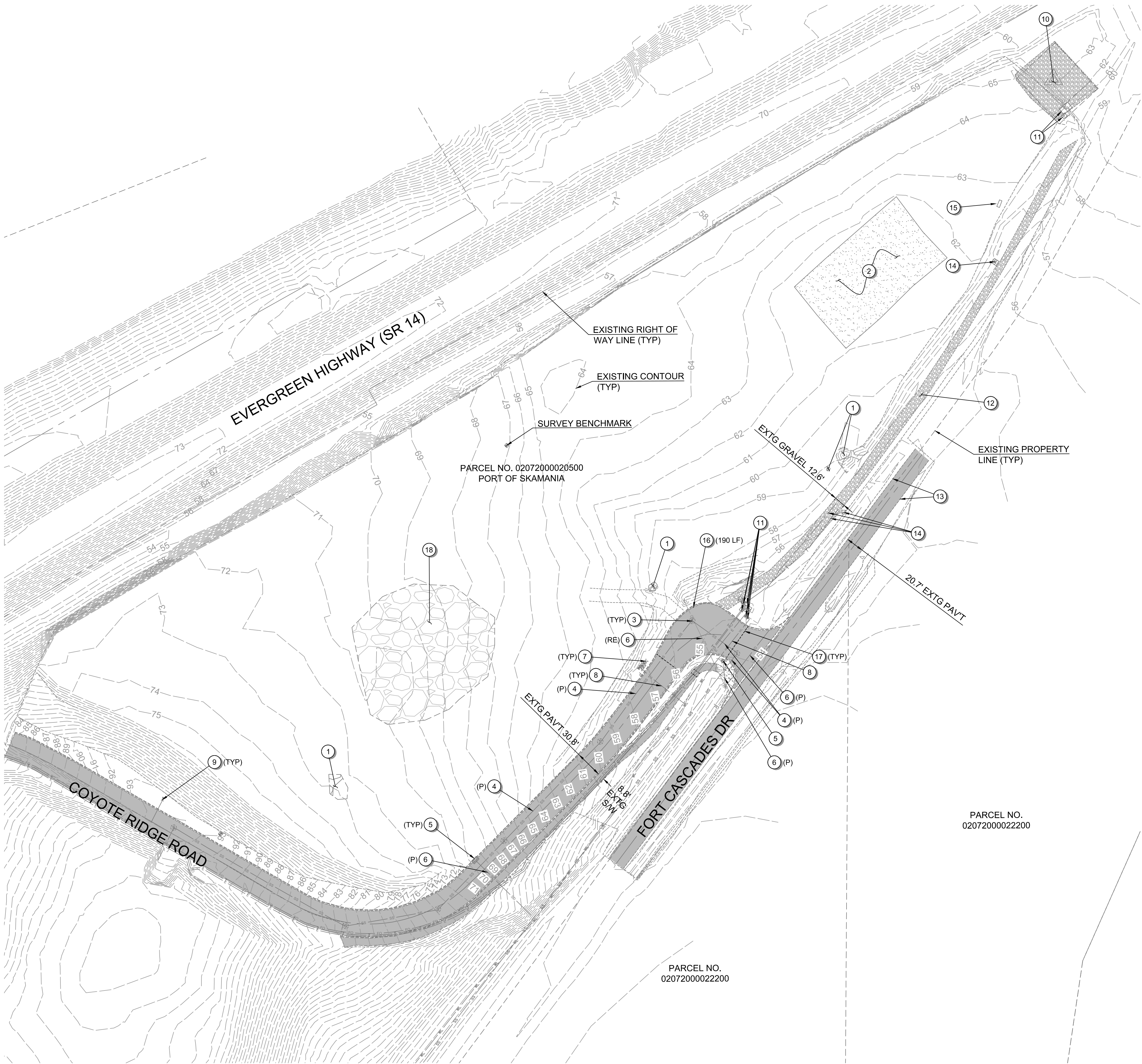
A SITE LOCATED IN THE CITY OF NORTH BONNEVILLE, WASHINGTON

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GENERAL NOTES:

1. SEE SHEET G03 FOR PROJECT'S GENERAL NOTES.
2. SEE SHEET G02 FOR ABBREVIATIONS AND MASTER LEGEND.
3. ALL ABOVE AND UNDERGROUND UTILITIES TO BE PROTECTED, UNLESS OTHERWISE NOTED.

SITE PREPERATION NOTES:

1. REMOVE EXISTING ROCK/RUBBLE PILE.
2. REMOVE EXISTING CONCRETE BUILDING PAD.
3. PROTECT EXISTING SANITARY MANHOLE.
4. PROTECT EXISTING SANITARY PIPE.
5. PROTECT EXISTING STORM INLET.
6. REMOVE (RE) OR PROTECT (P) EXISTING STORM PIPE.
7. PROTECT EXISTING FIRE HYDRANT.
8. PROTECT EXISTING WATER LINE.
9. PROTECT EXISTING WATER STAND PIPE.
10. PROTECT CELL TOWER SITE.
11. PROTECT EXISTING UTILITY.
12. EXISTING GRAVEL.
13. EXISTING LIMIT OF ASPHALT.
14. EXISTING UTILITY TO BE RELOCATED, CONTRACTOR TO COORDINATE WITH UTILITY OWNER PRIOR TO RELOCATION.
15. REMOVE EXISTING CONCRETE BLOCKS.
16. REMOVE EXISTING CURB.
17. SAWCUT.
18. EXISTING CRUSHED SURFACING STOCK PILE.

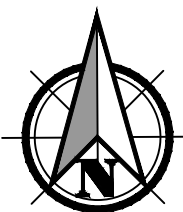
HATCH LEGEND

- | | |
|--|-------------------|
| | EXISTING GRAVEL |
| | EXISTING CONCRETE |
| | EXISTING ASPHALT |

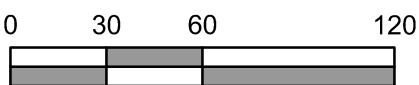
BENCHMARK:

THE VERTICAL DATUM: ELEVATIONS SHOWN HEREON ARE NAVD88 DERIVED FROM TRIMBLE TRX POST-PROCESSING SERVICE ON TEMPORARY BENCHMARK NO. 1 SHOWN HEREON.

HORIZONTAL DATUM (BASIS OF BEARINGS): WASHINGTON STATE PLANE COORDINATE SYSTEM, NAD 83 (2011), SOUTH ZONE 4602, US SURVEY FEET, DERIVED FROM TRIMBLE RTX POST-PROCESSING SERVICE, DISTANCES SHOWN HEREON ARE GROUND AND HAVE BEEN SCALED BY A COMBINED GRID TO GROUND SCALE OF 0.999951262 ABOUT TEMPORARY BENCHMARK NO. 1 SHOWN HEREON.

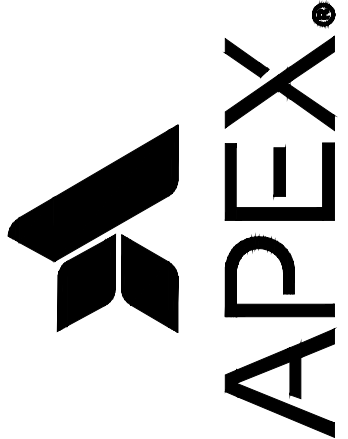


Scale 1" = 60'



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EXISTING CONDITIONS AND SITE PREP FOR:
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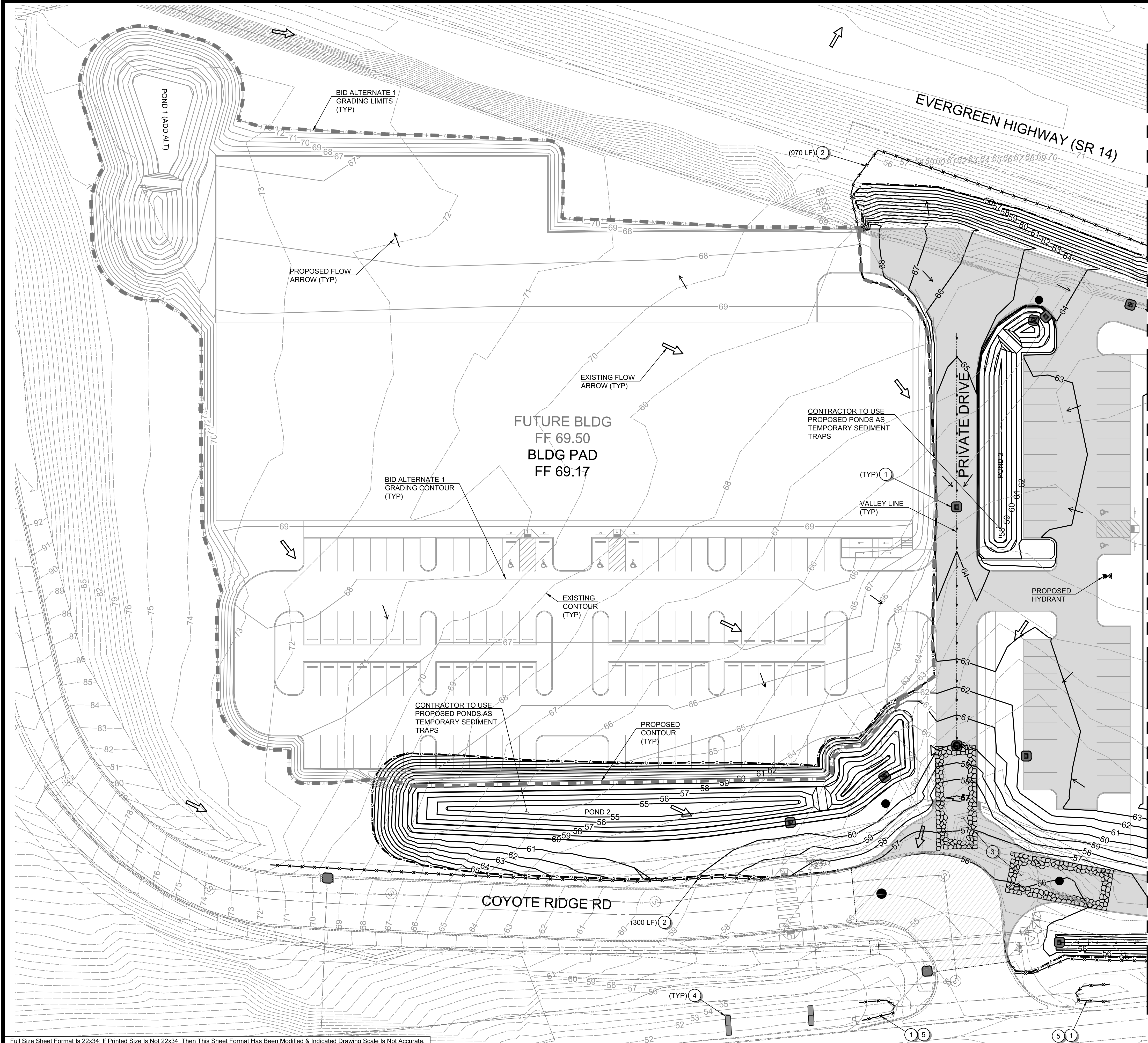
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EG01

SHEET **4** OF **28**

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GENERAL NOTES:

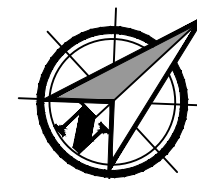
1. SEE SHEET G03 FOR PROJECT'S GENERAL NOTES.
2. SEE SHEET G02 FOR ABBREVIATIONS AND MASTER LEGEND.
3. CONTRACTOR TO DIRECT RUNOFF TO PROPOSED PONDS FOR TEMPORARY SEDIMENT PONDS. CONTRACTOR TO REMOVE SEDIMENT PRIOR TO POND SEEDING.

EROSION CONTROL NOTES:

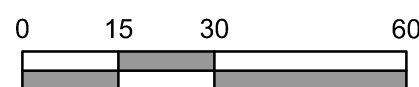
- 1 STORM DRAIN INLET PROTECTION PER STANDARD DETAIL ON SHEET EC03.
- 2 SILT FENCE PER DETAIL ON SHEET EC03.
- 3 STABILIZED CONSTRUCTION ENTRANCE PER DETAIL ON SHEET EC03.
- 4 BIODEGRADABLE CHECK DAM SEE DETAIL ON SHEET EC03 FOR SPACING AND MATERIALS.
- 5 INSTALL EROSION CONTROL AT CULVERT ENDS PER DETAIL ON SHEET EC04.

LEGEND

- PROPOSED CRUSHED SURFACING BASE COURSE
- PROPOSED GRIND AND INLAY
- PROPOSED SURFACE CONTOUR
- ADD ALT SURFACE CONTOUR

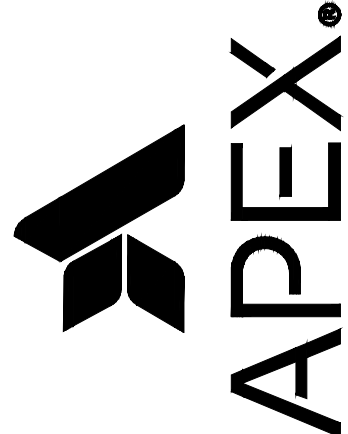


Scale 1" = 30'



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EROSION CONTROL PLAN FOR:
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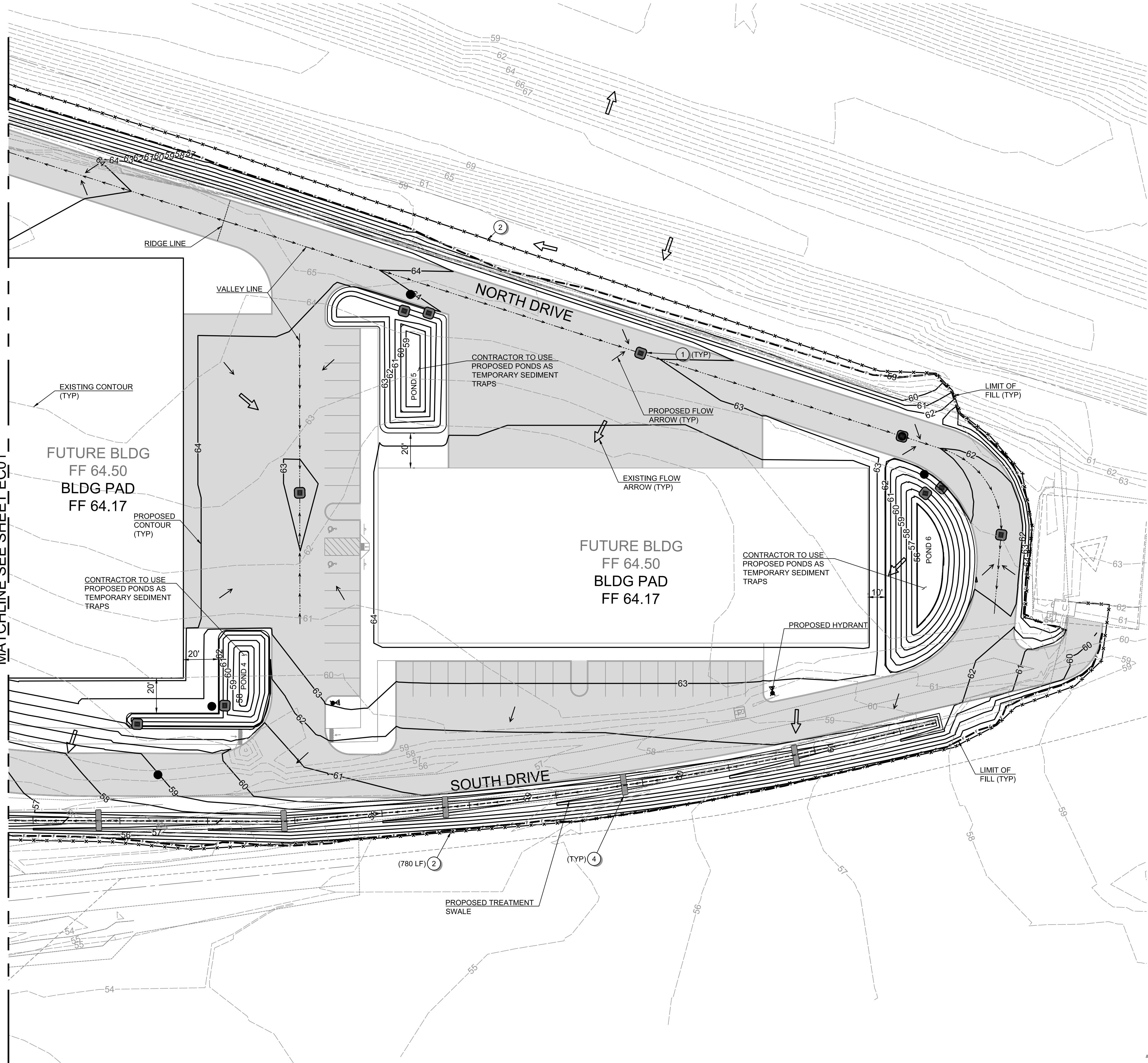
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SHEET **5** OF **28**

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MATCHLINE SEE SHEET EC01



GENERAL NOTES:

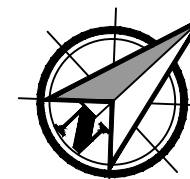
1. SEE SHEET G03 FOR PROJECT'S GENERAL NOTES.
2. SEE SHEET G02 FOR ABBREVIATIONS AND MASTER LEGEND.
3. CONTRACTOR TO DIRECT RUNOFF TO PROPOSED PONDS FOR TEMPORARY SEDIMENT PONDS. CONTRACTOR TO REMOVE SEDIMENT PRIOR TO POND SEEDING.

EROSION CONTROL NOTES:

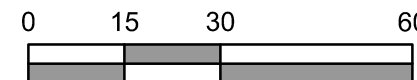
- 1 STORM DRAIN INLET PROTECTION PER STANDARD DETAIL ON SHEET EC03.
- 2 SILT FENCE PER DETAIL ON SHEET EC03.
- 3 STABILIZED CONSTRUCTION ENTRANCE PER DETAIL ON SHEET EC03.
- 4 BIODEGRADABLE CHECK DAM SEE DETAIL ON SHEET EC03 FOR SPACING AND MATERIALS.
- 5 INSTALL EROSION CONTROL AT CULVERT ENDS PER DETAIL ON SHEET EC04.

LEGEND

- PROPOSED CRUSHED SURFACING BASE COURSE
- PROPOSED GRIND AND INLAY
- 67 PROPOSED SURFACE CONTOUR
- 67 ADD ALT SURFACE CONTOUR

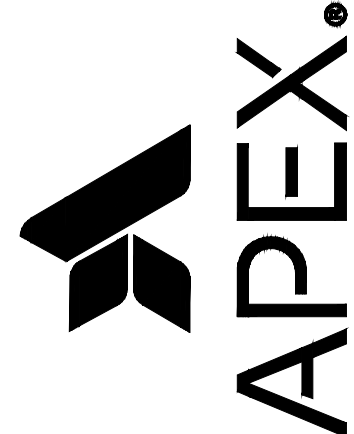


Scale 1" = 30'



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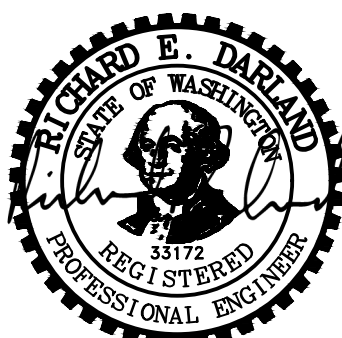
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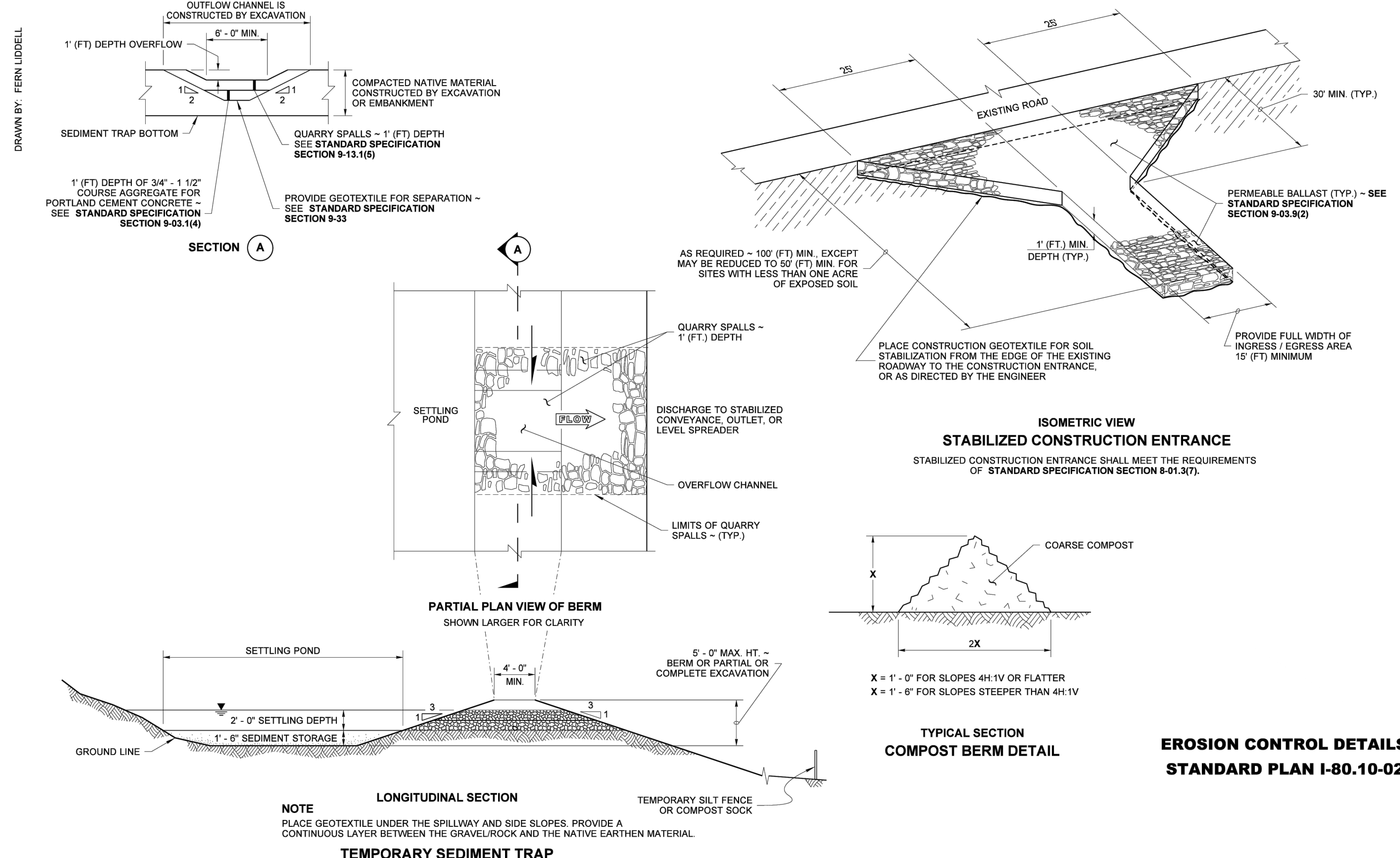
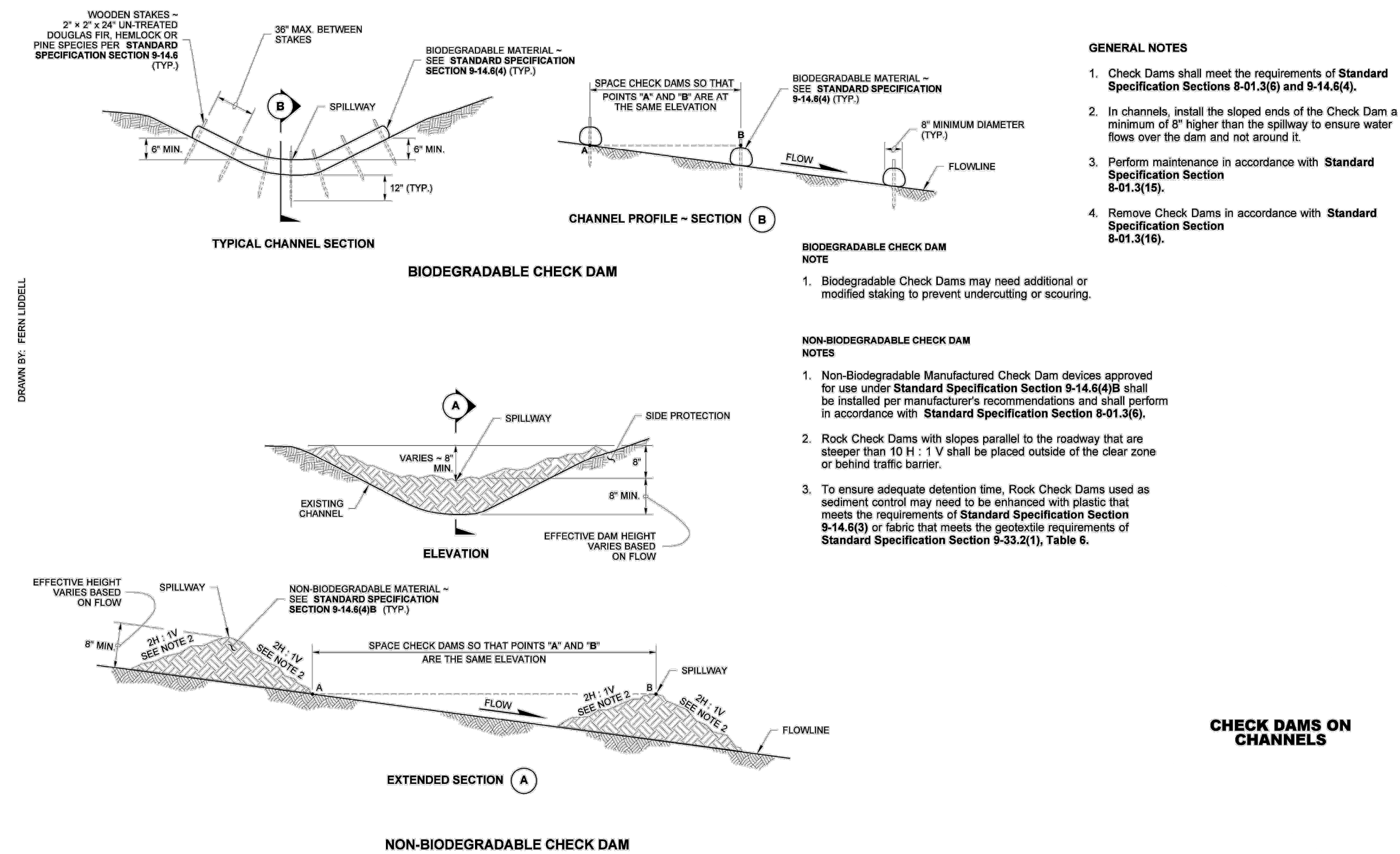
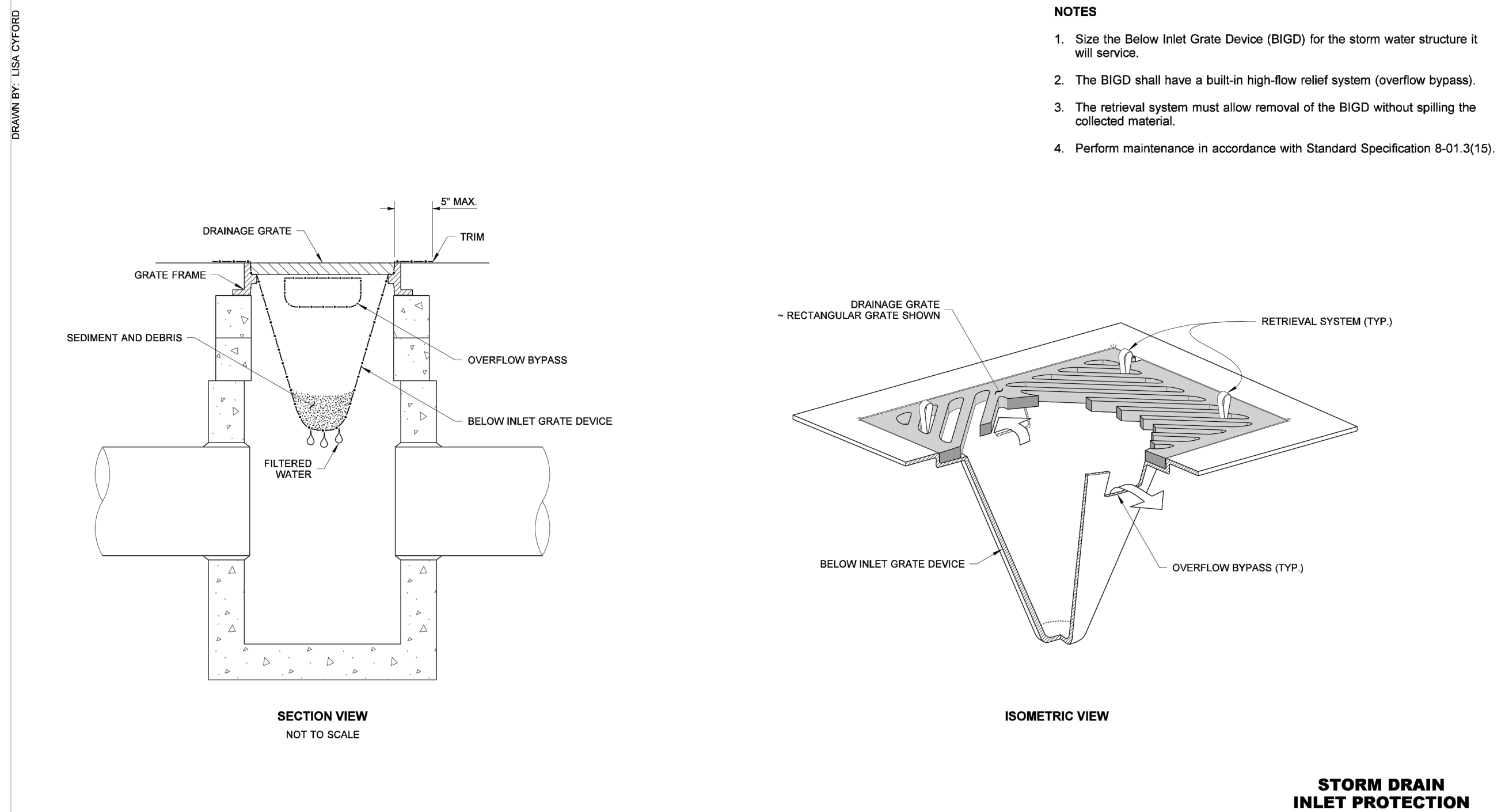
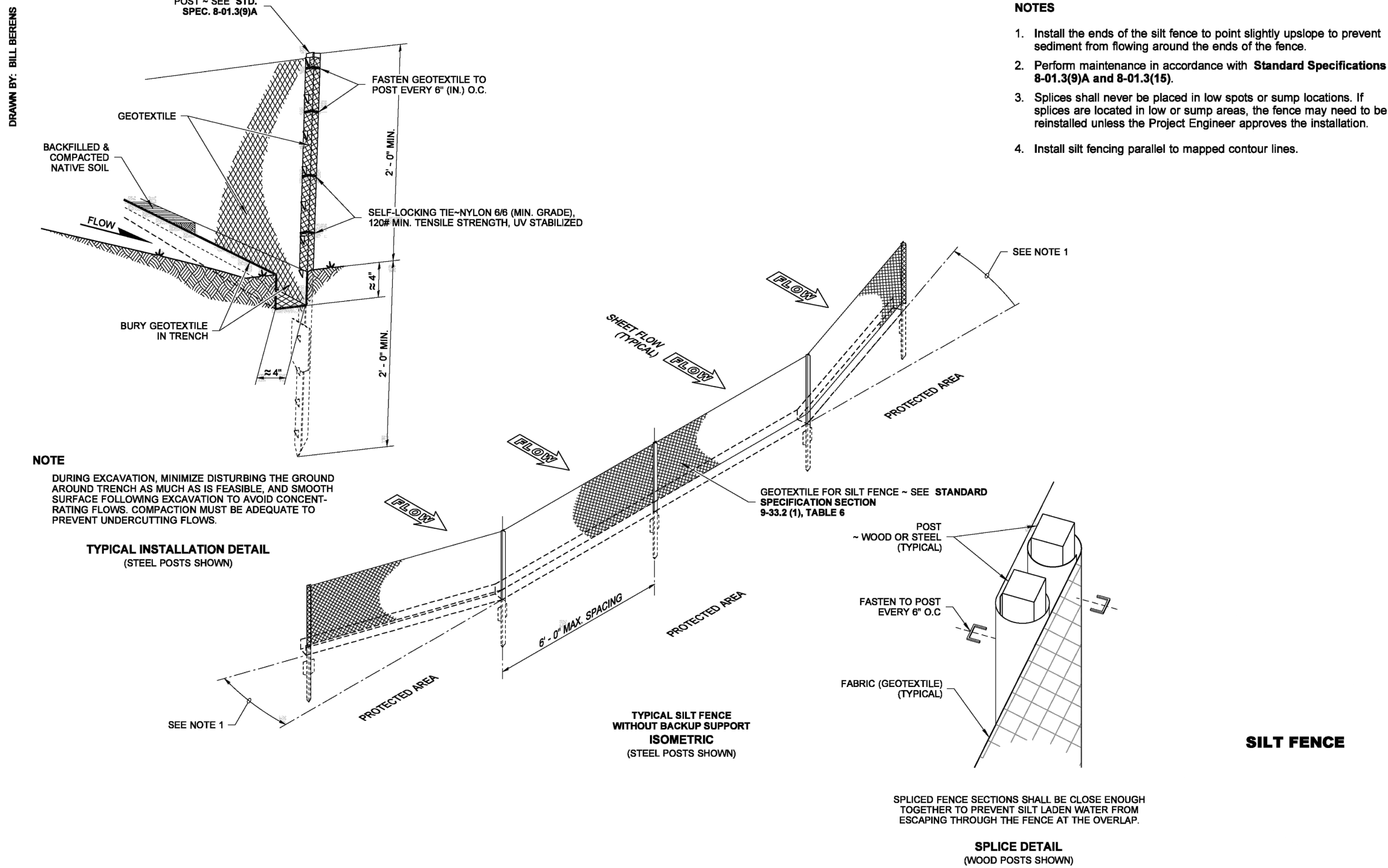
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EC02

SHEET **6** OF **28**

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EROSION CONTROL DETAILS FOR:

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STATE OF WASHINGTON
33172
REGISTERED PROFESSIONAL ENGINEER
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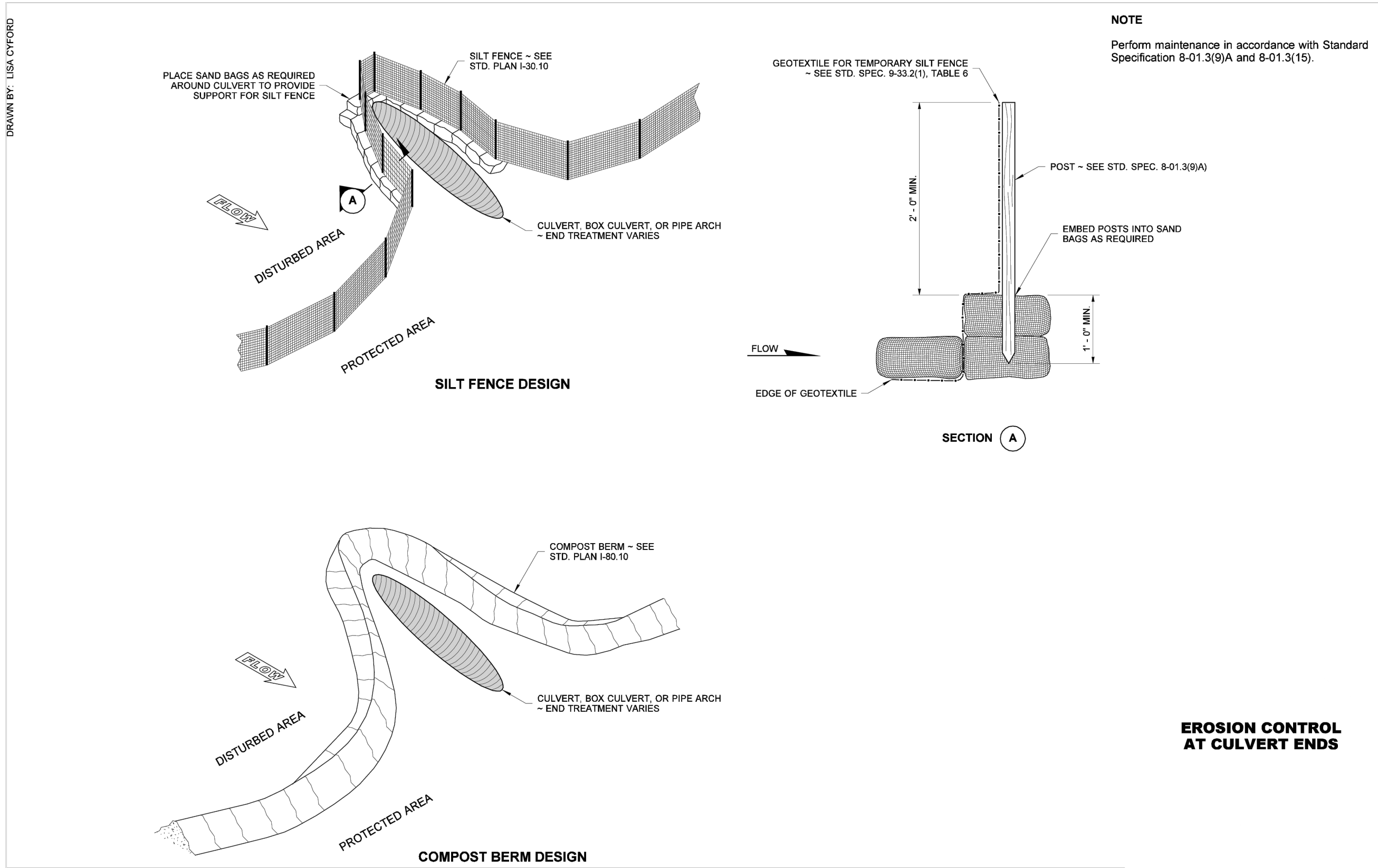
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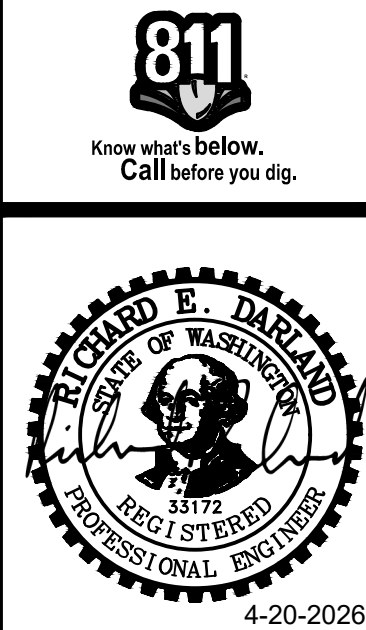
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EC03

SHEET 7 OF 28

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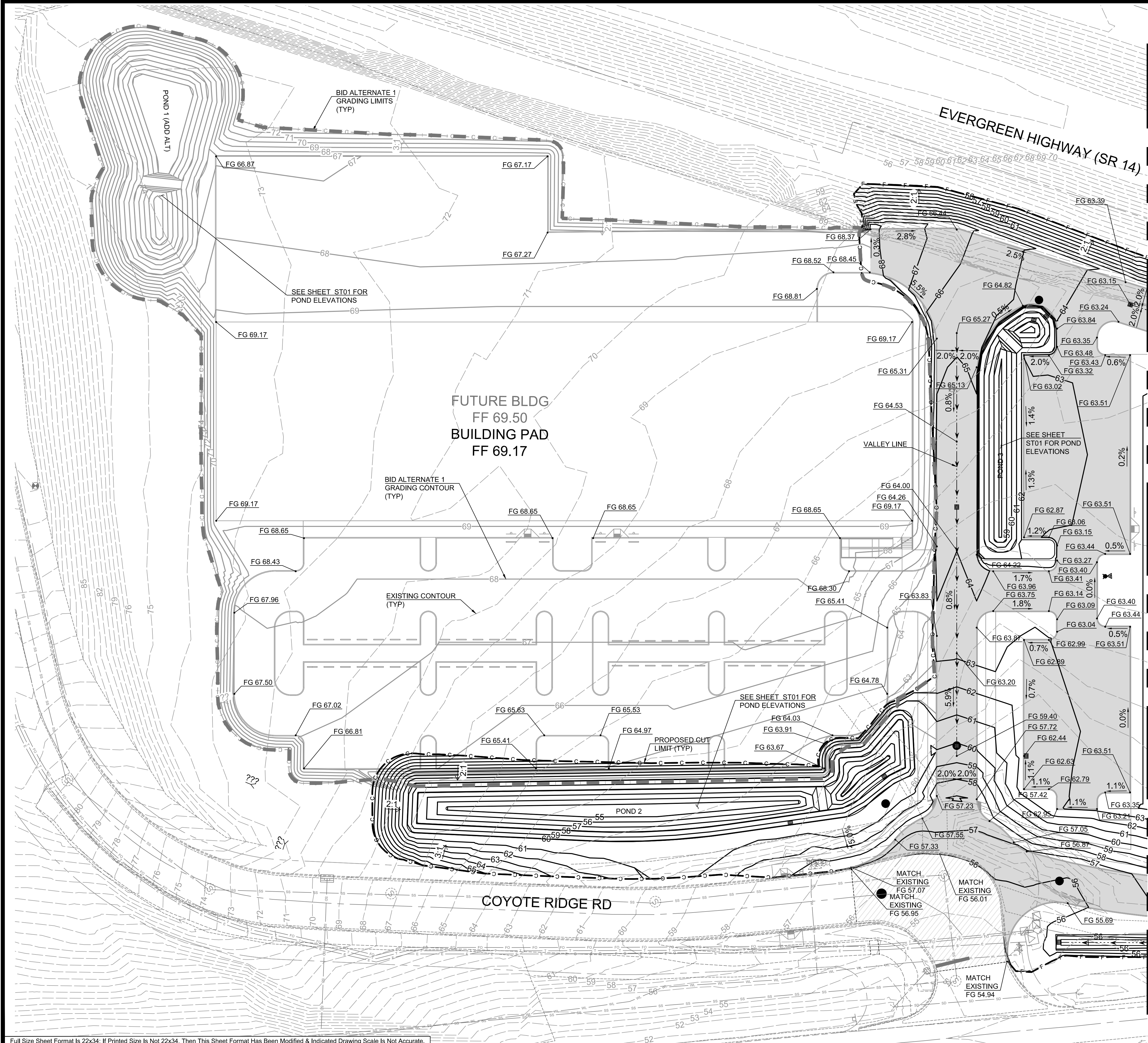
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SHEET ID EC04
SHEET 8 OF 28

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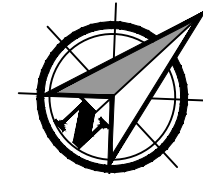


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LEGEND	
	PROPOSED CRUSHED SURFACING BASE COURSE
	PROPOSED SURFACE
	ADD ALT SURFACE



Scale 1" = 30'

0 15 30 60

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GRADING PLAN FOR:

CASCADES BUSINESS PARK INFRASTRUCTURE IMPROVEMENTS - PHASE 1

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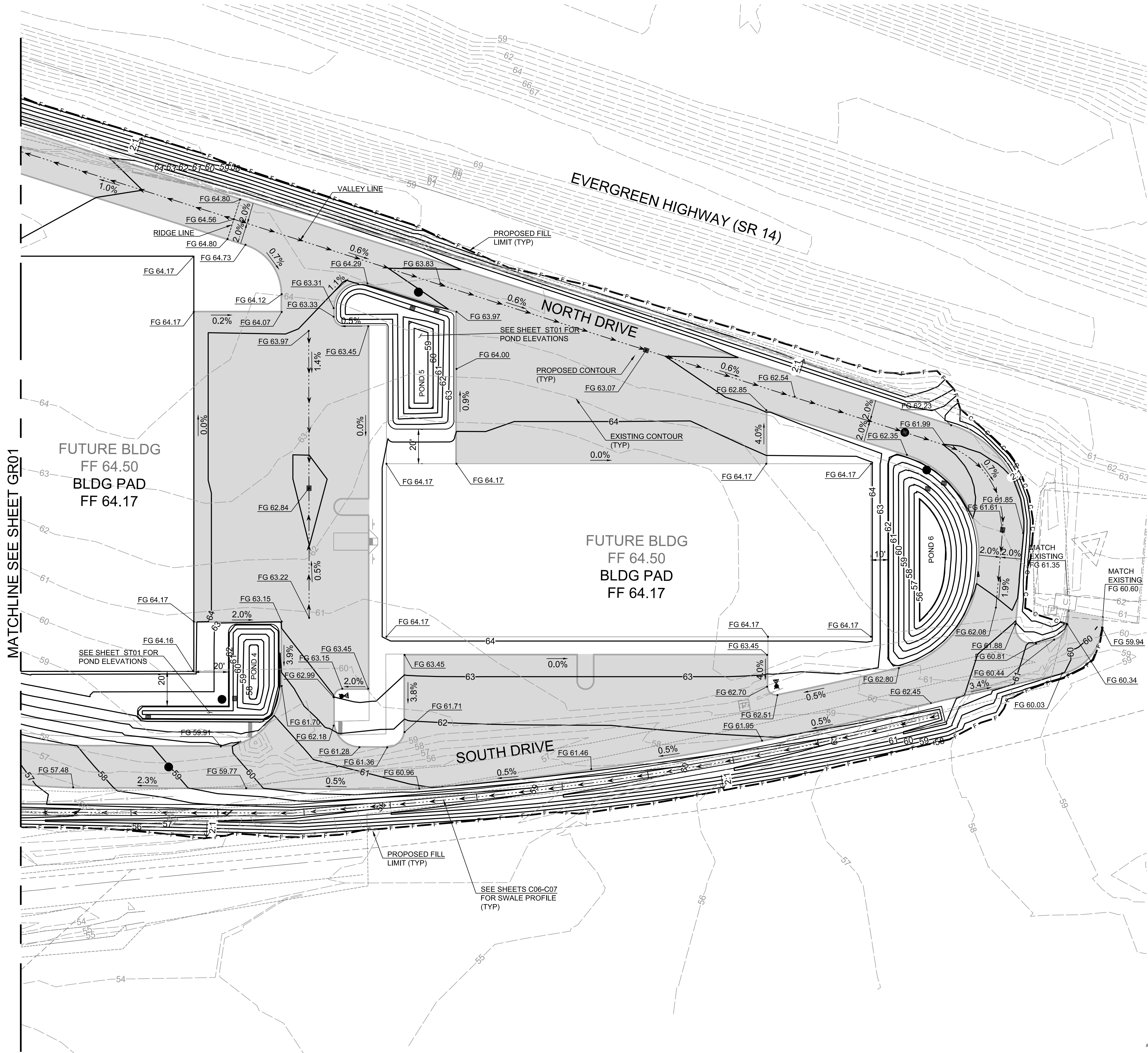
GR01

SHEET 9 OF 28

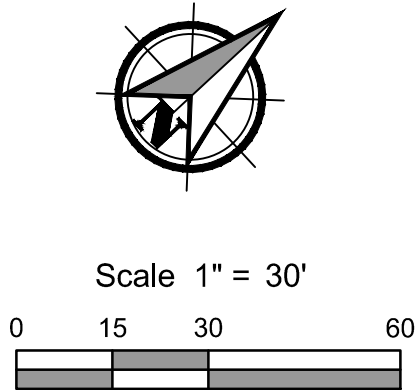


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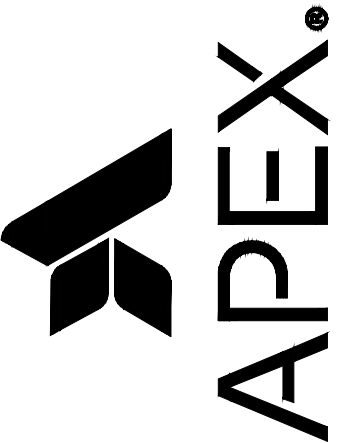


LEGEND	
	PROPOSED CRUSHED SURFACING BASE COURSE
	PROPOSED SURFACE
	ADD ALT SURFACE



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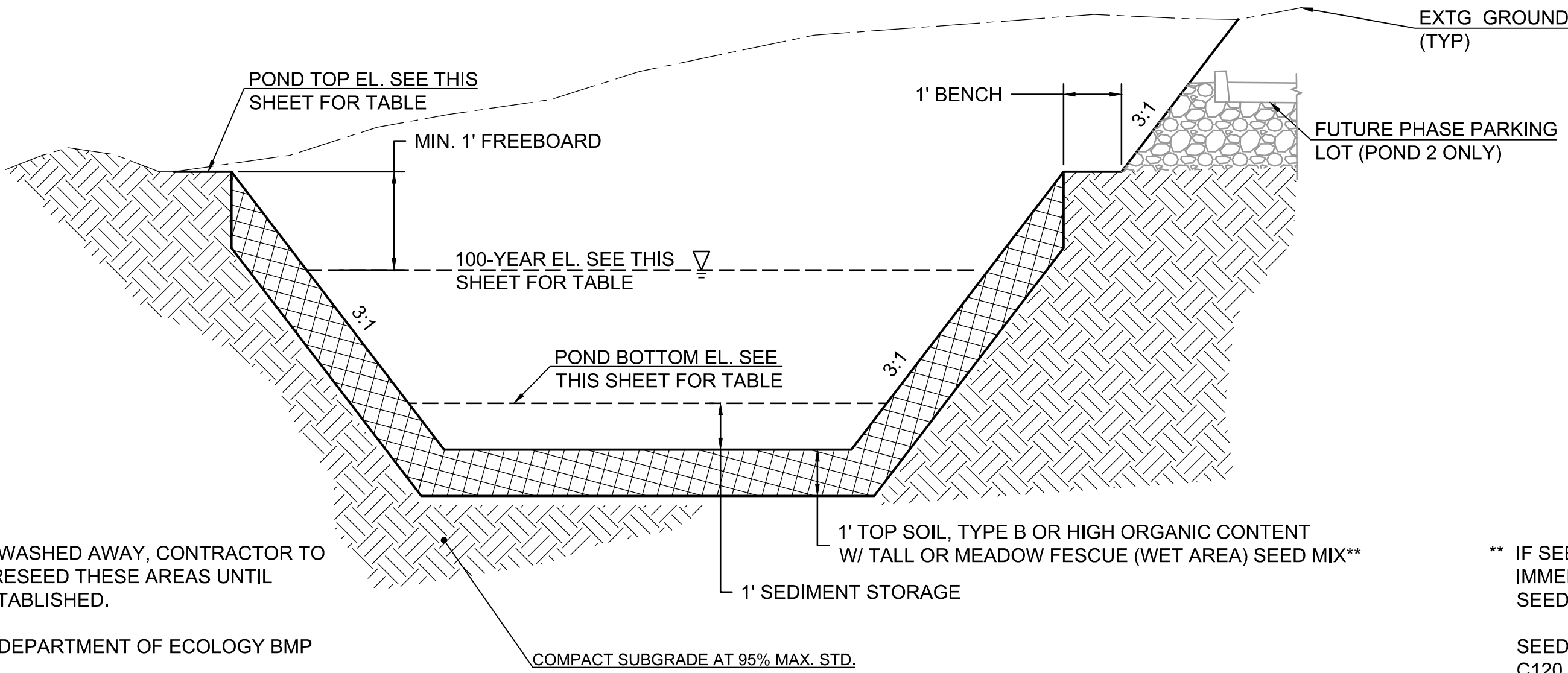
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GR02

SHEET 10 OF 28

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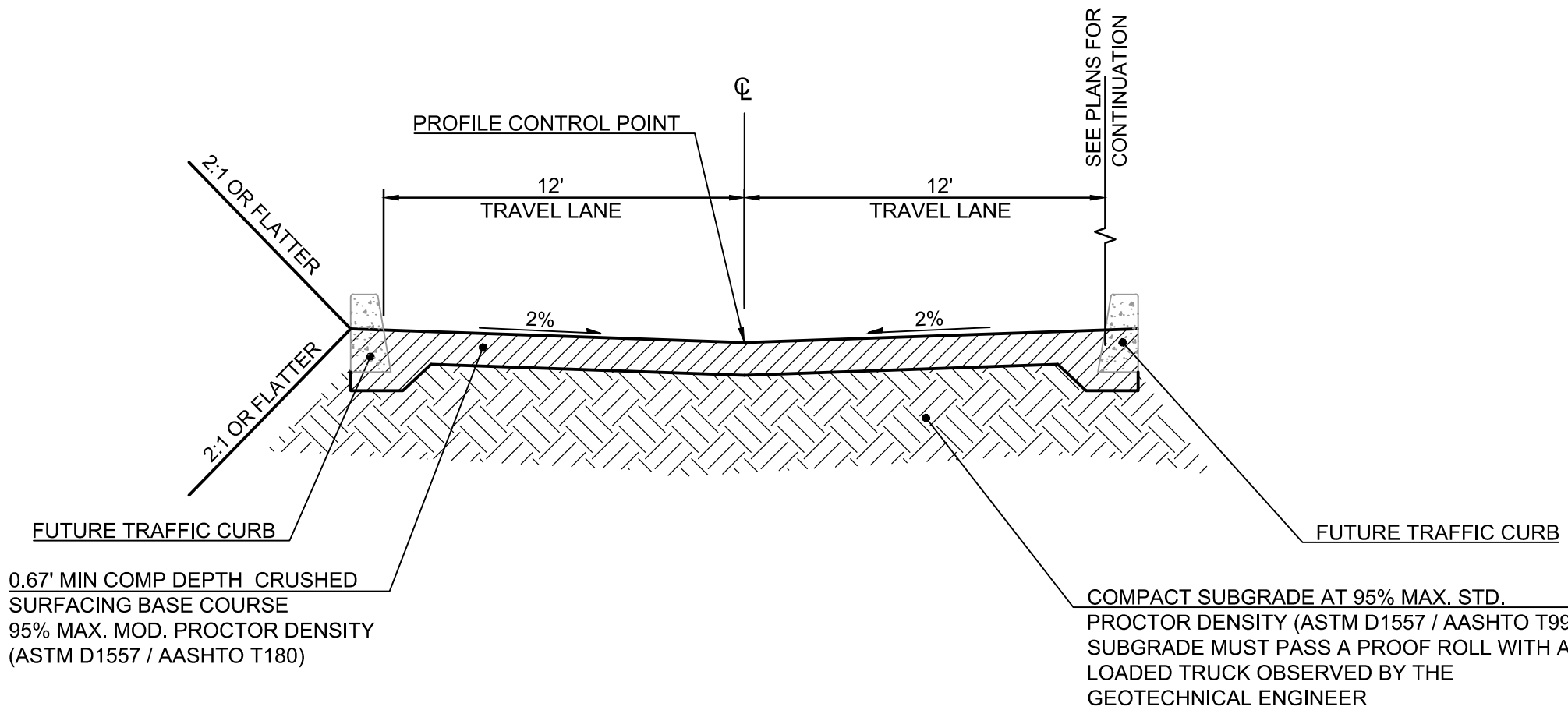
** IF SEED MIX IS WASHED AWAY, CONTRACTOR TO IMMEDIATELY RESEED THESE AREAS UNTIL SEEDING IS ESTABLISHED.

SEED MIX PER DEPARTMENT OF ECOLOGY BMP C120.

STORM FACILITIES INFORMATION						
DETENTION POND #	TOP AREA (SF)	BOTTOM AREA (SF)	TOP (EL.)	BOTTOM (EL.)	WQ-YEAR (EL.)	100-YEAR (EL.)
1 (ADD ALT)	7610	1550	67.00	61.00	64.18	66.07
2	10580	1230	60.00	55.00	57.55	58.82
3	4320	1020	62.00	59.00	59.74	60.90

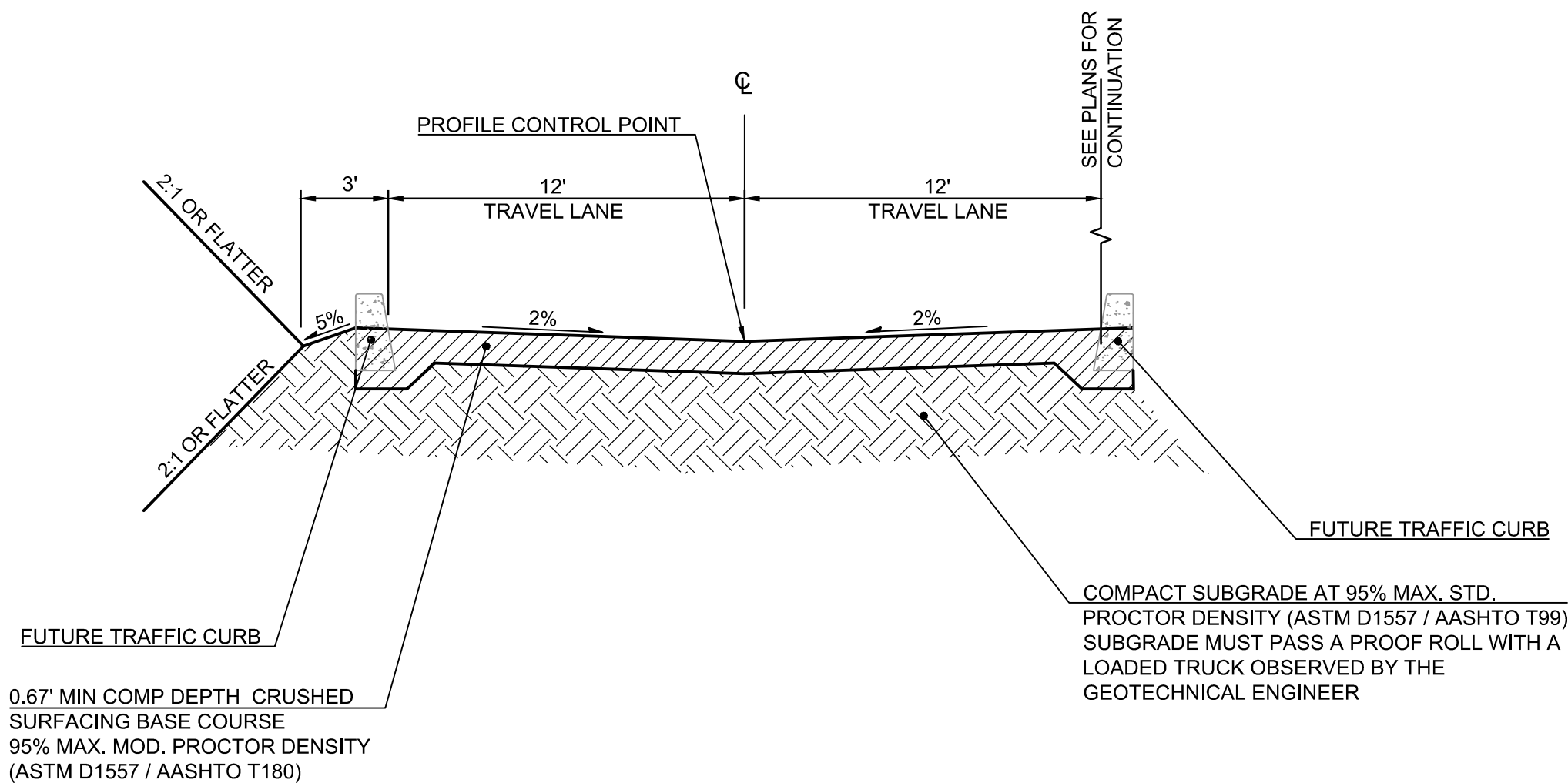
Typical Pond Cross-section Detail

NTS



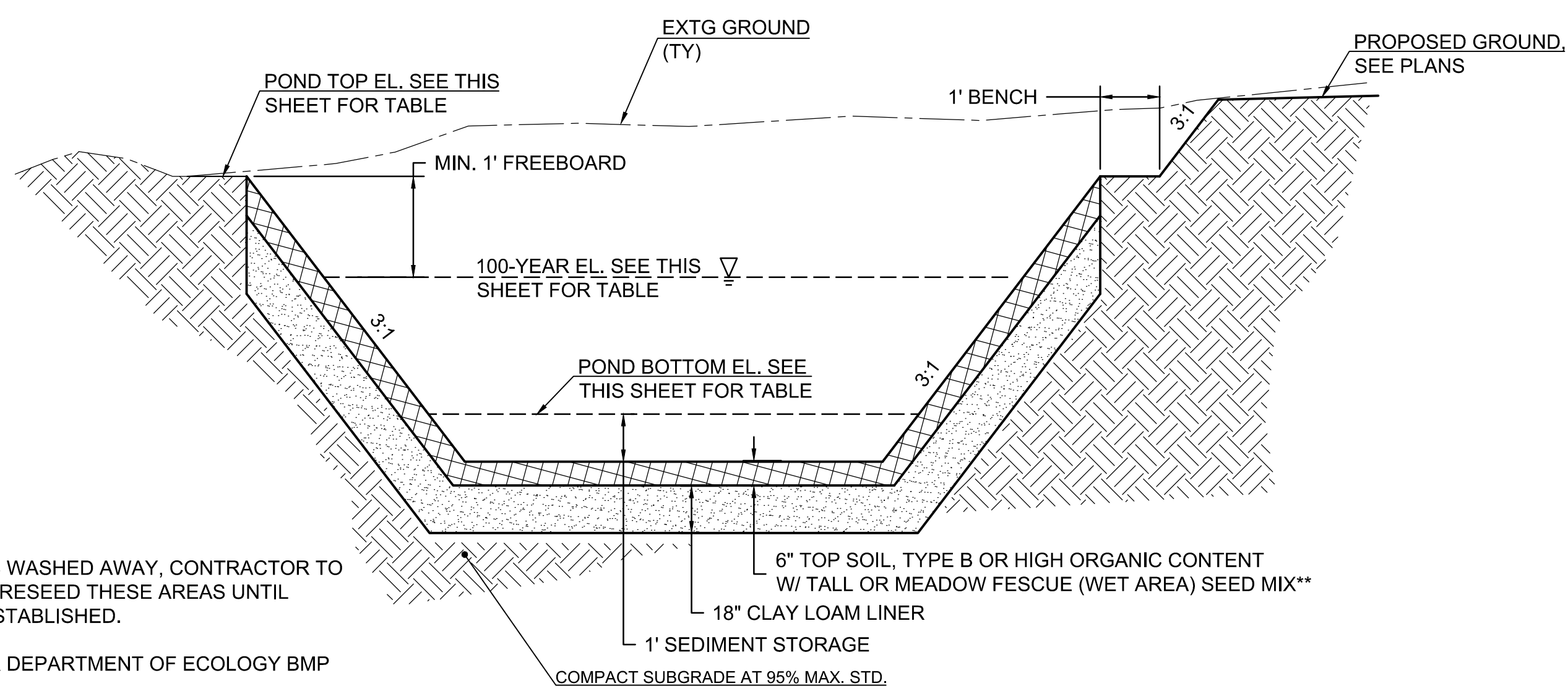
Private Drive Typical Section

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North Drive Typical Section

NTS



** IF SEED MIX IS WASHED AWAY, CONTRACTOR TO IMMEDIATELY RESEED THESE AREAS UNTIL SEEDING IS ESTABLISHED.

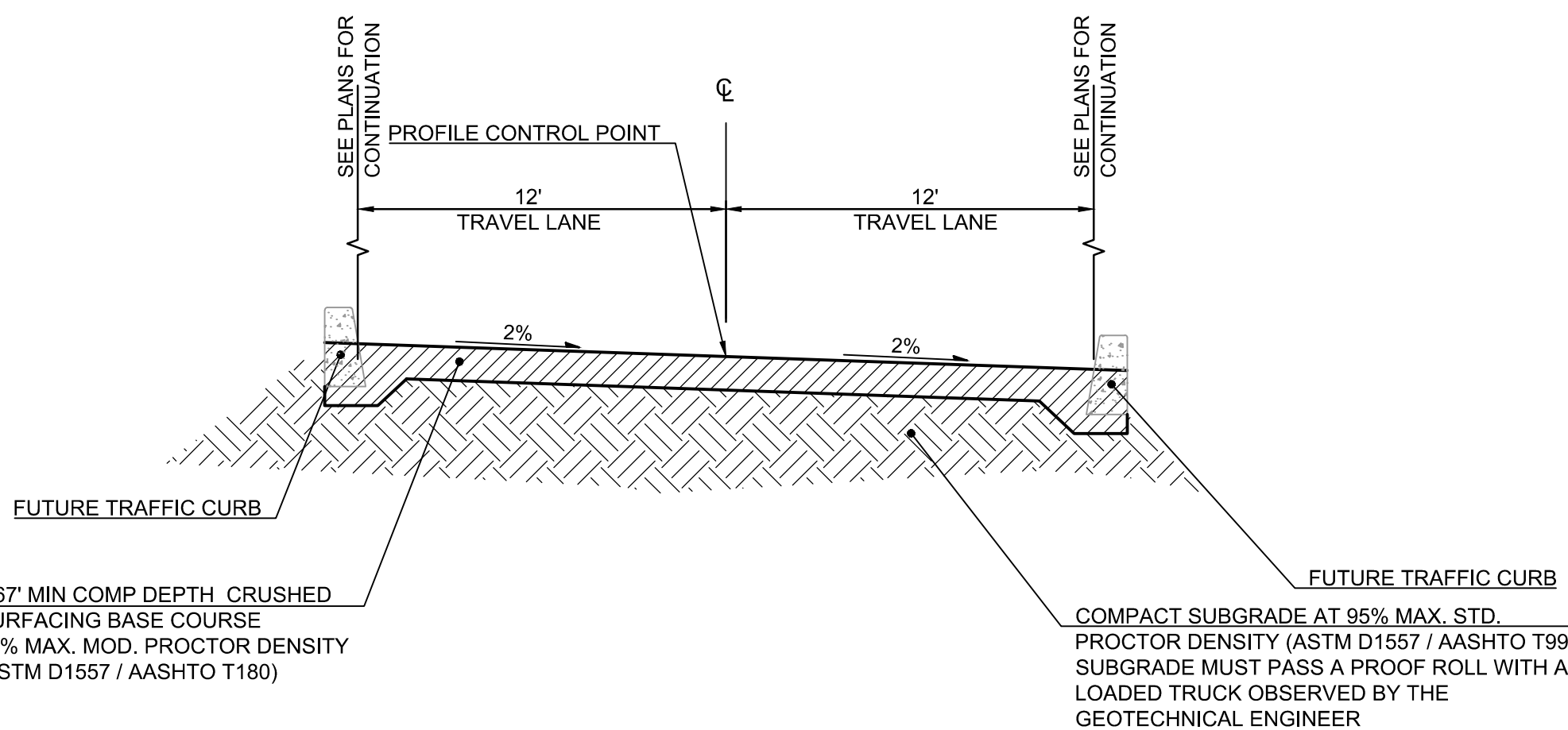
SEED MIX PER DEPARTMENT OF ECOLOGY BMP C120.

STORM FACILITIES INFORMATION						
DETENTION POND #	TOP AREA (SF)	BOTTOM AREA (SF)	TOP (EL.)	BOTTOM (EL.)	WQ-YEAR (EL.)	100-YEAR (EL.)
4*	1980	410	62.00	59.00	N/A	61.14
5*	3350	1090	63.00	60.00	N/A	62.11
6	4830	1230	62.00	57.00	58.83	59.56

* PONDS USED FOR ROOF RUNOFF DETENTION

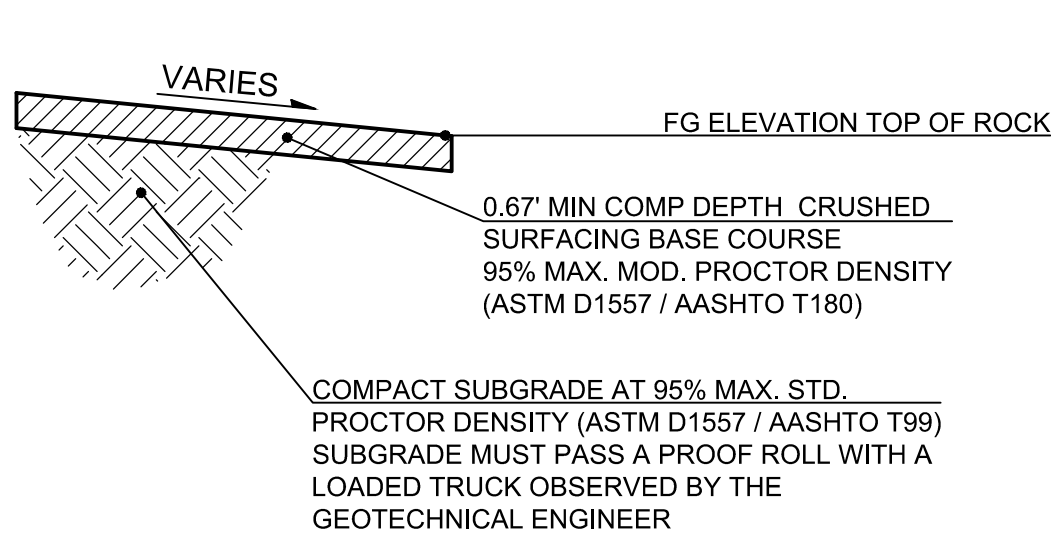
Typical Pond Cross-section Detail

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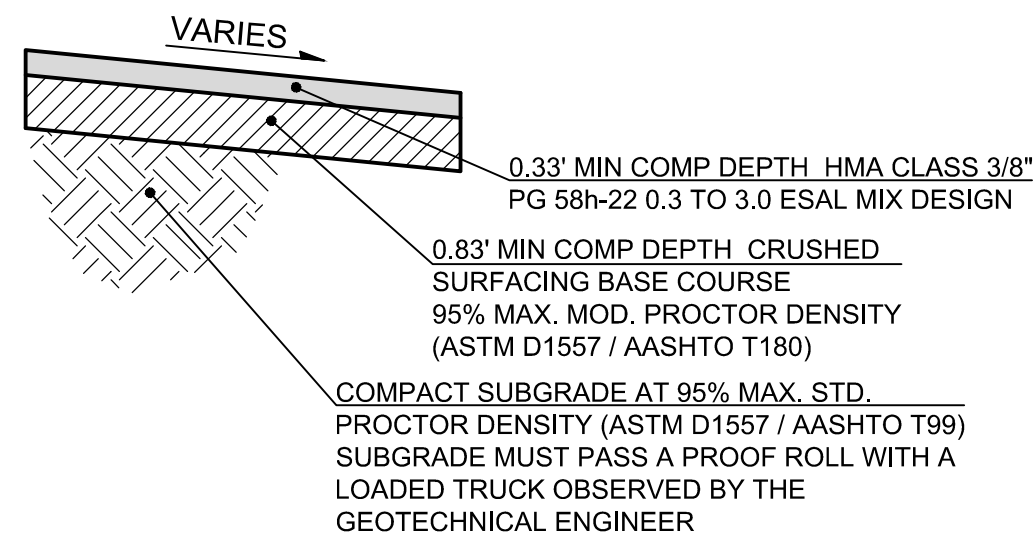
South Drive Typical Section

NTS



Base Course Typical Section

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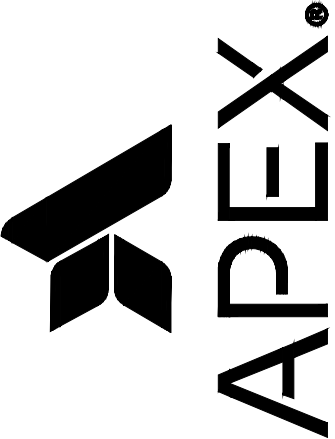


Grind and Inlay Typical Section

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TYPICAL SECTIONS FOR:
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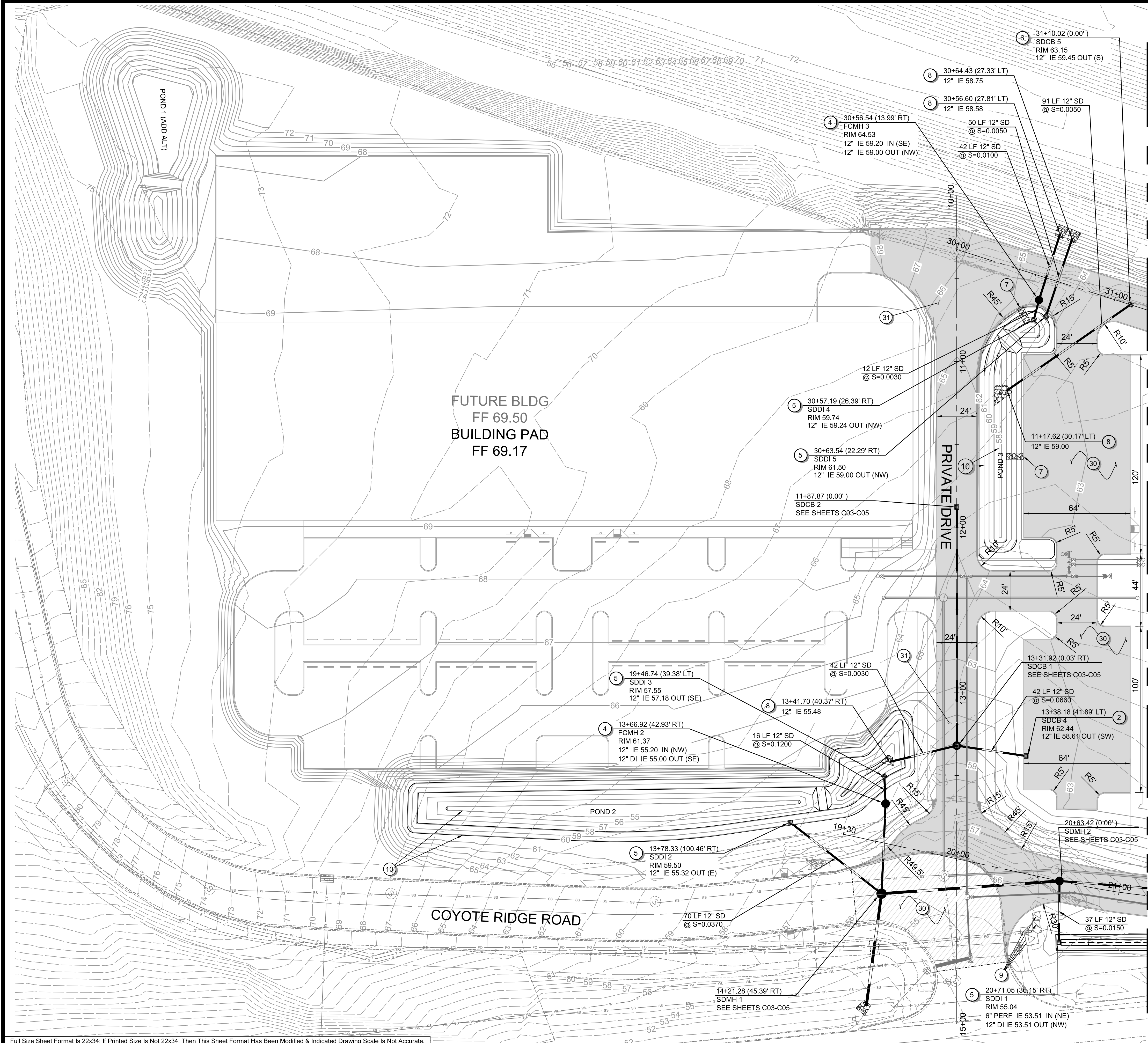
APRIL 2026
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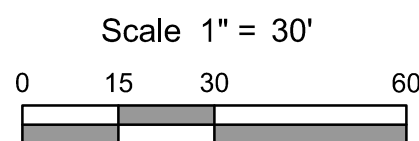
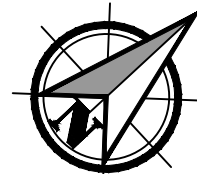
ST01

SHEET 11 OF 28

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MATCHLINE SEE SHEET C02



LEGEND	
	PROPOSED CRUSHED SURFACING BASE COURSE
	PROPOSED GRIND AND INLAY

GENERAL NOTES

- SEE SHEET G02 FOR PLAN SET LEGEND.
- SEE SHEET G03 FOR PLAN SET GENERAL NOTES.
- SEE SHEETS C03-C05 FOR STORM PROFILES AND C06-C07 FOR SWALE PROFILE.

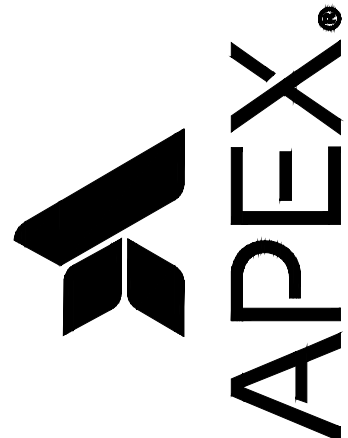
CONSTRUCTION NOTES - STORM SEWER

- INSTALL 48" MANHOLE TYPE 3 PER STANDARD PLAN B-15.60, WITH CIRCULAR FRAME AND COVER PER STANDARD PLAN B-30.70. SEE SHEETS D04 AND D05.
- INSTALL CATCH BASIN TYPE 2 PER STANDARD PLAN B-10.20, WITH RECTANGULAR FRAME AND GRATE PER STANDARD PLANS B-30.10 AND B-30.30. SEE SHEETS D03 AND D04. CATCH BASIN IS 48-INCH I.D. UNLESS NOTED OTHERWISE ON THE PLANS.
- INSTALL 48" MANHOLE TYPE 1 PER STANDARD PLAN B-15.20, WITH CIRCULAR FRAME AND COVER PER STANDARD PLAN B-30.70. SEE SHEETS D03 AND D04.
- INSTALL FLOW CONTROL MANHOLE PER DETAIL ON SHEET D02.
- INSTALL DITCH INLET PER DETAIL ON SHEET D01.
- INSTALL CATCH BASIN TYPE 1 PER STANDARD PLAN B-5.20. SEE SHEET D03.
- INSTALL 4-FOOT WIDE, 6-INCH THICK, QUARRY SPALLS PAD FROM TOP OF SWALE (AT LOCATION OF FUTURE CURB SCUPPER) TO BOTTOM OF SWALE PER DETAIL ON SHEET D01.
- CONSTRUCT STORM SEWER OUTLET WITH TRASH RACK PER DETAILS ON SHEET D02.
- RELOCATE AND ADJUST EXISTING UTILITY STRUCTURE TO FINISHED GRADE.
- CONSTRUCT POND PER DETAILS ON SHEET ST01.
- CONSTRUCT STORM SEWER OUTLET PER DETAIL ON SHEET D02. BEVEL END TO MATCH SLOPE.
- CONSTRUCT FLOW SPREADER EVERY 50 FEET PER DETAIL ON SHEET D01.
- CONSTRUCT 587'Lx3.5'W BIOFILTRATION SWALE @ S=0.0100 PER DETAILS ON SHEET D01. SEE SHEET C06-C07 FOR PROFILE.
- INSTALL 60" MANHOLE TYPE 3 PER STANDARD PLAN B-15.60, WITH CIRCULAR FRAME AND COVER PER STANDARD PLAN B-30.70. SEE SHEETS D04 AND D05.
- BEVEL END TO MATCH SLOPE AND INSTALL PIPE END WITH TRASH RACK PER DETAILS ON SHEET D02.

CONSTRUCTION NOTES - STREET

- BASE COURSE PER TYPICAL SECTION ON SHEET ST01.
- PRIVATE DRIVE PER TYPICAL SECTION ON SHEET ST01.
- NORTH DRIVE PER TYPICAL SECTION ON SHEET ST01.
- SOUTH DRIVE PER TYPICAL SECTION ON SHEET ST01.
- PROTECT EXISTING UTILITY STRUCTURES.
- GRIND AND INLAY PER TYPICAL SECTION ON SHEET ST01.

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STREET AND STORM PLAN FOR:
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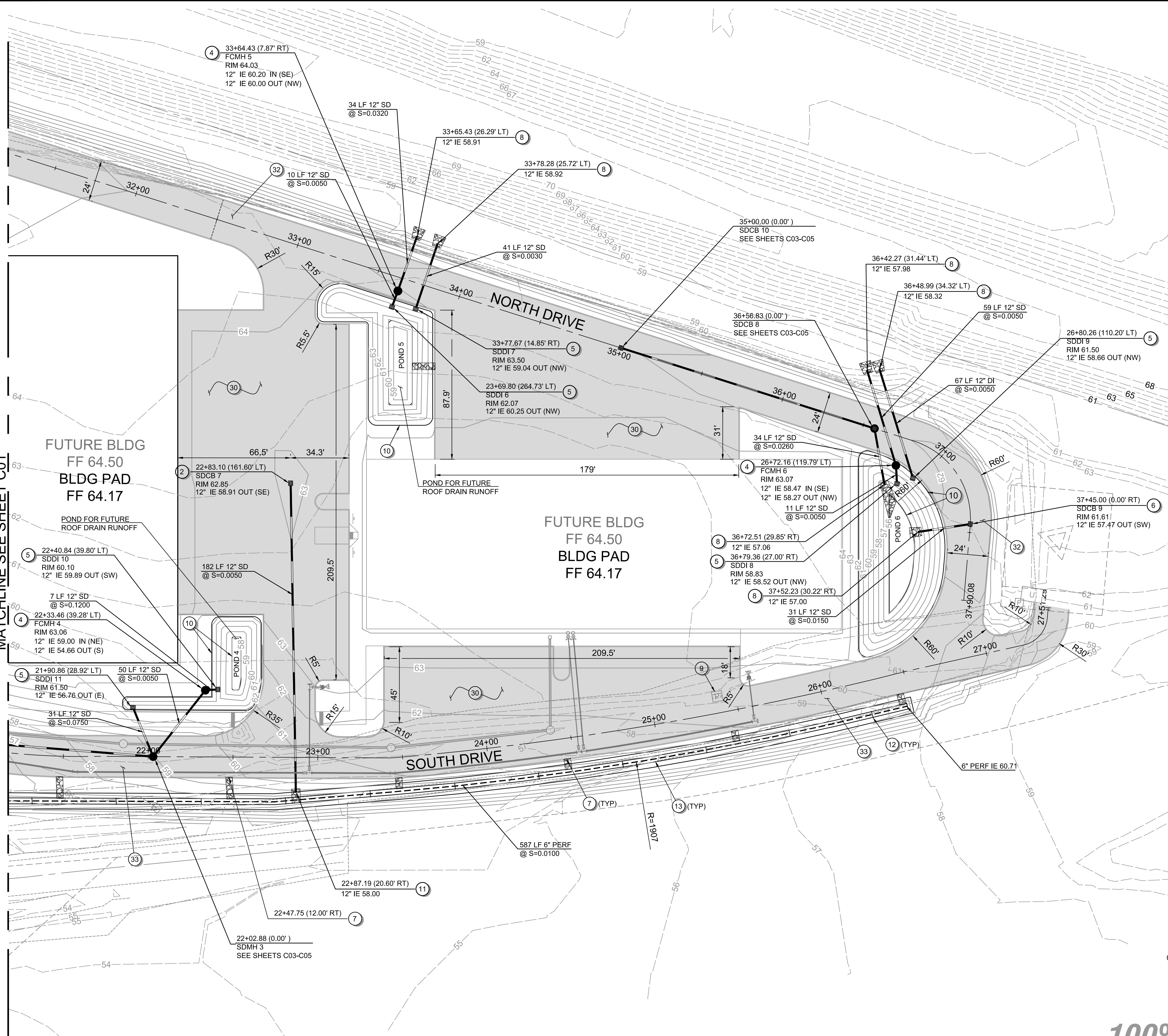
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SHEET **12** OF **28**

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MATCHLINE SEE SHEET C01



GENERAL NOTES

- SEE SHEET G02 FOR PLAN SET LEGEND.
- SEE SHEET G03 FOR PLAN SET GENERAL NOTES.
- SEE SHEETS C03-C05 FOR STORM PROFILES AND C06-C07 FOR SWALE PROFILE.

CONSTRUCTION NOTES - STORM SEWER

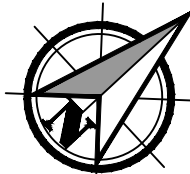
- INSTALL 48" MANHOLE TYPE 3 PER STANDARD PLAN B-15.60, WITH CIRCULAR FRAME AND COVER PER STANDARD PLAN B-30.70. SEE SHEETS D04 AND D05.
- INSTALL CATCH BASIN TYPE 2 PER STANDARD PLAN B-10.20, WITH RECTANGULAR FRAME AND GRATE PER STANDARD PLANS B-30.10 AND B-30.30. SEE SHEETS D03 AND D04. CATCH BASIN IS 48-INCH I.D. UNLESS NOTED OTHERWISE ON THE PLANS.
- INSTALL 48" MANHOLE TYPE 1 PER STANDARD PLAN B-15.20, WITH CIRCULAR FRAME AND COVER PER STANDARD PLAN B-30.70. SEE SHEETS D03 AND D04.
- INSTALL FLOW CONTROL MANHOLE PER DETAIL ON SHEET D02.
- INSTALL DITCH INLET PER DETAIL ON SHEET D01.
- INSTALL CATCH BASIN TYPE 1 PER STANDARD PLAN B-5.20. SEE SHEET D03.
- INSTALL 4-FOOT WIDE, 6-INCH THICK, QUARRY SPALLS PAD FROM TOP OF SWALE (AT LOCATION OF FUTURE CURB SCUPPER) TO BOTTOM OF SWALE PER DETAIL ON SHEET D01.
- CONSTRUCT STORM SEWER OUTLET WITH TRASH RACK PER DETAILS ON SHEET D02.
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- CONSTRUCT POND PER DETAILS ON SHEET ST01.
- CONSTRUCT STORM SEWER OUTLET PER DETAIL ON SHEET D02. BEVEL END TO MATCH SLOPE.
- CONSTRUCT FLOW SPREADER EVERY 50 FEET PER DETAIL ON SHEET D01.
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- INSTALL 60" MANHOLE TYPE 3 PER STANDARD PLAN B-15.60, WITH CIRCULAR FRAME AND COVER PER STANDARD PLAN B-30.70. SEE SHEETS D04 AND D05.
- BEVEL END TO MATCH SLOPE AND INSTALL PIPE END WITH TRASH RACK PER DETAILS ON SHEET D02.

CONSTRUCTION NOTES - STREET

- BASE COURSE PER TYPICAL SECTION ON SHEET ST01.
- PRIVATE DRIVE PER TYPICAL SECTION ON SHEET ST01.
- NORTH DRIVE PER TYPICAL SECTION ON SHEET ST01.
- SOUTH DRIVE PER TYPICAL SECTION ON SHEET ST01.
- PROTECT EXISTING UTILITY STRUCTURES.
- GRIND AND INLAY PER TYPICAL SECTION ON SHEET ST01.

LEGEND

- PROPOSED CRUSHED SURFACING BASE COURSE
- PROPOSED GRIND AND INLAY

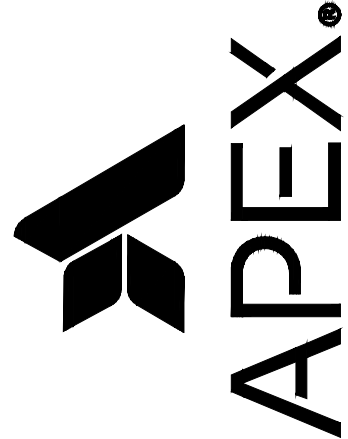


Scale 1" = 30'

0 15 30 60

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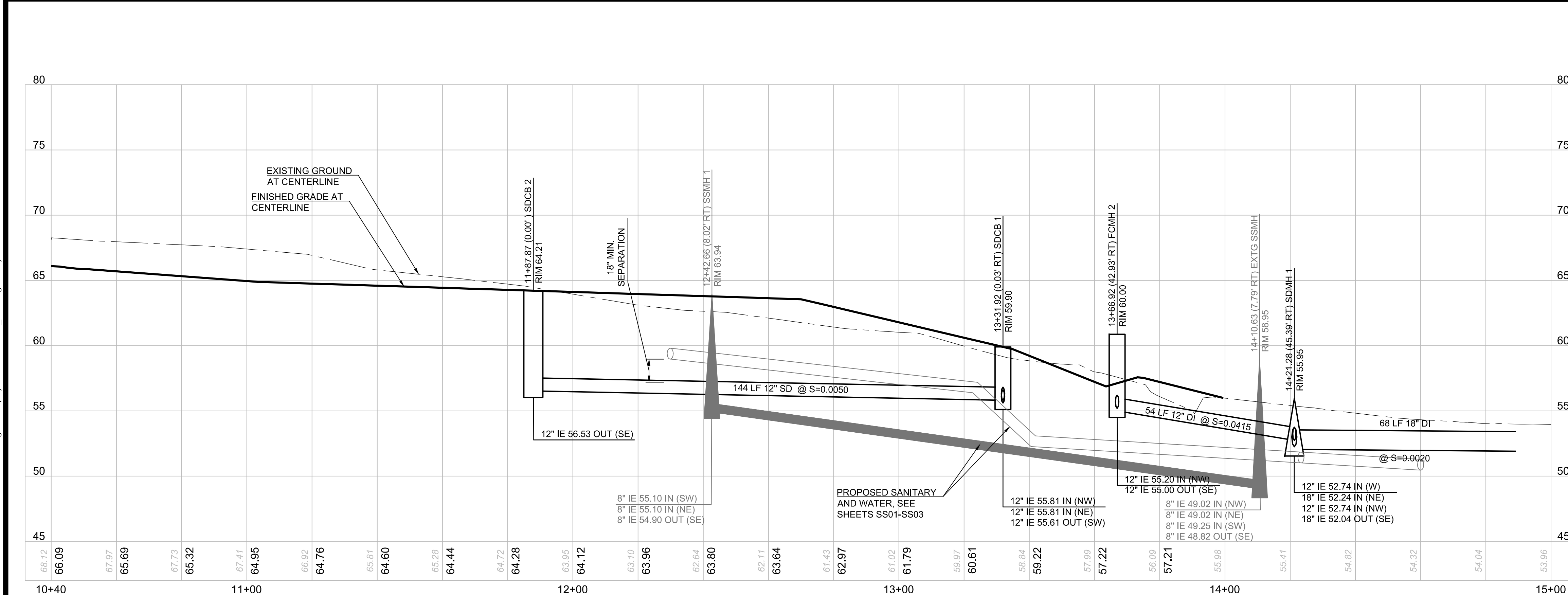
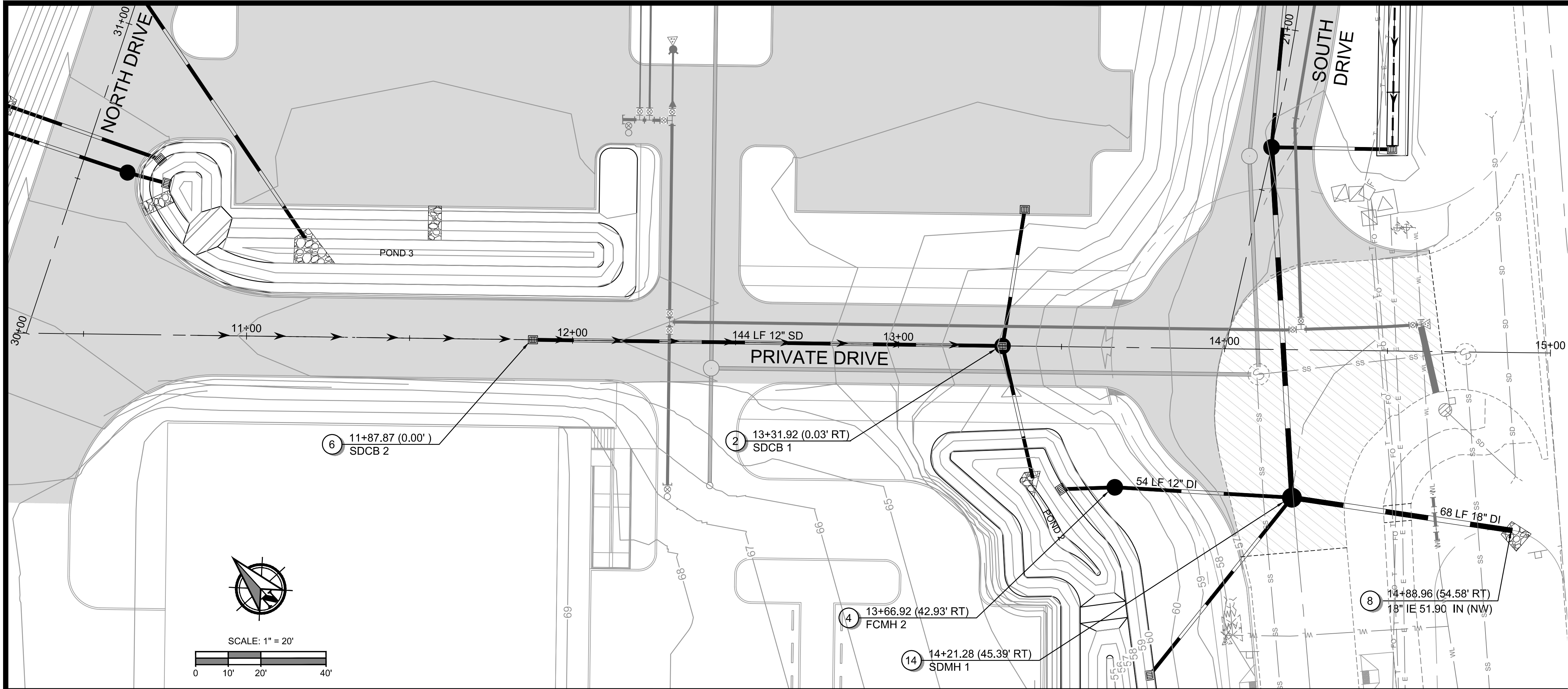
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SHEET 13 OF 28

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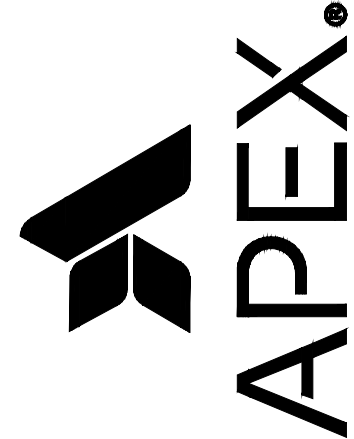
GENERAL NOTES

- SEE SHEET G02 FOR PLAN SET LEGEND.
- SEE SHEET G03 FOR PLAN SET GENERAL NOTES.
- SEE SHEETS C03-C05 FOR STORM PROFILES AND C06-C07 FOR SWALE PROFILE.

CONSTRUCTION NOTES - STORM SEWER

- INSTALL 48" MANHOLE TYPE 3 PER STANDARD PLAN B-15.60, WITH CIRCULAR FRAME AND COVER PER STANDARD PLAN B-30.70. SEE SHEETS D04 AND D05.
- INSTALL CATCH BASIN TYPE 2 PER STANDARD PLAN B-10.20, WITH RECTANGULAR FRAME AND GRATE PER STANDARD PLANS B-30.10 AND B-30.30. SEE SHEETS D03 AND D04. CATCH BASIN IS 48-INCH I.D. UNLESS NOTED OTHERWISE ON THE PLANS.
- INSTALL 48" MANHOLE TYPE 1 PER STANDARD PLAN B-15.20, WITH CIRCULAR FRAME AND COVER PER STANDARD PLAN B-30.70. SEE SHEETS D03 AND D04.
- INSTALL FLOW CONTROL MANHOLE PER DETAIL ON SHEET D02.
- INSTALL DITCH INLET PER DETAIL ON SHEET D01.
- INSTALL CATCH BASIN TYPE 1 PER STANDARD PLAN B-5.20. SEE SHEET D03.
- INSTALL 4-FOOT WIDE, 6-INCH THICK, QUARRY SPALLS PAD FROM TOP OF SWALE (AT LOCATION OF FUTURE CURB SCUPPER) TO BOTTOM OF SWALE PER DETAIL ON SHEET D01.
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- CONSTRUCT FLOW SPREADER EVERY 50 FEET PER DETAIL ON SHEET D01.
- CONSTRUCT 587'Lx3.5'W BIOFILTRATION SWALE @ S=0.0100 PER DETAILS ON SHEET D01. SEE SHEET C06-C07 FOR PROFILE.
- INSTALL 60" MANHOLE TYPE 3 PER STANDARD PLAN B-15.60, WITH CIRCULAR FRAME AND COVER PER STANDARD PLAN B-30.70. SEE SHEETS D04 AND D05.
- BEVEL END TO MATCH SLOPE AND INSTALL PIPE END WITH TRASH RACK PER DETAILS ON SHEET D02.

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PRIVATE DRIVE STORM PROFILE FOR:
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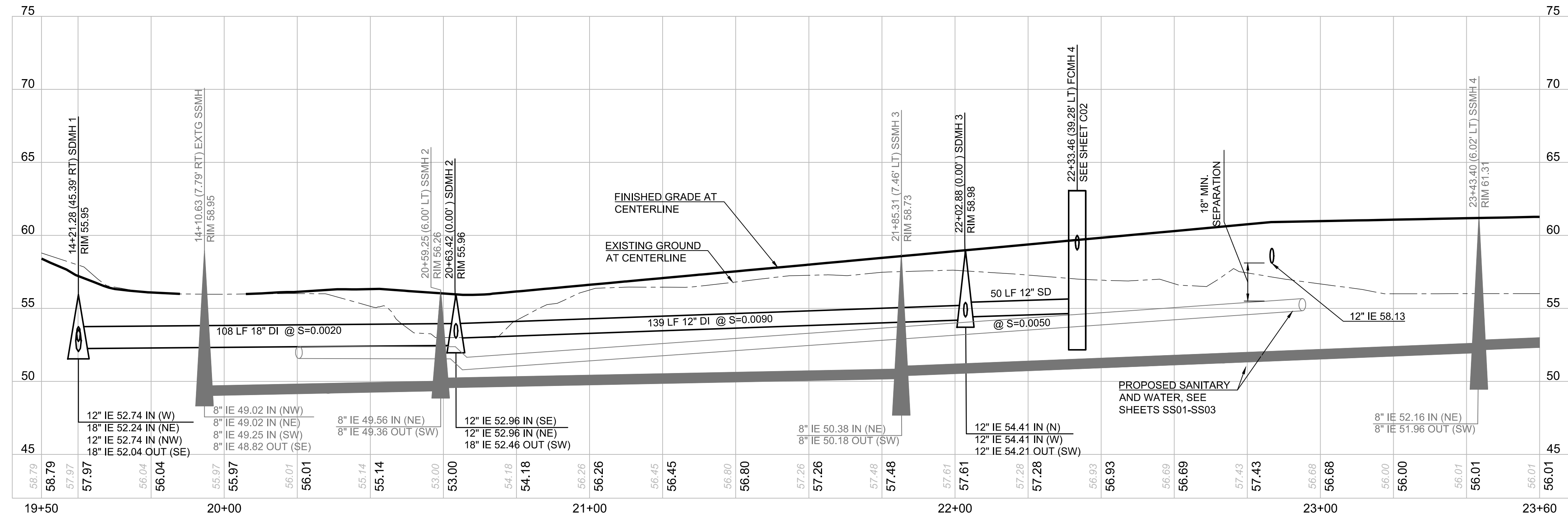
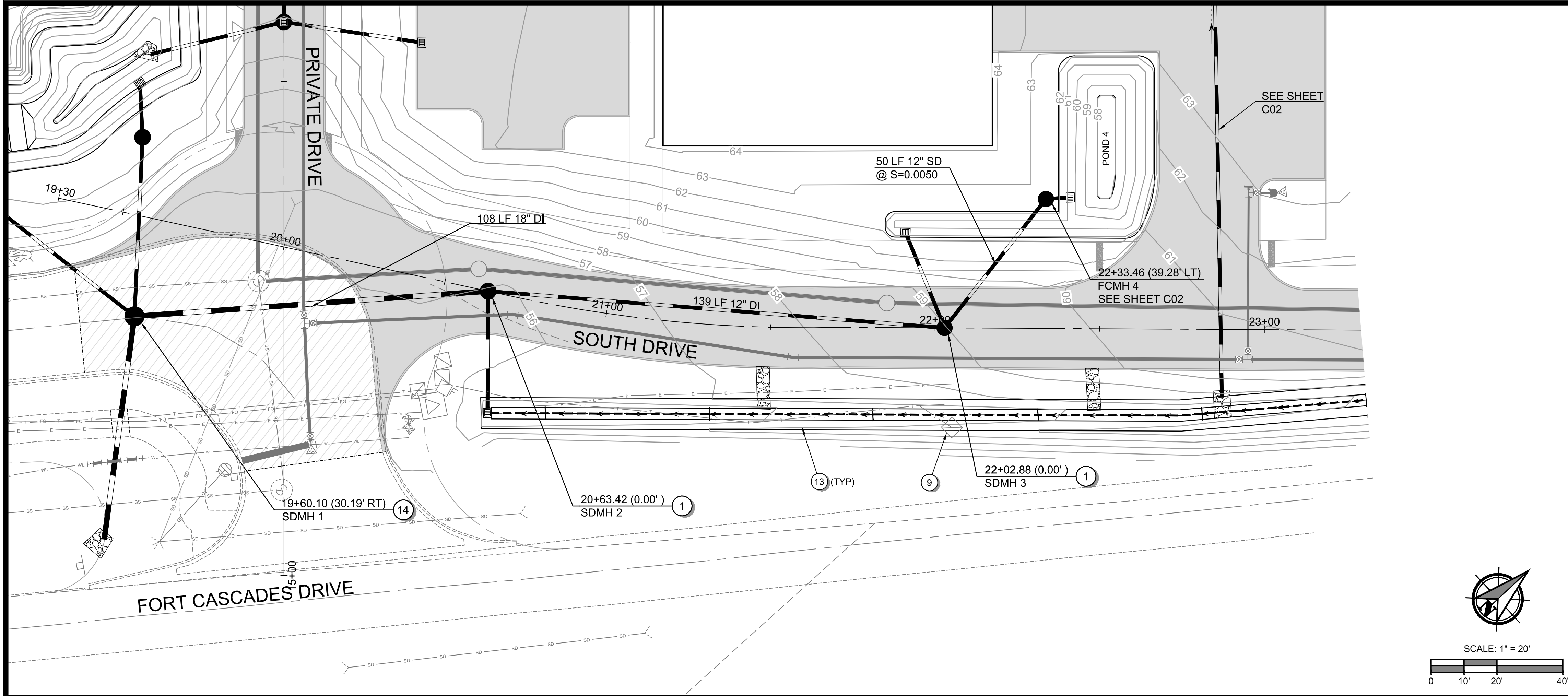
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C03

SHEET 14 OF 28

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GENERAL NOTES

- SEE SHEET G02 FOR PLAN SET LEGEND.
- SEE SHEET G03 FOR PLAN SET GENERAL NOTES.
- SEE SHEETS C03-C05 FOR STORM PROFILES AND C06-C07 FOR SWALE PROFILE.

CONSTRUCTION NOTES - STORM SEWER

- INSTALL 48" MANHOLE TYPE 3 PER STANDARD PLAN B-15.60, WITH CIRCULAR FRAME AND COVER PER STANDARD PLAN B-30.70. SEE SHEETS D04 AND D05.
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- INSTALL 48" MANHOLE TYPE 1 PER STANDARD PLAN B-15.20, WITH CIRCULAR FRAME AND COVER PER STANDARD PLAN B-30.70. SEE SHEETS D03 AND D04.
- INSTALL FLOW CONTROL MANHOLE PER DETAIL ON SHEET D02.
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- INSTALL CATCH BASIN TYPE 1 PER STANDARD PLAN B-5.20. SEE SHEET D03.
- INSTALL 4-FOOT WIDE, 6-INCH THICK, QUARRY SPALLS PAD FROM TOP OF SWALE (AT LOCATION OF FUTURE CURB SCUPPER) TO BOTTOM OF SWALE PER DETAIL ON SHEET D01.
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- BEVEL END TO MATCH SLOPE AND INSTALL PIPE END WITH TRASH RACK PER DETAILS ON SHEET D02.

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SOUTH DRIVE STORM PROFILE FOR:
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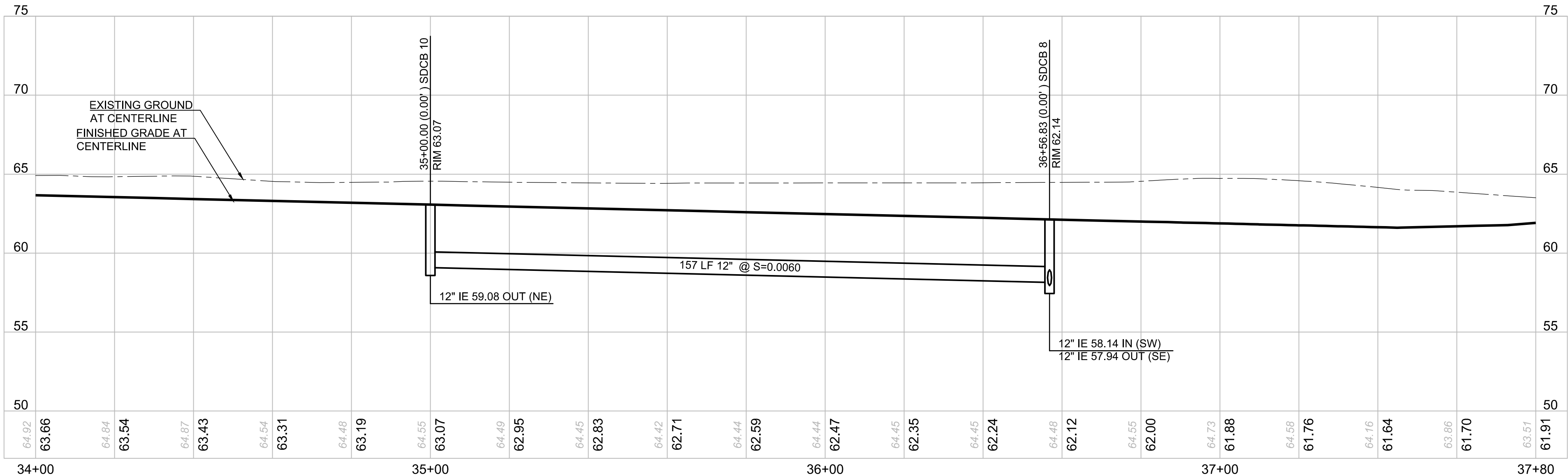
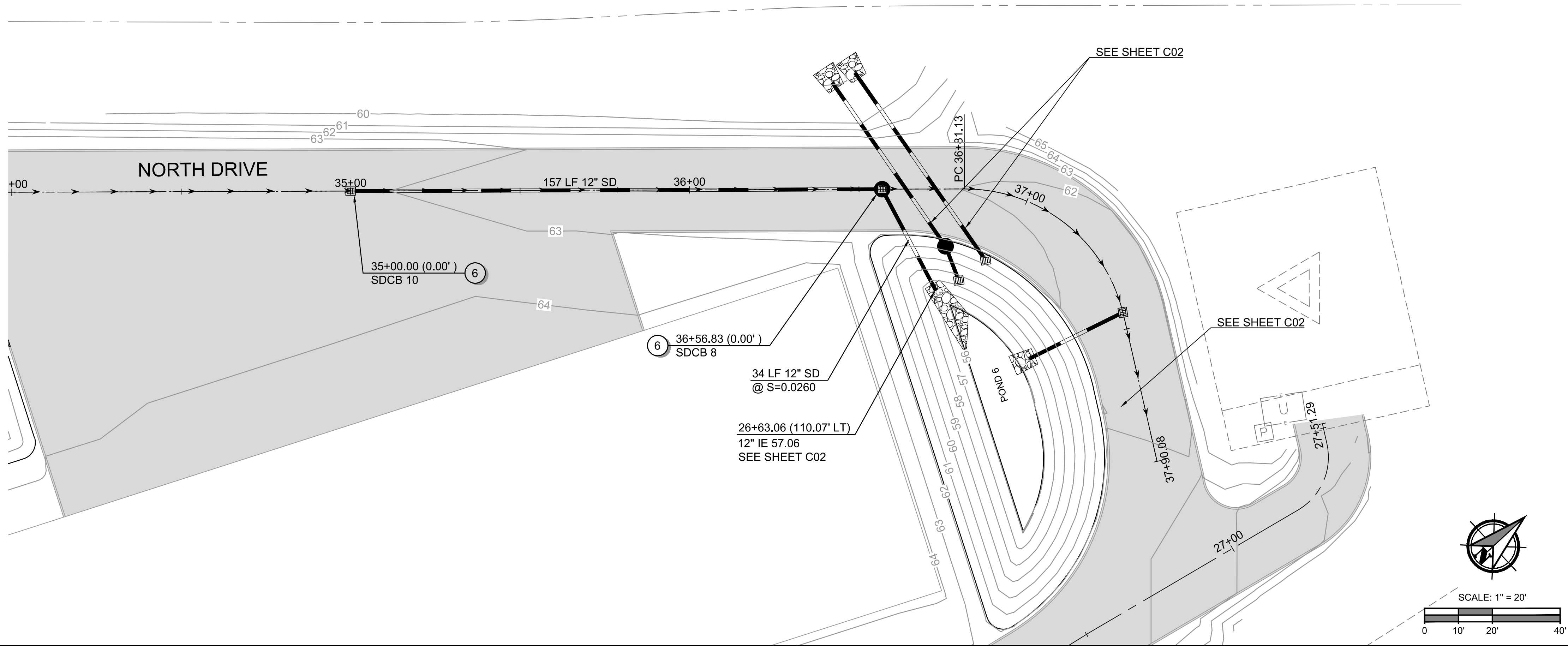
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SHEET **15** OF **28**

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Full Size Sheet Format Is 22x34; If Printed Size Is Not 22x34, Then This Sheet Format Has Been Modified & Indicated Drawing Scale Is Not Accurate.

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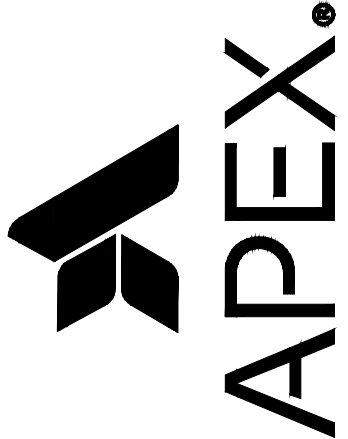
GENERAL NOTES

- SEE SHEET G02 FOR PLAN SET LEGEND.
- SEE SHEET G03 FOR PLAN SET GENERAL NOTES.
- SEE SHEETS C03-C05 FOR STORM PROFILES AND C06-C07 FOR SWALE PROFILE.

CONSTRUCTION NOTES - STORM SEWER

- INSTALL 48" MANHOLE TYPE 3 PER STANDARD PLAN B-15.60, WITH CIRCULAR FRAME AND COVER PER STANDARD PLAN B-30.70. SEE SHEETS D04 AND D05.
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- INSTALL 48" MANHOLE TYPE 1 PER STANDARD PLAN B-15.20, WITH CIRCULAR FRAME AND COVER PER STANDARD PLAN B-30.70. SEE SHEETS D03 AND D04.
- INSTALL FLOW CONTROL MANHOLE PER DETAIL ON SHEET D02.
- INSTALL DITCH INLET PER DETAIL ON SHEET D01.
- INSTALL CATCH BASIN TYPE 1 PER STANDARD PLAN B-5.20. SEE SHEET D03.
- INSTALL 4-FOOT WIDE, 6-INCH THICK, QUARRY SPALLS PAD FROM TOP OF SWALE (AT LOCATION OF FUTURE CURB SCUPPER) TO BOTTOM OF SWALE PER DETAIL ON SHEET D01.
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- INSTALL 60" MANHOLE TYPE 3 PER STANDARD PLAN B-15.60, WITH CIRCULAR FRAME AND COVER PER STANDARD PLAN B-30.70. SEE SHEETS D04 AND D05.
- BEVEL END TO MATCH SLOPE AND INSTALL PIPE END WITH TRASH RACK PER DETAILS ON SHEET D02.

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NORTH DRIVE STORM PROFILE FOR:
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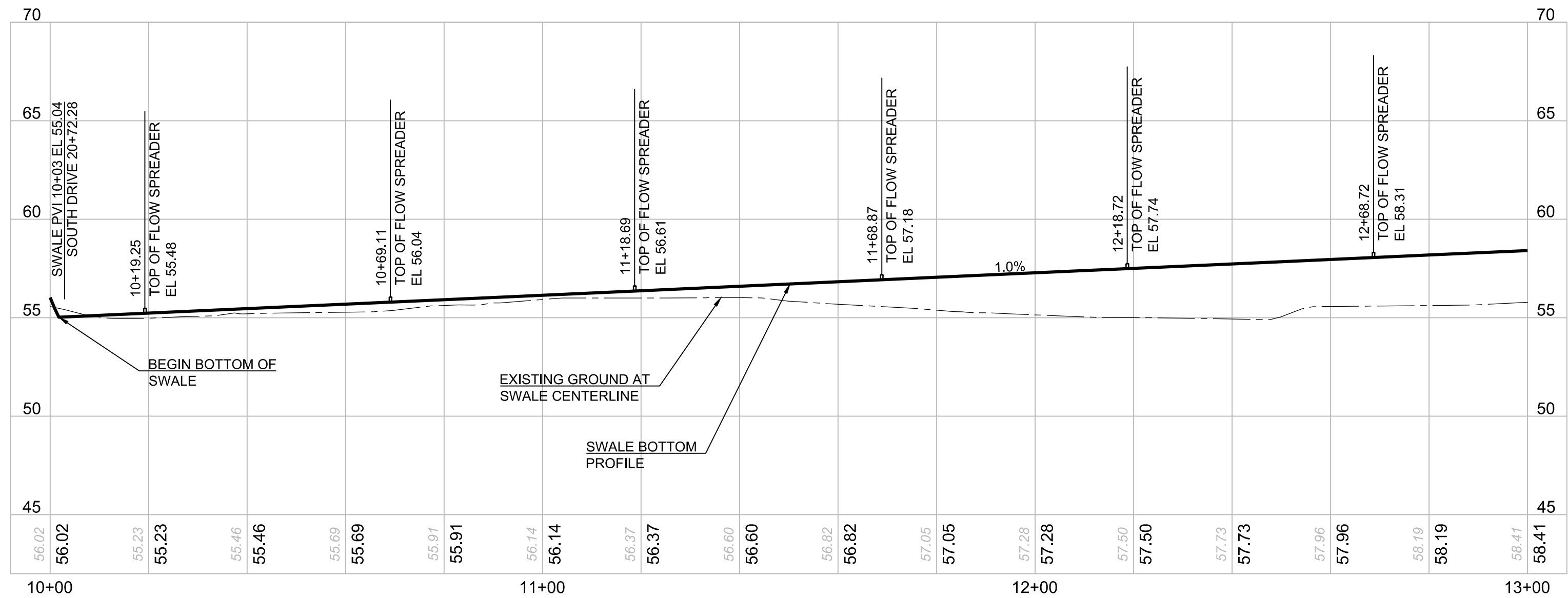
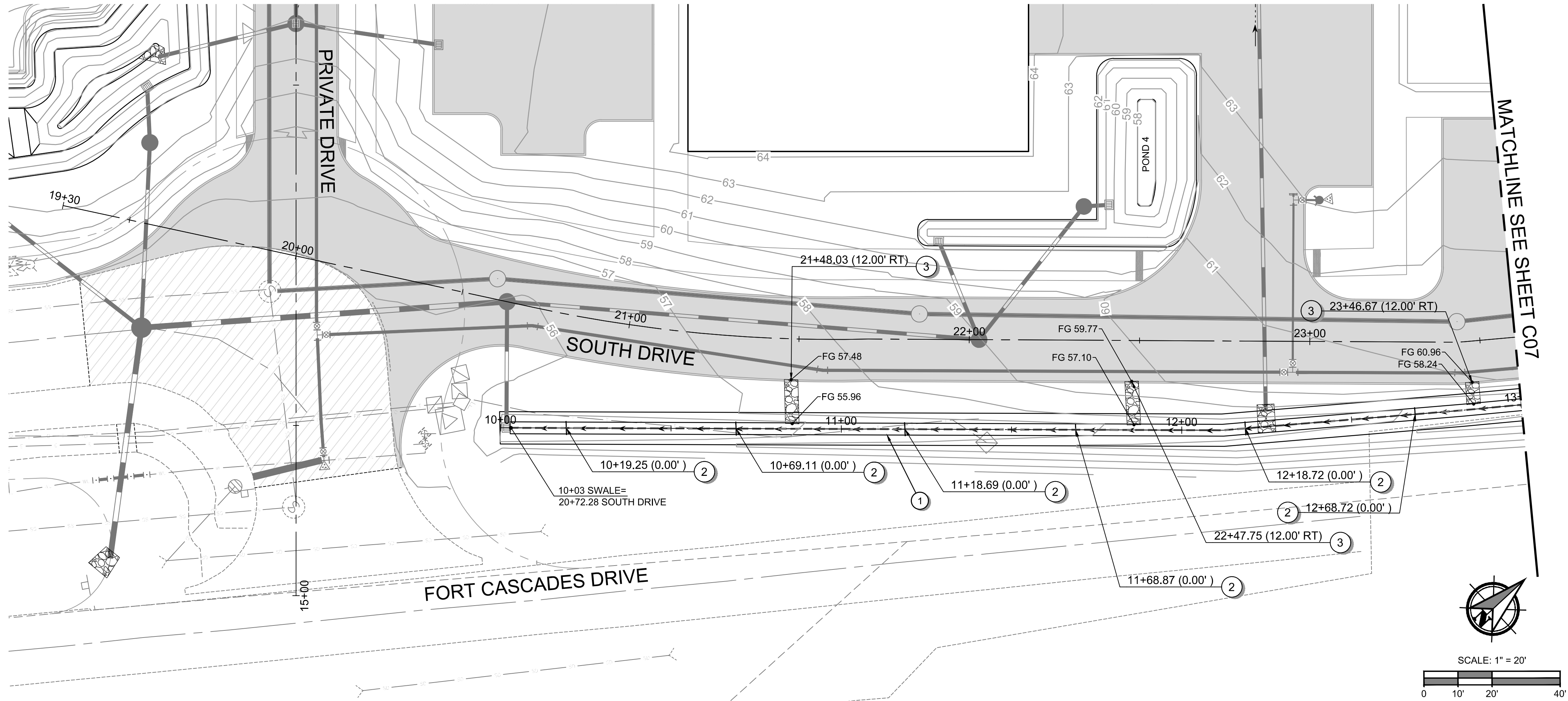
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GENERAL NOTES:

- SEE SHEET G03 FOR PROJECT'S GENERAL NOTES.
- SEE SHEET G02 FOR ABBREVIATIONS AND MASTER LEGEND.

SITE PLAN NOTES:

- PROPOSED SWALE PER TYPICAL SECTION, SEE SHEET ST01.
- PROPOSED FLOW SPREADER PER DETAIL, SEE SHEET D01.
- 4-FOOT WIDE, 6-INCH THICK, QUARRY SPALLS PAD FROM TOP OF SWALE (AT LOCATION OF FUTURE CURB SCUPPER) TO BOTTOM OF SWALE PER DETAIL ON SHEET D01.

BIOFILTRATION SWALE PROFILE FOR:

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A SITE LOCATED IN THE CITY OF NORTH BONNEVILLE, WASHINGTON



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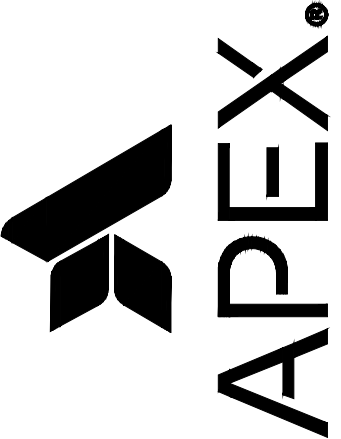
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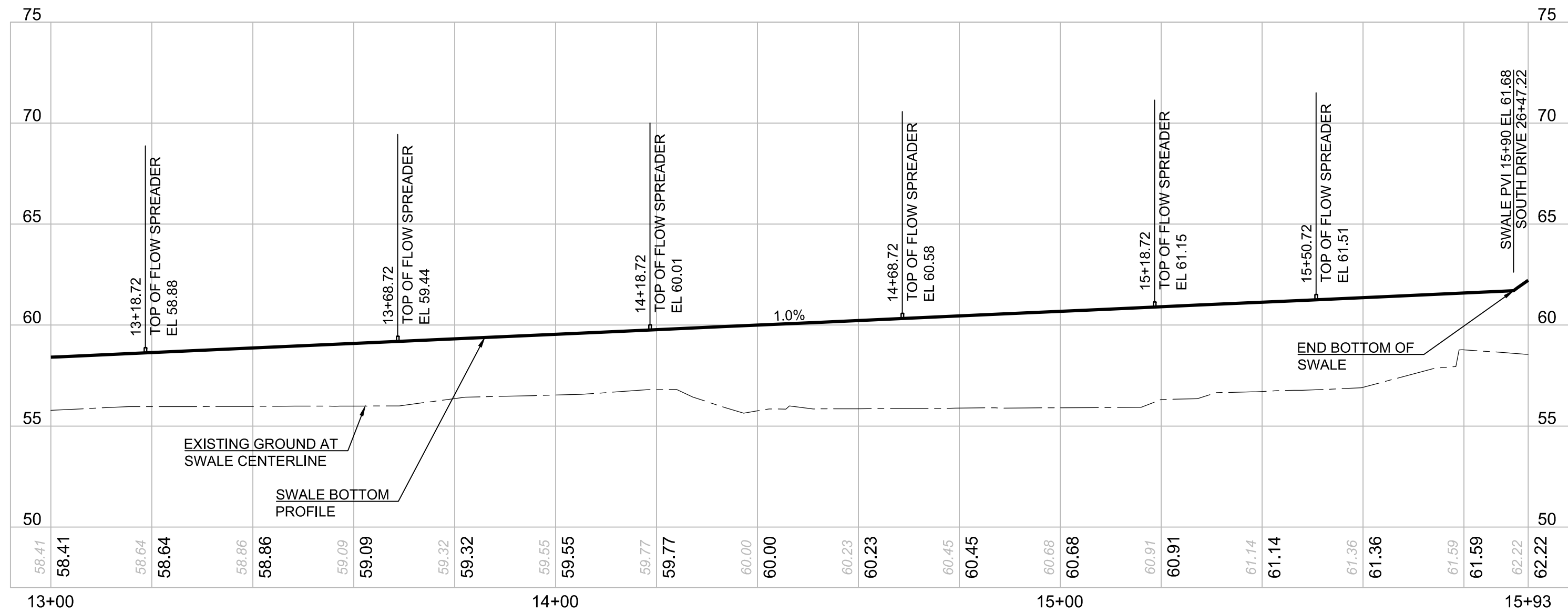
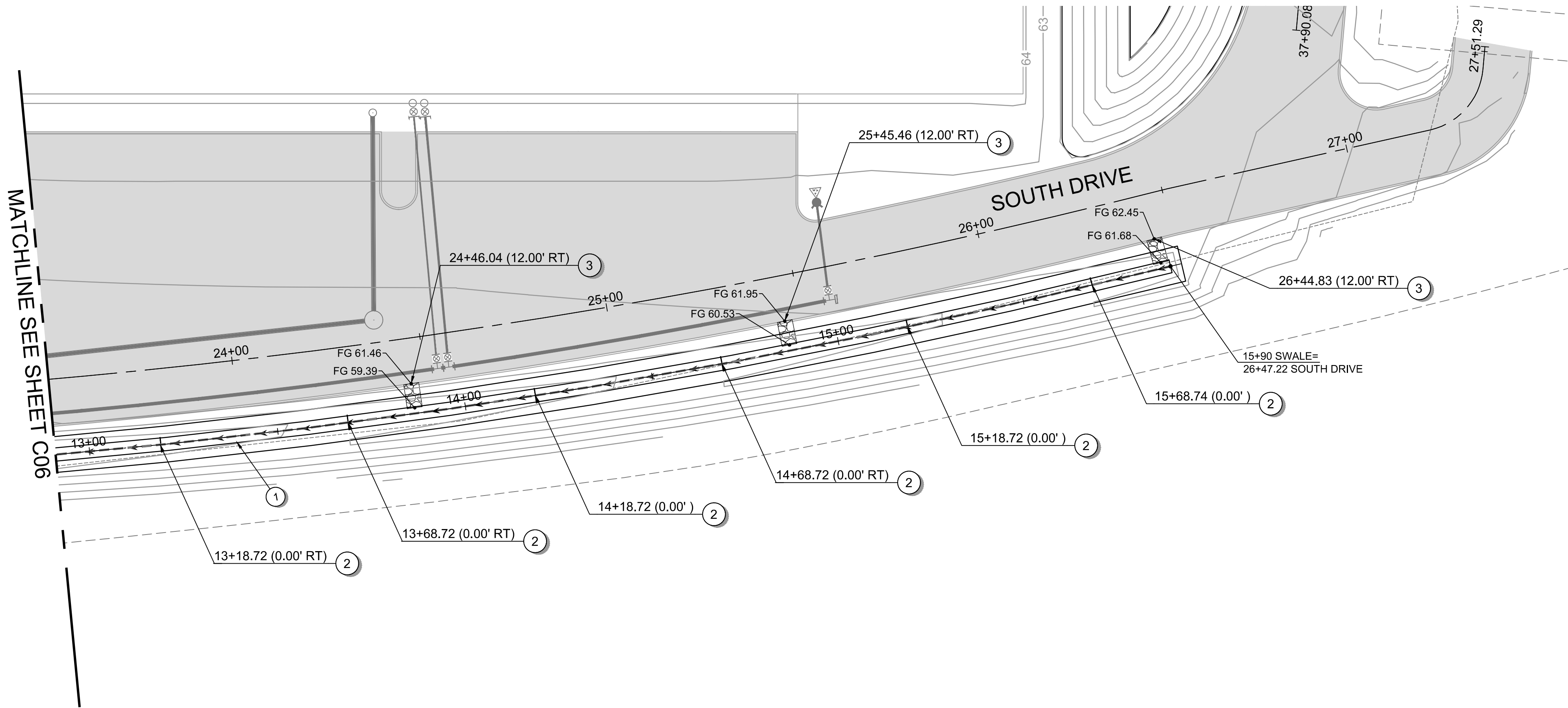
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GENERAL NOTES:

1. SEE SHEET G03 FOR PROJECT'S GENERAL NOTES.
2. SEE SHEET G02 FOR ABBREVIATIONS AND MASTER LEGEND.

SITE PLAN NOTES:

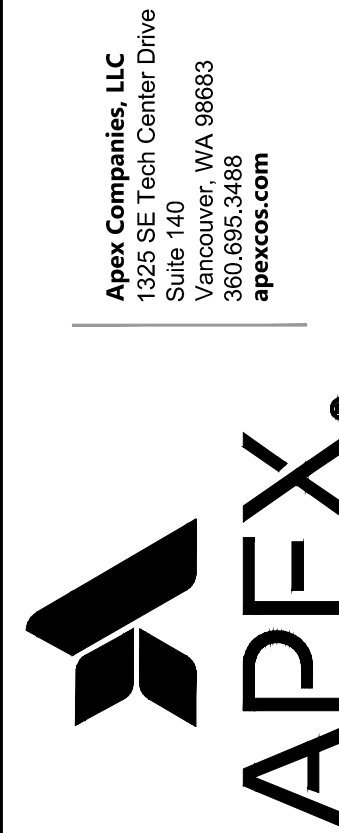
1. PROPOSED SWALE PER TYPICAL SECTION, SEE SHEET ST01.
2. PROPOSED FLOW SPREADER PER DETAIL, SEE SHEET D01.
3. 4-FOOT WIDE, 6-INCH THICK, QUARRY SPALLS PAD FROM TOP OF SWALE (AT LOCATION OF FUTURE CURB SCUPPER) TO BOTTOM OF SWALE PER DETAIL ON SHEET D01.

BIOFILTRATION SWALE PROFILE FOR:
CASCADES BUSINESS PARK INFRASTRUCTURE IMPROVEMENTS - PHASE 1
A SITE LOCATED IN THE CITY OF NORTH BONNEVILLE, WASHINGTON

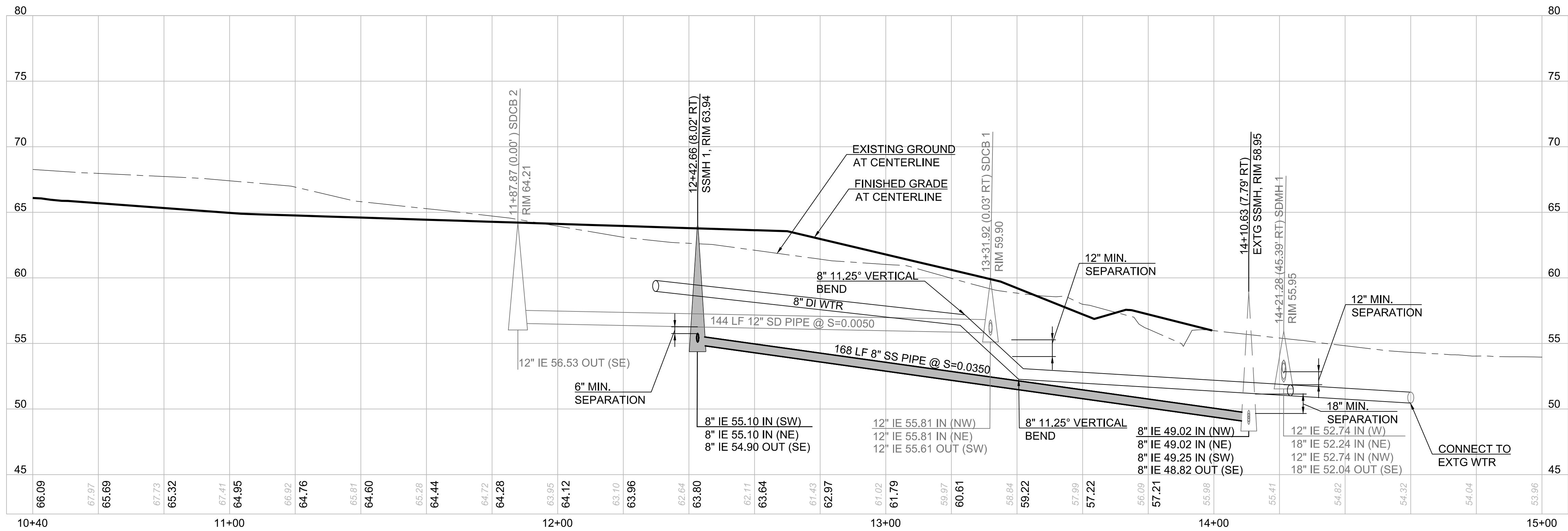
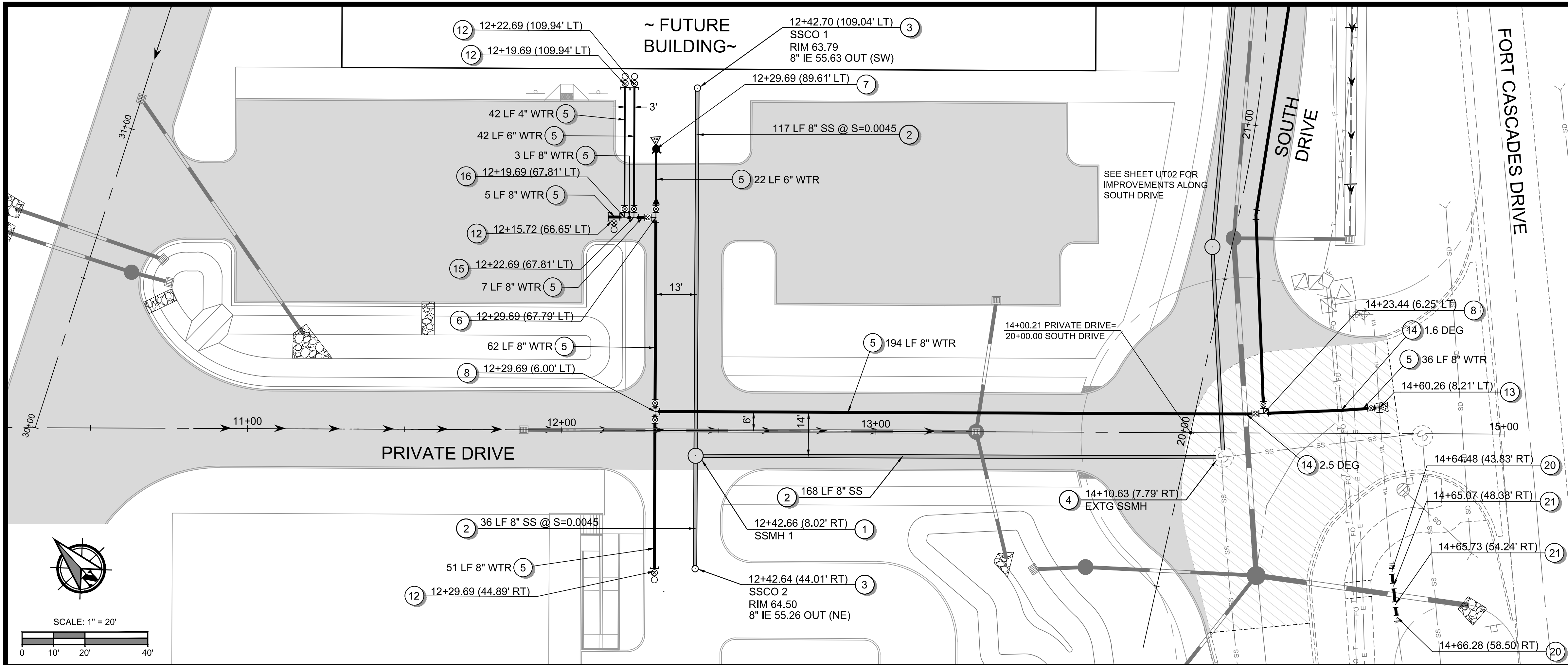


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GENERAL NOTES

- SEE SHEET G02 FOR PLAN SET LEGEND.
- SEE SHEET G03 FOR PLAN SET GENERAL NOTES.
- MECHANICALLY RESTRAIN ALL JOINTS ALONG MAINS AND FITTINGS THROUGHOUT THE PROPOSED WATER SYSTEM.
- ANY PROPOSED THRUST BLOCKS SHALL BE CONSTRUCTED PER WSDOT STANDARD PLAN B-90.40. SEE SHEET D05.

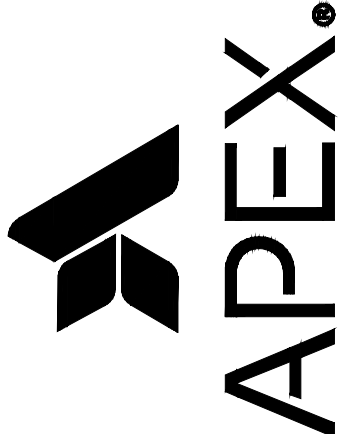
CONSTRUCTION NOTES - SANITARY SEWER

- INSTALL 48-INCH DIAM. MANHOLE TYPE 1 PER WSDOT STANDARD PLAN B-15.20, WITH CIRCULAR FRAME AND COVER PER WSDOT STANDARD PLAN B-30.70. SEE SHEETS D03 AND D04.
- INSTALL 8-INCH DIAM. PVC SANITARY SEWER PIPE. PIPE LENGTHS AND SLOPES AS SHOWN ON PLANS.
- INSTALL 8-INCH SANITARY SEWER CLEANOUT PER WSDOT STANDARD PLAN B-85.40. SEE SHEET D05.
- CONNECT TO EXTG SANITARY SEWER MANHOLE.

CONSTRUCTION NOTES - WATER

- INSTALL PIPE FOR WATER MAIN. PIPE DIAMETER AND LENGTH AS SHOWN ON PLANS. SEE GENERAL NOTES FOR PIPE MATERIAL REQUIREMENTS.
- INSTALL (1) 8-INCH MJ TEE
(1) 6-INCH MJ GATE VALVE
(1) 8-INCH MJ GATE VALVE
(1) 8-INCH x 6-INCH MJ REDUCER
- INSTALL HYDRANT ASSEMBLY PER "TYPE A" DETAIL ON WSDOT STANDARD PLAN B-90.10. SEE SHEET D05.
- INSTALL (1) 8-INCH MJ TEE
(2) 8-INCH MJ GATE VALVES.
- INSTALL (1) 8-INCH MJ TEE
(2) 8-INCH MJ GATE VALVES
(1) 8-INCH MJ PLUG
- INSTALL 8-INCH MJ 11 1/4 DEG BEND.
- INSTALL 6-INCH MJ 90 DEG BEND.
- INSTALL 2-INCH BLOWOFF ASSEMBLY WITH GATE VALVE PER WSDOT STANDARD PLAN B-90.20. SEE SHEET D05.
- AFTER NEW WATER MAINS HAVE BEEN TESTED IN ACCORDANCE WITH SPECIFICATION SECTION 7-09.3, AND TEST RESULTS HAVE BEEN APPROVED BY THE ENGINEER, CONNECT TO EXTG 10-INCH WATER MAIN WITH (1) 8-INCH x 10-INCH TAPPING TEE W/ THRUST BLOCK
(1) 8-INCH FLG x MJ GATE VALVE.
- DEFLECT PIPE PER RADIUS OR ANGLE SHOWN ON PLANS. SEE GENERAL NOTES FOR PIPE DEFLECTION REQUIREMENTS.
- INSTALL (1) 8-INCH x 6-INCH MJ TEE
(1) 6-INCH MJ GATE VALVE
- INSTALL (1) 8-INCH x 4-INCH MJ TEE
(1) 4-INCH MJ GATE VALVE
- INSTALL (1) 8-INCH MJ x 6-INCH FLG TEE
(1) 6-INCH FLG x MJ GATE VALVE
(1) 8-INCH MJ PLUG
- INSTALL (1) 8-INCH x 6-INCH MJ TEE
(1) 8-INCH MJ GATE VALVE
(1) 6-INCH MJ GATE VALVE
- INSTALL (1) 8-INCH MJ x 6-INCH FLG TEE
(1) 6-INCH FLG x MJ GATE VALVE
- AFTER NEW WATER MAINS HAVE BEEN TESTED IN ACCORDANCE WITH SPECIFICATION SECTION 7-09.3, AND TEST RESULTS HAVE BEEN APPROVED BY THE ENGINEER, CONNECT TO EXTG 10-INCH WATER MAIN WITH 10-INCH MJ 45 DEG VERTICAL BEND.
- INSTALL 10-INCH MJ 45 DEG VERTICAL BEND. ENSURE 12-INCH MINIMUM SEPARATION BETWEEN PROPOSED 18-INCH STORM PIPE.

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SANITARY SEWER AND WATER PLAN AND PROFILE FOR:
CASCADES BUSINESS PARK INFRASTRUCTURE IMPROVEMENTS - PHASE 1
A SITE LOCATED IN THE CITY OF NORTH BONNEVILLE, WASHINGTON



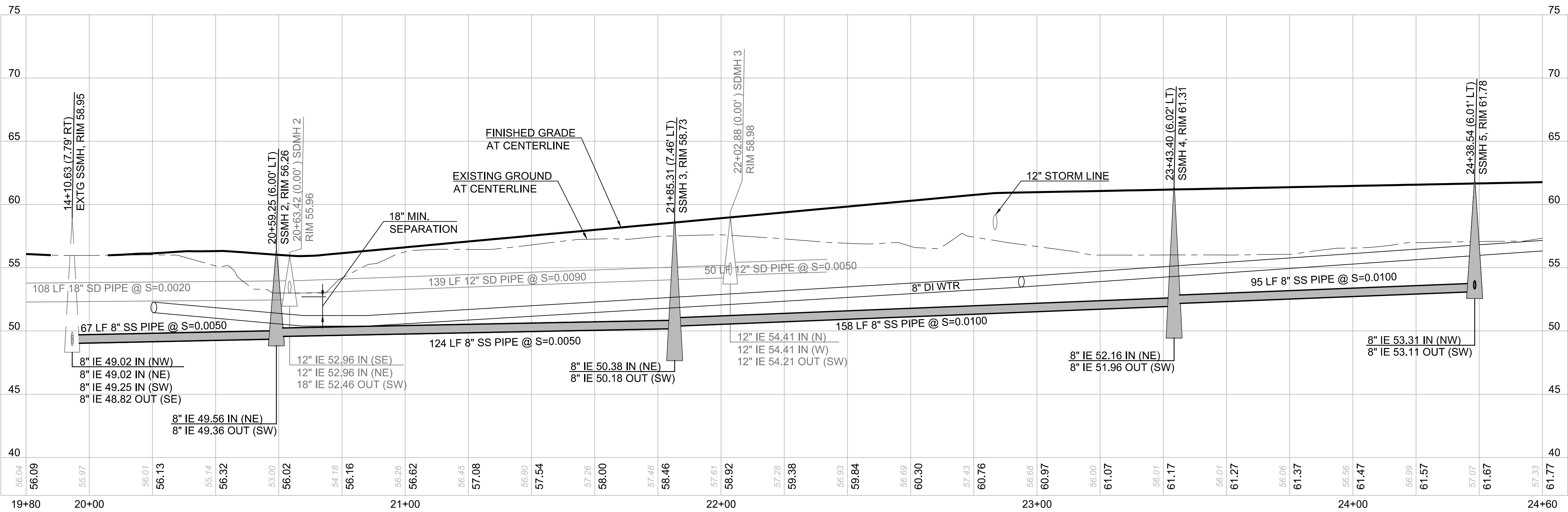
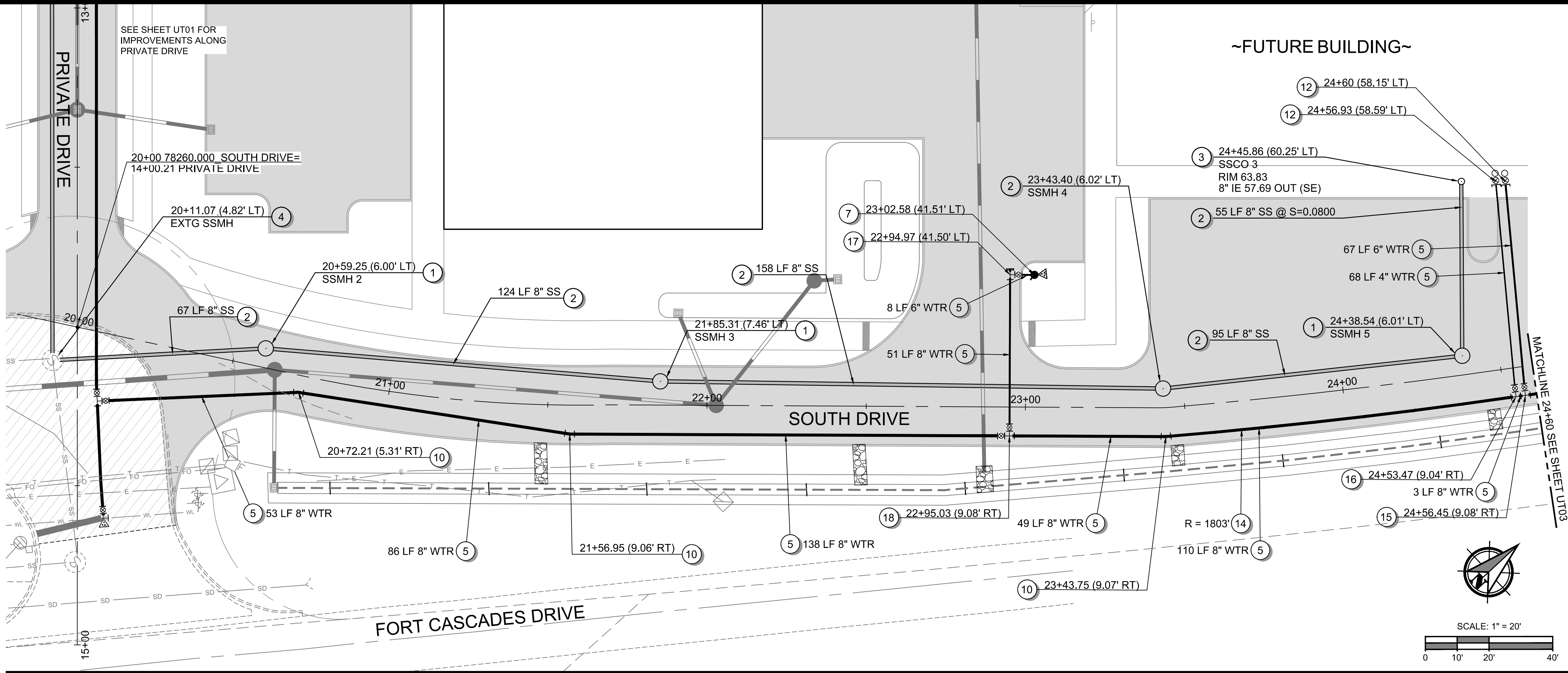
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APRIL 2026
78260.000

SHEET ID
UT01

SHEET **19** OF **28**

100% PLANS

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GENERAL NOTES

- SEE SHEET G02 FOR PLAN SET LEGEND.
- SEE SHEET G03 FOR PLAN SET GENERAL NOTES.
- MECHANICALLY RESTRAIN ALL JOINTS ALONG MAINS AND FITTINGS THROUGHOUT THE PROPOSED WATER SYSTEM.
- ANY PROPOSED THRUST BLOCKS SHALL BE CONSTRUCTED PER WSDOT STANDARD PLAN B-90.40. SEE SHEET D05.

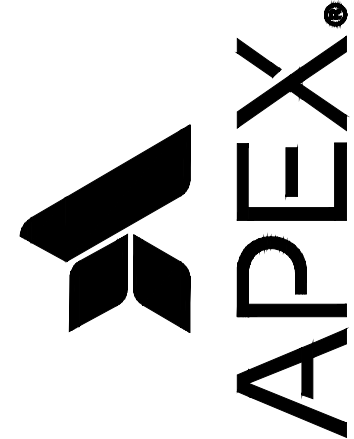
CONSTRUCTION NOTES - SANITARY SEWER

- INSTALL 48-INCH DIAM. MANHOLE TYPE 1 PER WSDOT STANDARD PLAN B-15.20, WITH CIRCULAR FRAME AND COVER PER WSDOT STANDARD PLAN B-30.70. SEE SHEETS D03 AND D04.
- INSTALL 8-INCH DIAM. PVC SANITARY SEWER PIPE. PIPE LENGTHS AND SLOPES AS SHOWN ON PLANS.
- INSTALL 8-INCH SANITARY SEWER CLEANOUT PER WSDOT STANDARD PLAN B-85.40. SEE SHEET D05.
- CONNECT TO EXTG SANITARY SEWER MANHOLE.

CONSTRUCTION NOTES - WATER

- INSTALL PIPE FOR WATER MAIN. PIPE DIAMETER AND LENGTH AS SHOWN ON PLANS. SEE GENERAL NOTES FOR PIPE MATERIAL REQUIREMENTS.
- INSTALL (1) 8-INCH MJ TEE
(1) 6-INCH MJ GATE VALVE
(1) 8-INCH MJ GATE VALVE
(1) 8-INCH x 6-INCH MJ REDUCER
- INSTALL HYDRANT ASSEMBLY PER "TYPE A" DETAIL ON WSDOT STANDARD PLAN B-90.10. SEE SHEET D05.
- INSTALL (1) 8-INCH MJ TEE
(2) 8-INCH MJ GATE VALVES.
- INSTALL (1) 8-INCH MJ TEE
(2) 8-INCH MJ GATE VALVES
(1) 8-INCH MJ PLUG
- INSTALL 8-INCH MJ 11 1/4 DEG BEND.
- INSTALL 6-INCH MJ 90 DEG BEND.
- INSTALL 2-INCH BLOWOFF ASSEMBLY WITH GATE VALVE PER WSDOT STANDARD PLAN B-90.20. SEE SHEET D05.
- AFTER NEW WATER MAINS HAVE BEEN TESTED IN ACCORDANCE WITH SPECIFICATION SECTION 7-09.3, AND TEST RESULTS HAVE BEEN APPROVED BY THE ENGINEER, CONNECT TO EXTG 10-INCH WATER MAIN WITH
(1) 8-INCH X 10-INCH TAPPING TEE TEE w/ THRUST BLOCK
(1) 8-INCH FLG x MJ GATE VALVE.
- DEFLECT PIPE PER RADIUS OR ANGLE SHOWN ON PLANS. SEE GENERAL NOTES FOR PIPE DEFLECTION REQUIREMENTS.
- INSTALL (1) 8-INCH x 6-INCH MJ TEE
(1) 6-INCH MJ GATE VALVE
- INSTALL (1) 8-INCH x 4-INCH MJ TEE
(1) 4-INCH MJ GATE VALVE
- INSTALL (1) 8-INCH MJ x 6-INCH FLG TEE
(1) 6-INCH FLG x MJ GATE VALVE
(1) 8-INCH MJ PLUG
- INSTALL (1) 8-INCH x 6-INCH MJ TEE
(1) 8-INCH MJ GATE VALVE
(1) 6-INCH MJ GATE VALVE
- INSTALL (1) 8-INCH MJ x 6-INCH FLG TEE
(1) 6-INCH FLG x MJ GATE VALVE
- AFTER NEW WATER MAINS HAVE BEEN TESTED IN ACCORDANCE WITH SPECIFICATION SECTION 7-09.3, AND TEST RESULTS HAVE BEEN APPROVED BY THE ENGINEER, CONNECT TO EXTG 10-INCH WATER MAIN WITH 10-INCH MJ 45 DEG VERTICAL BEND.
- INSTALL 10-INCH MJ 45 DEG VERTICAL BEND. ENSURE 12-INCH MINIMUM SEPARATION BETWEEN PROPOSED 18-INCH STORM PIPE.

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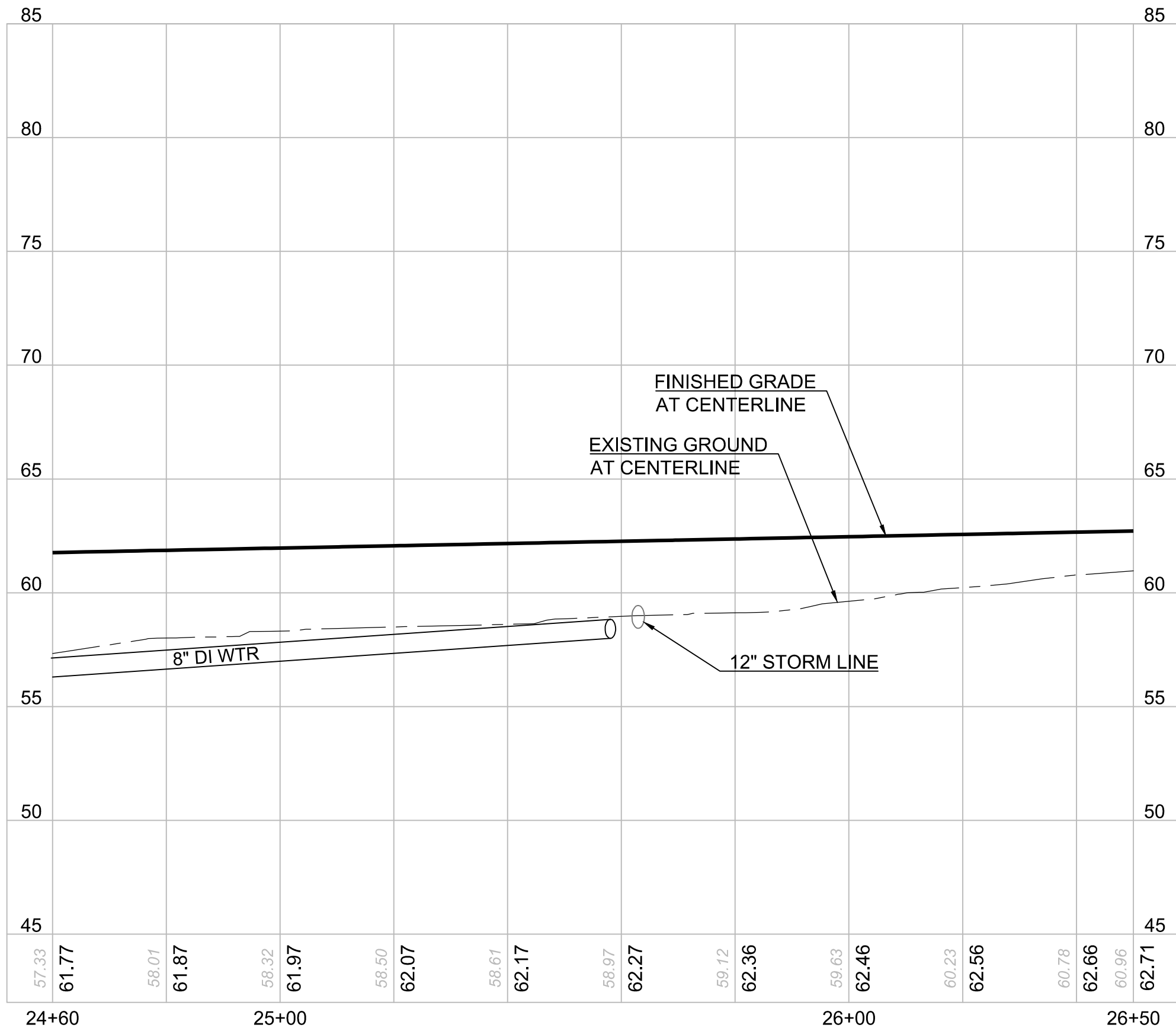
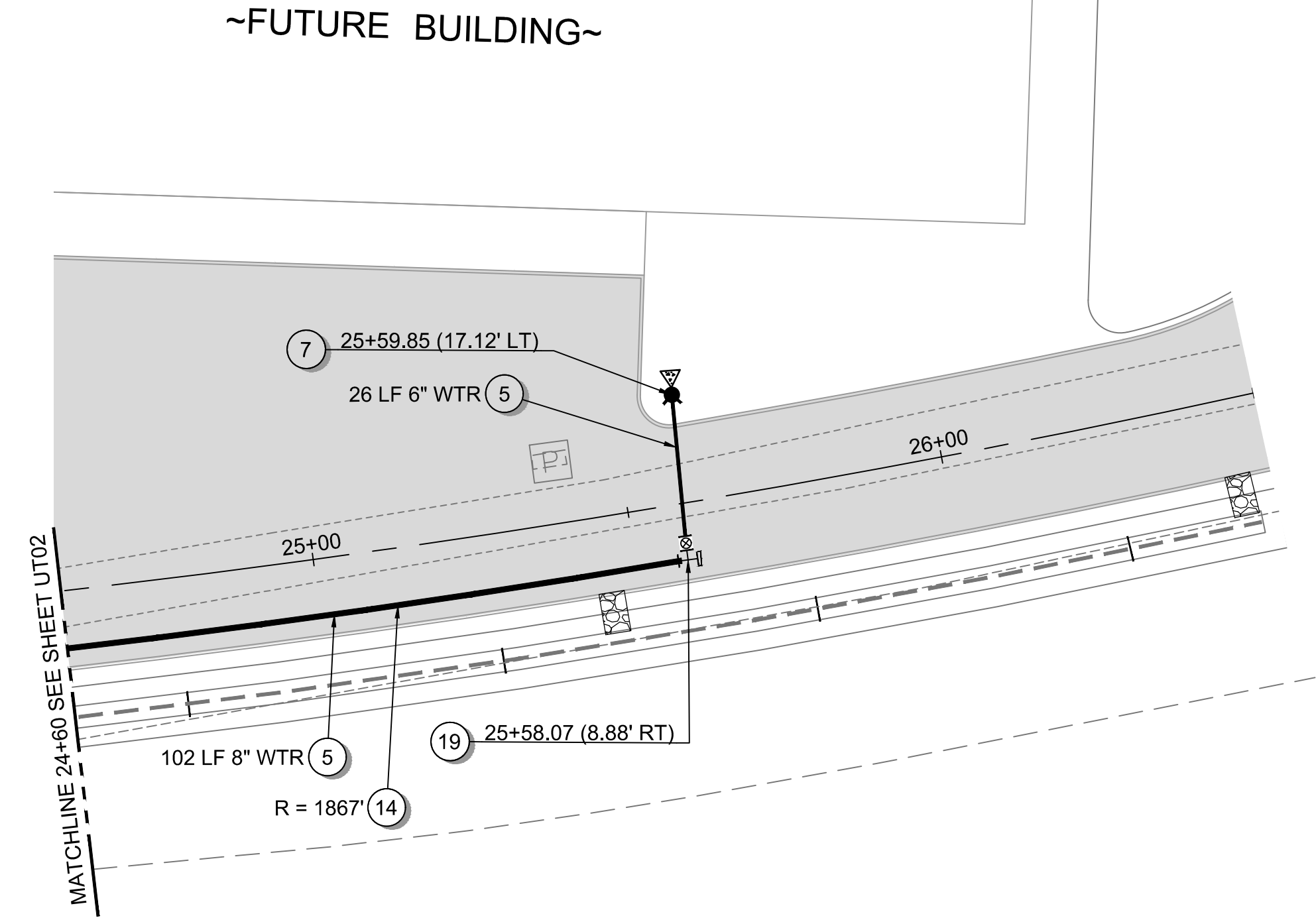
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SHEET **20** OF **28**

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Full Size Sheet Format Is 22x34; If Printed Size Is Not 22x34, Then This Sheet Format Has Been Modified & Indicated Drawing Scale Is Not Accurate.

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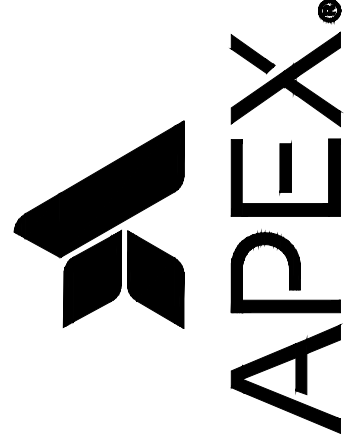
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- GENERAL NOTES**
- SEE SHEET G02 FOR PLAN SET LEGEND.
 - SEE SHEET G03 FOR PLAN SET GENERAL NOTES.
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 - CONNECT TO EXTG SANITARY SEWER MANHOLE.

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 - INSTALL (1) 8-INCH MJ TEE
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 - INSTALL HYDRANT ASSEMBLY PER "TYPE A" DETAIL ON WSDOT STANDARD PLAN B-90.10. SEE SHEET D05.
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 - INSTALL (1) 8-INCH MJ TEE
(2) 8-INCH MJ GATE VALVES
(1) 8-INCH MJ PLUG
 - INSTALL 8-INCH MJ 11 ¼ DEG BEND.
 - INSTALL 6-INCH MJ 90 DEG BEND.
 - INSTALL 2-INCH BLOWOFF ASSEMBLY WITH GATE VALVE PER WSDOT STANDARD PLAN B-90.20. SEE SHEET D05.
 - AFTER NEW WATER MAINS HAVE BEEN TESTED IN ACCORDANCE WITH SPECIFICATION SECTION 7-09.3, AND TEST RESULTS HAVE BEEN APPROVED BY THE ENGINEER, CONNECT TO EXTG 10-INCH WATER MAIN WITH
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 - INSTALL (1) 8-INCH x 4-INCH MJ TEE
(1) 4-INCH MJ GATE VALVE
 - INSTALL (1) 8-INCH MJ x 6-INCH FLG TEE
(1) 6-INCH FLG x MJ GATE VALVE
(1) 8-INCH MJ PLUG
 - INSTALL (1) 8-INCH x 6-INCH MJ TEE
(1) 8-INCH MJ GATE VALVE
(1) 6-INCH MJ GATE VALVE
 - INSTALL (1) 8-INCH MJ x 6-INCH FLG TEE
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 - AFTER NEW WATER MAINS HAVE BEEN TESTED IN ACCORDANCE WITH SPECIFICATION SECTION 7-09.3, AND TEST RESULTS HAVE BEEN APPROVED BY THE ENGINEER, CONNECT TO EXTG 10-INCH WATER MAIN WITH 10-INCH MJ 45 DEG VERTICAL BEND.
 - INSTALL 10-INCH MJ 45 DEG VERTICAL BEND. ENSURE 12-INCH MINIMUM SEPARATION BETWEEN PROPOSED 18-INCH STORM PIPE.

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A SITE LOCATED IN THE CITY OF NORTH BONNEVILLE, WASHINGTON



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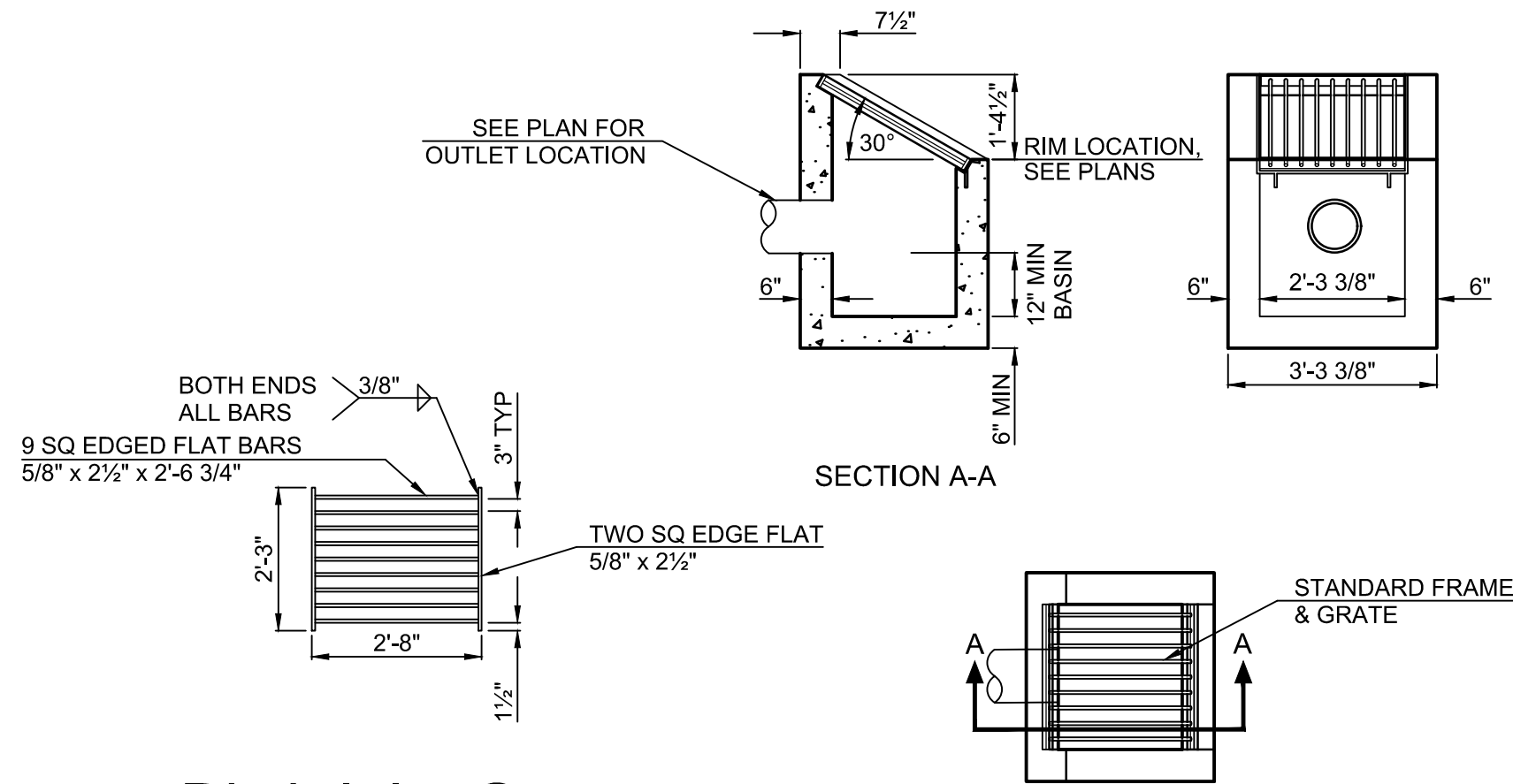
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SHEET **21** OF **28**

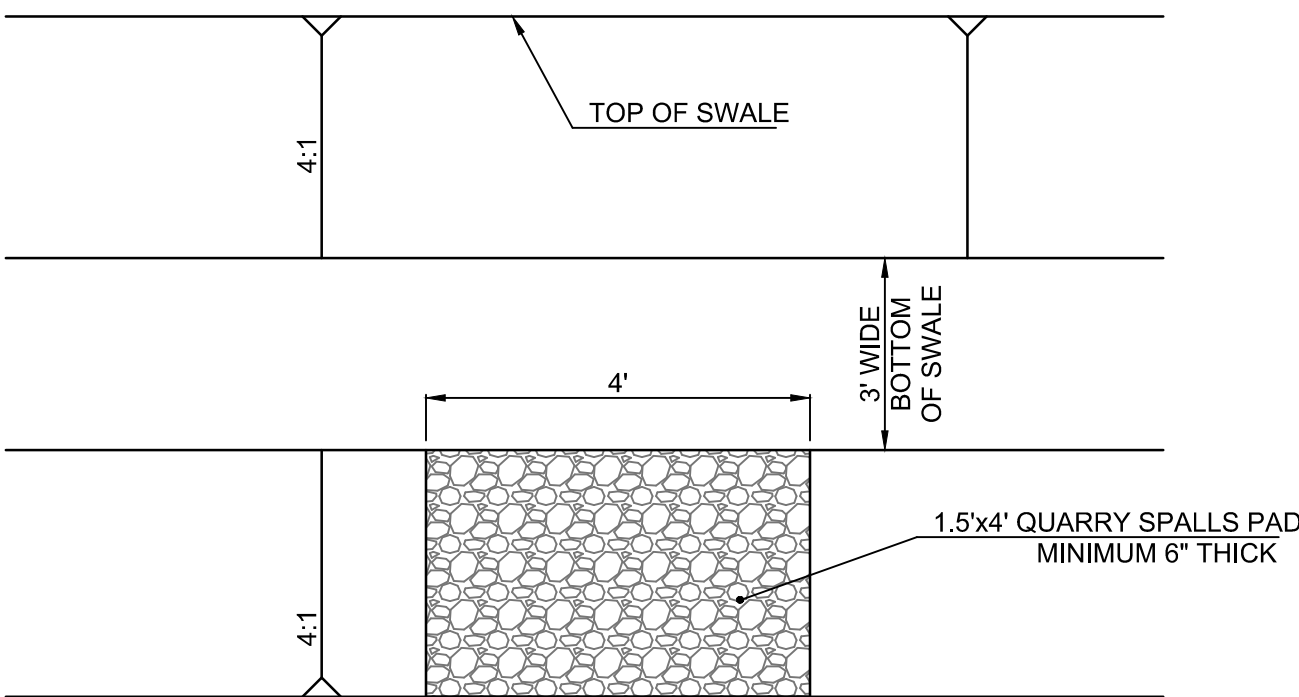
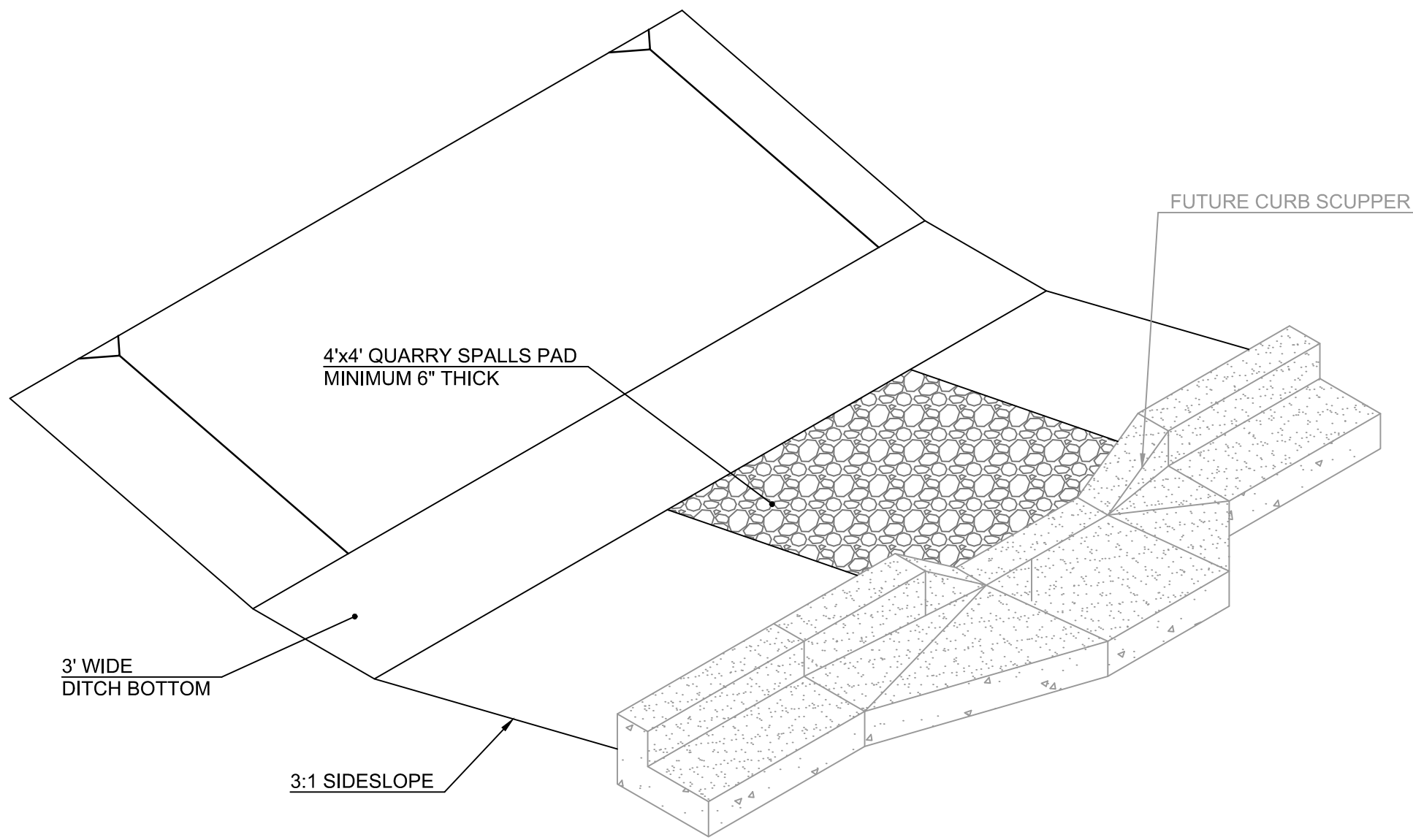
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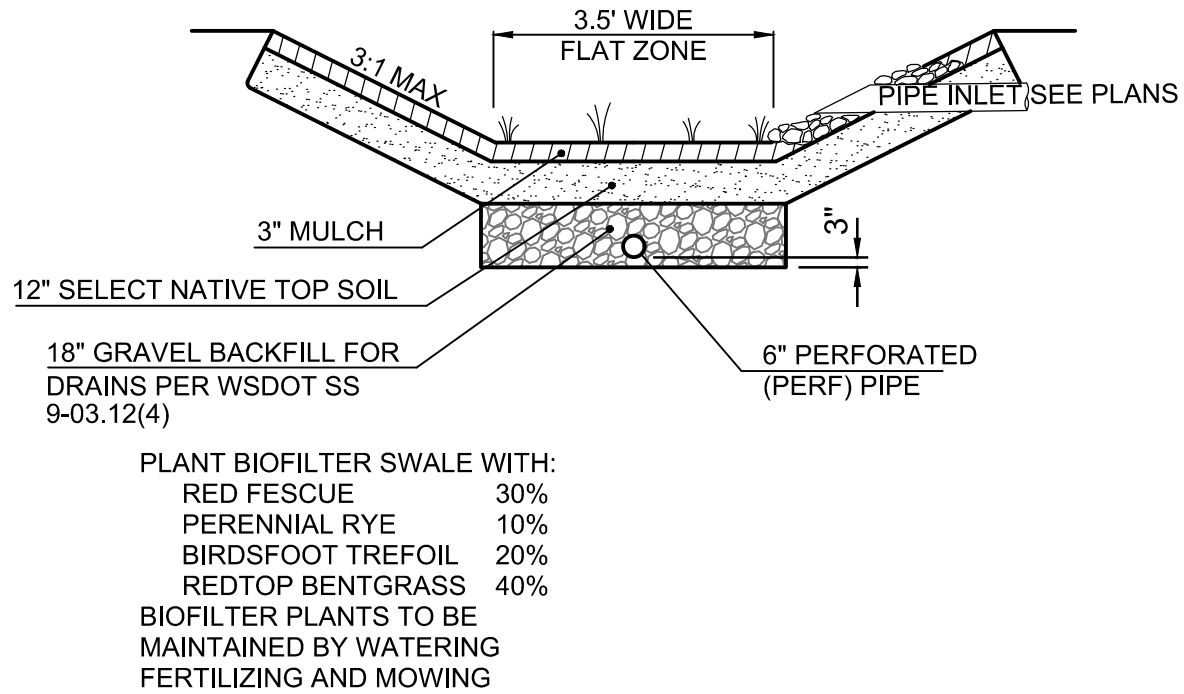


Ditch Inlet Grate
NTS

Ditch Inlet
NTS

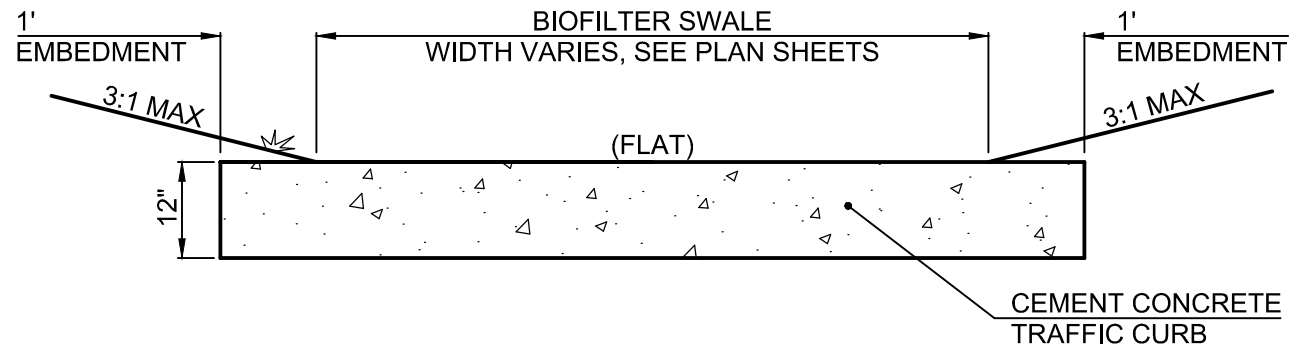


Quarry Spalls Pad
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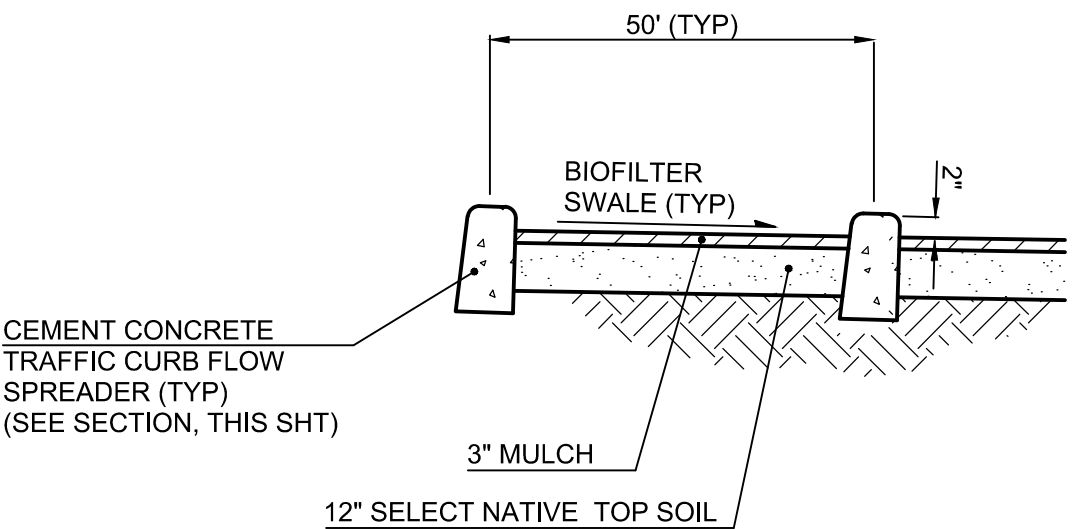


STORM FACILITIES INFORMATION				
STORM SWALE	LENGTH (FT)	SLOPE	BOTTOM WIDTH (FT)	DEPTH (FT)
1	587	1.0%	3.5	1.75

Biofilter Swale Cross-Section Detail
NTS

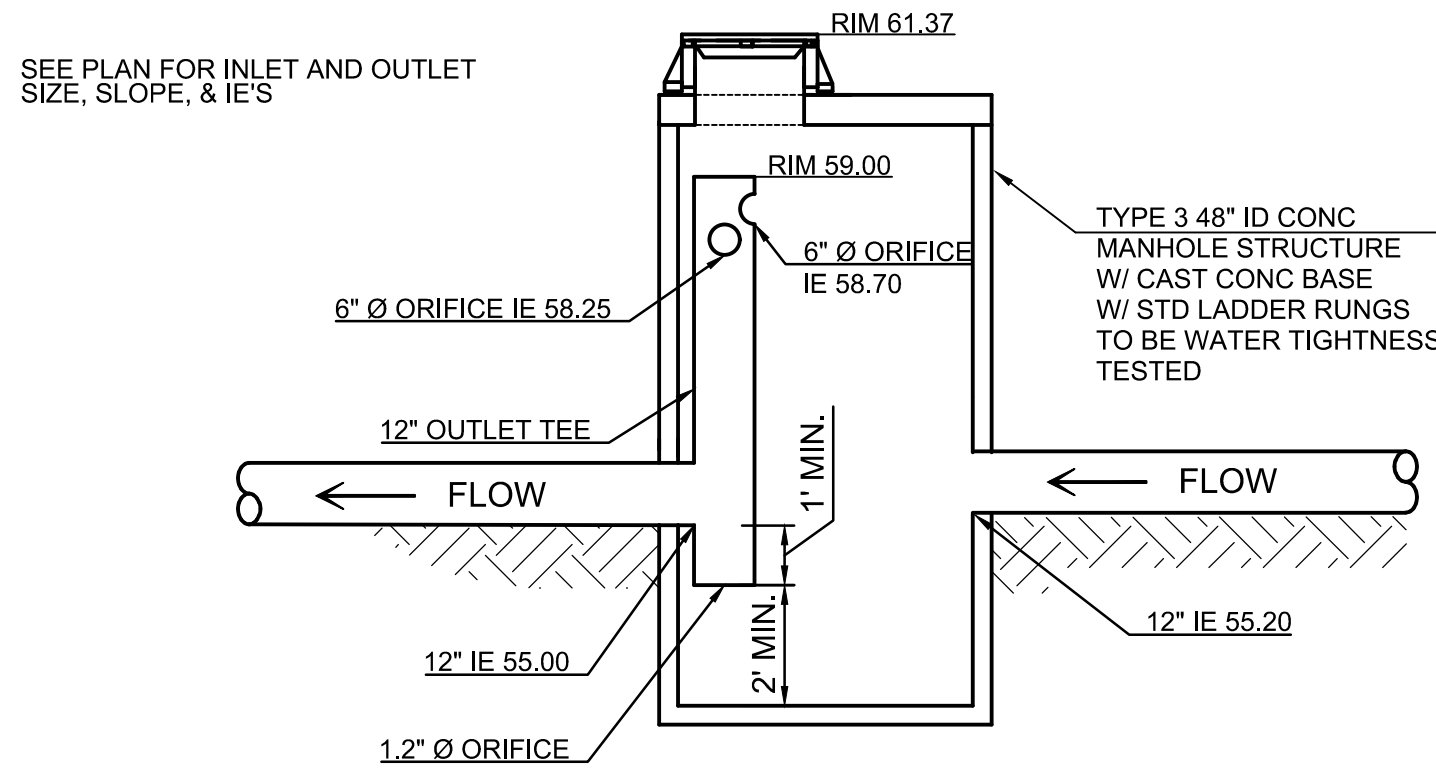


Flow Spreader Section
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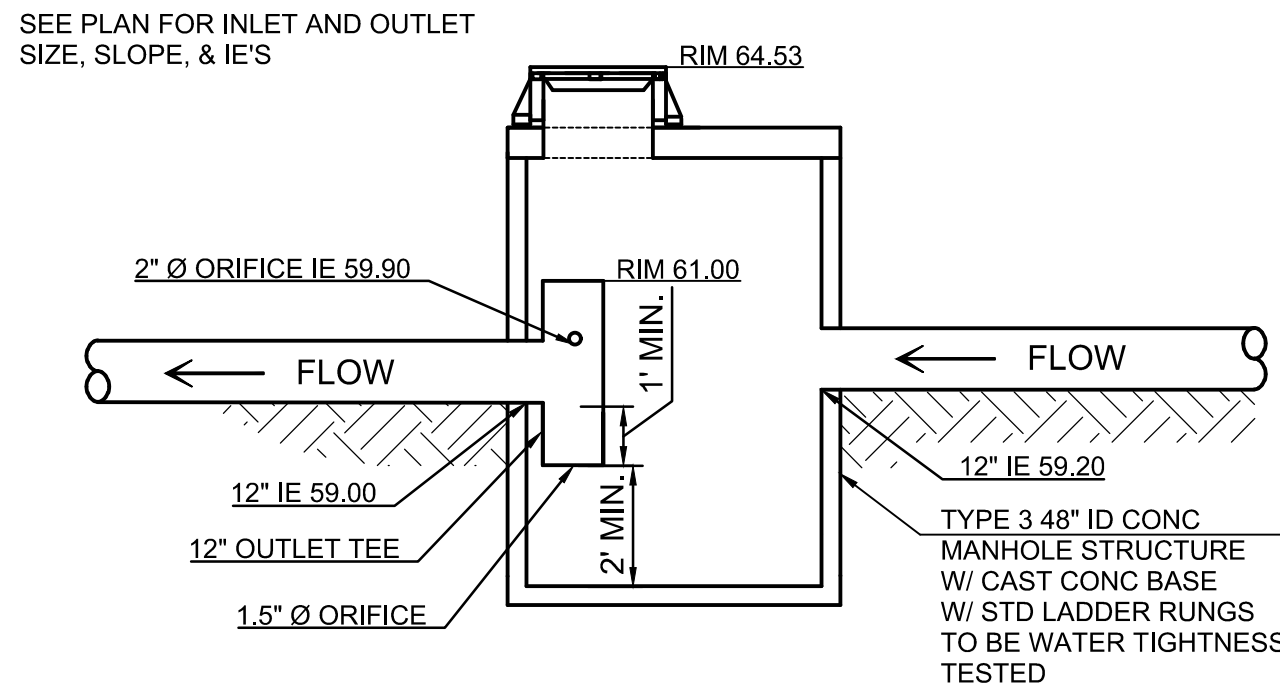


Biofilter Swale - Flow Spreader Detail
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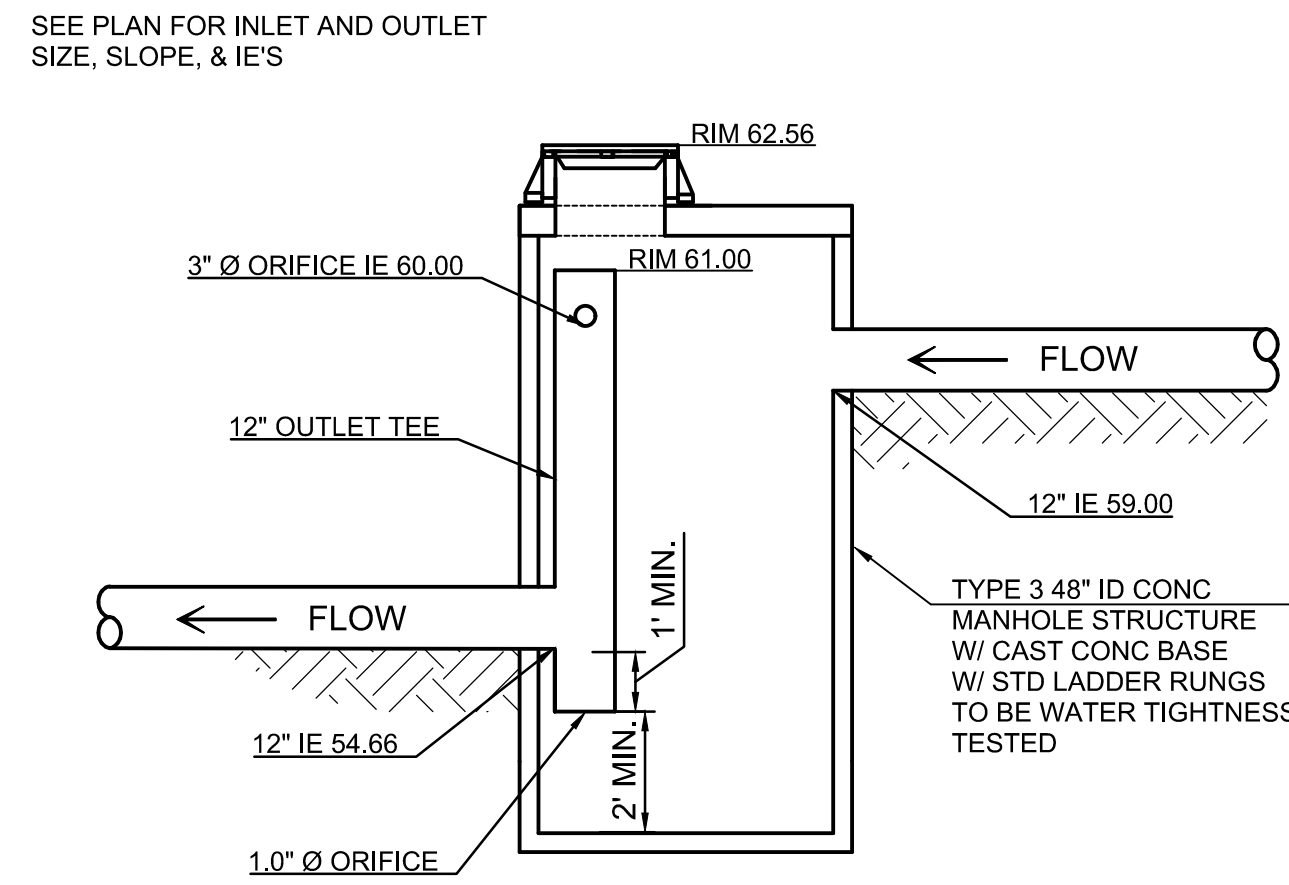
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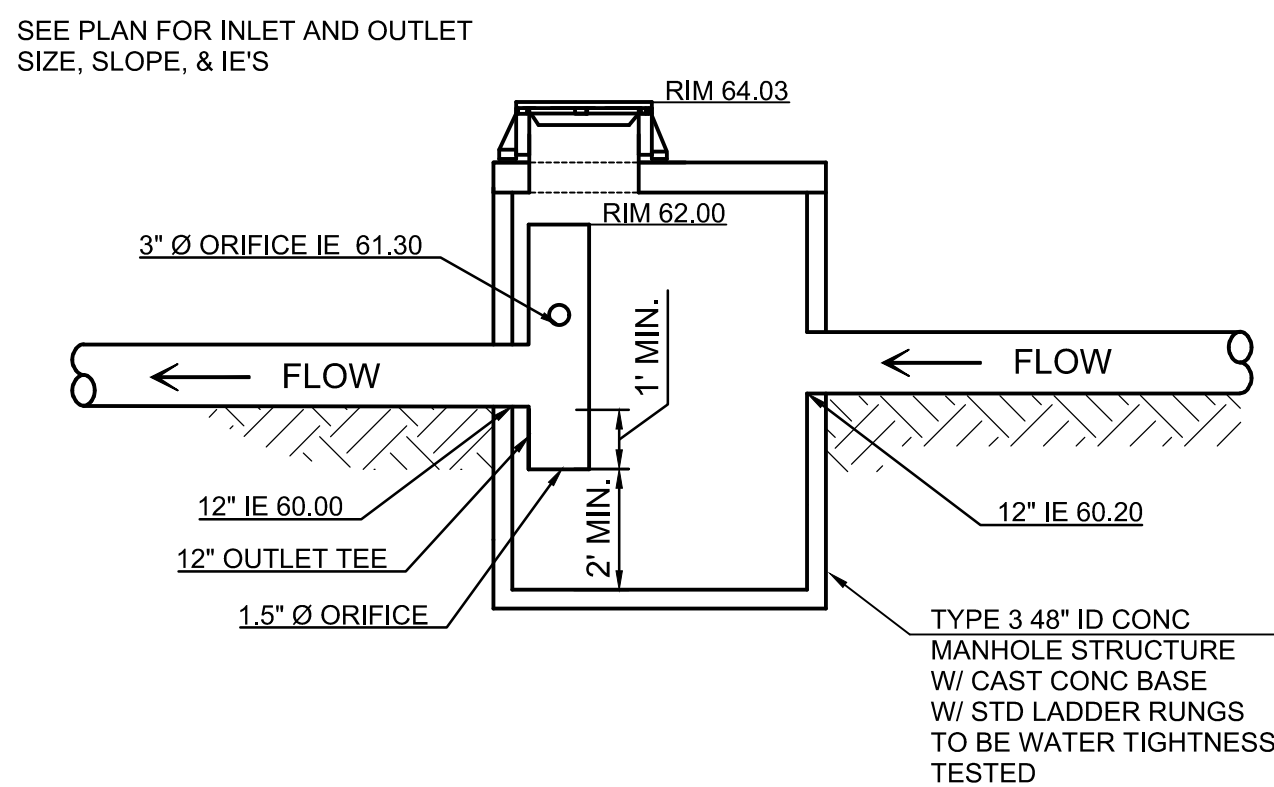
FCMH 2 Detail
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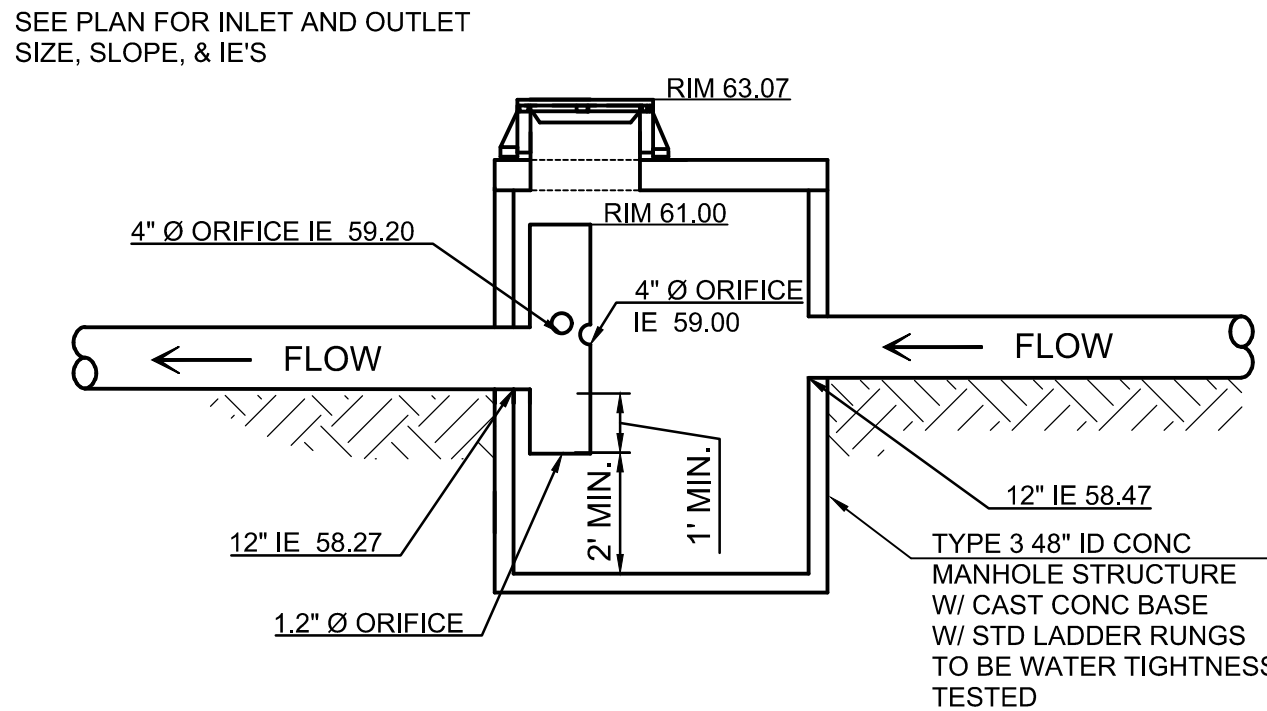
FCMH 3 Detail
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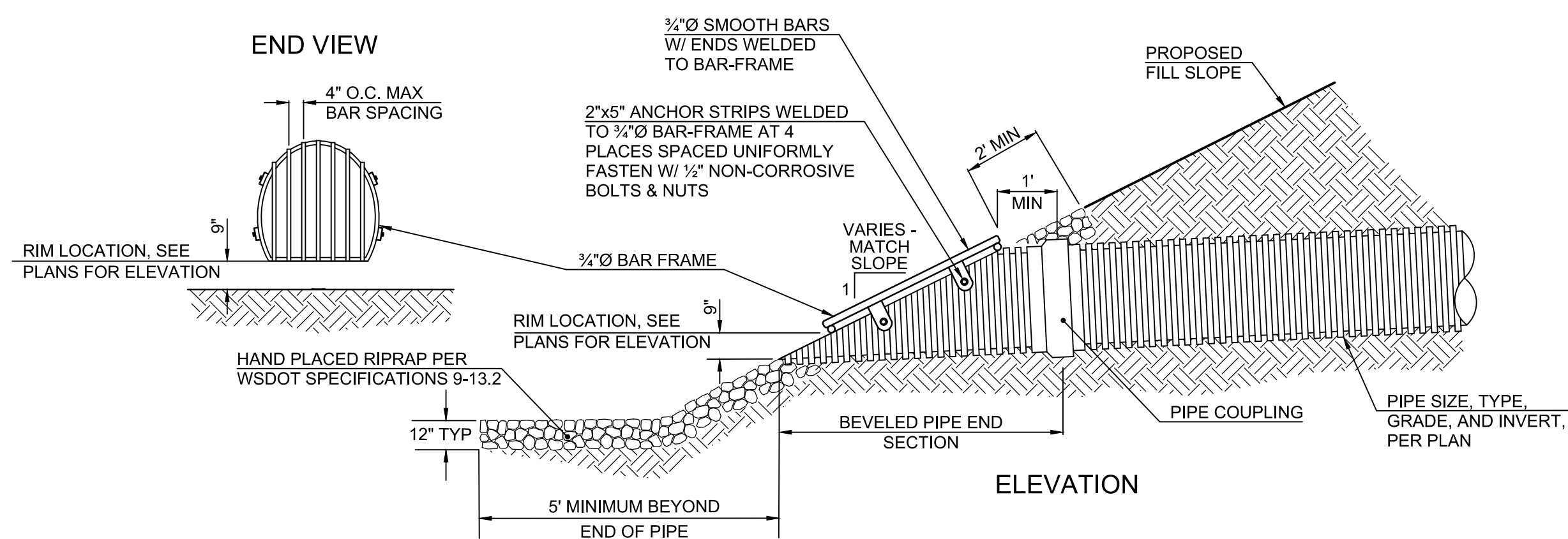
FCMH 4 Detail
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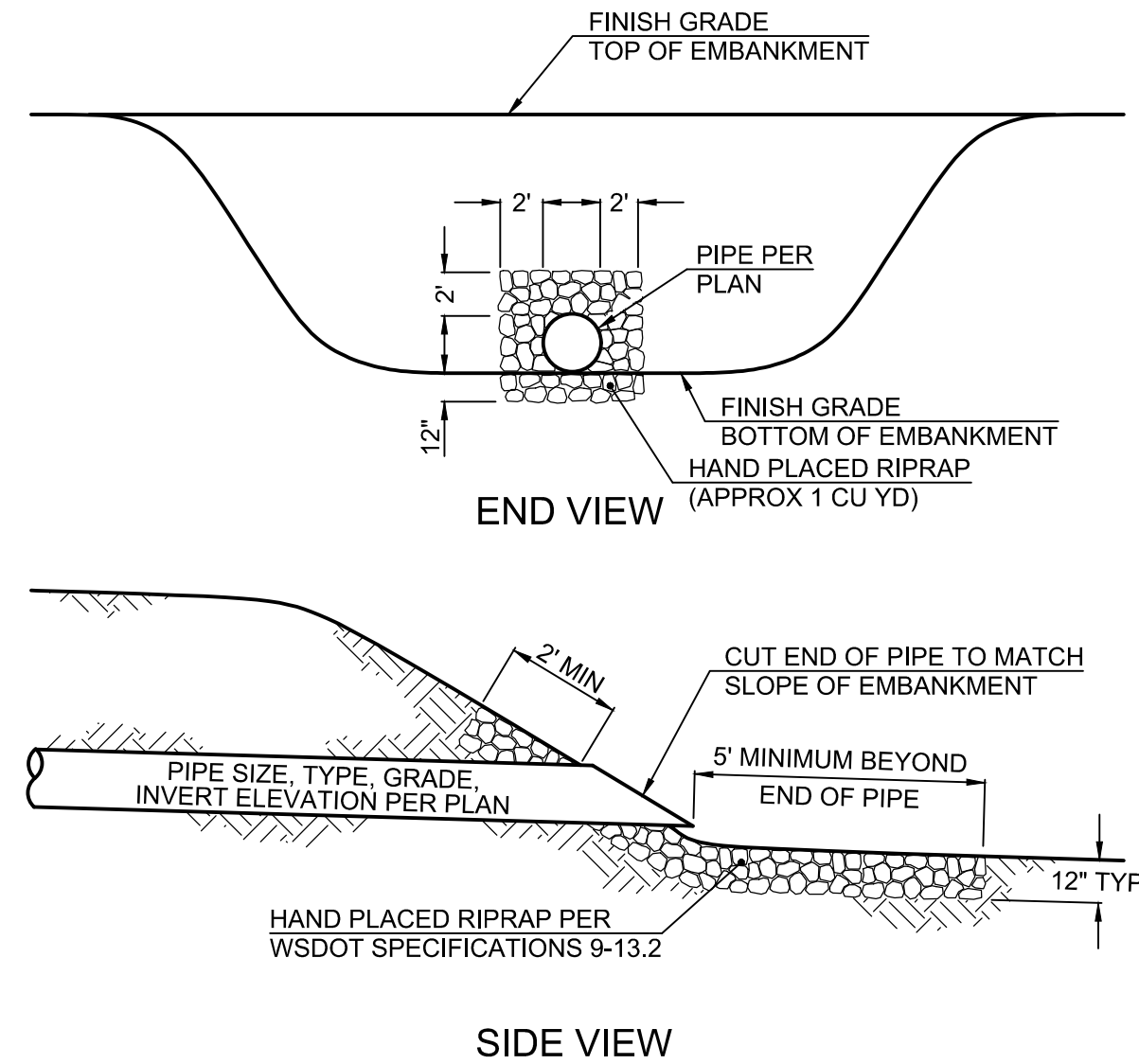
FCMH 5 Detail
NTS



FCMH 6 Detail
NTS



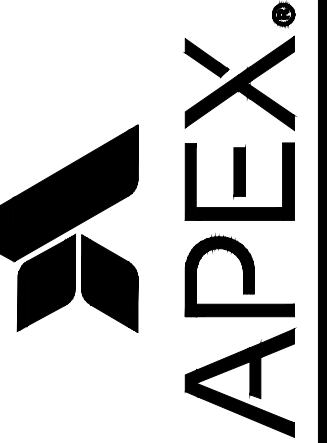
Storm Sewer Outlet with Trash Rack Detail
NTS



Storm Sewer Outlet Detail
NTS

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MISCELLANEOUS DETAILS FOR:
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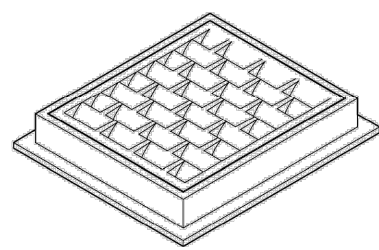
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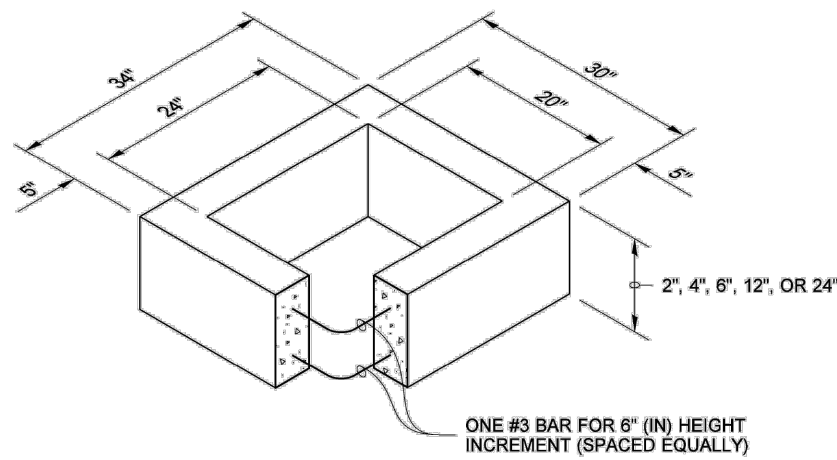
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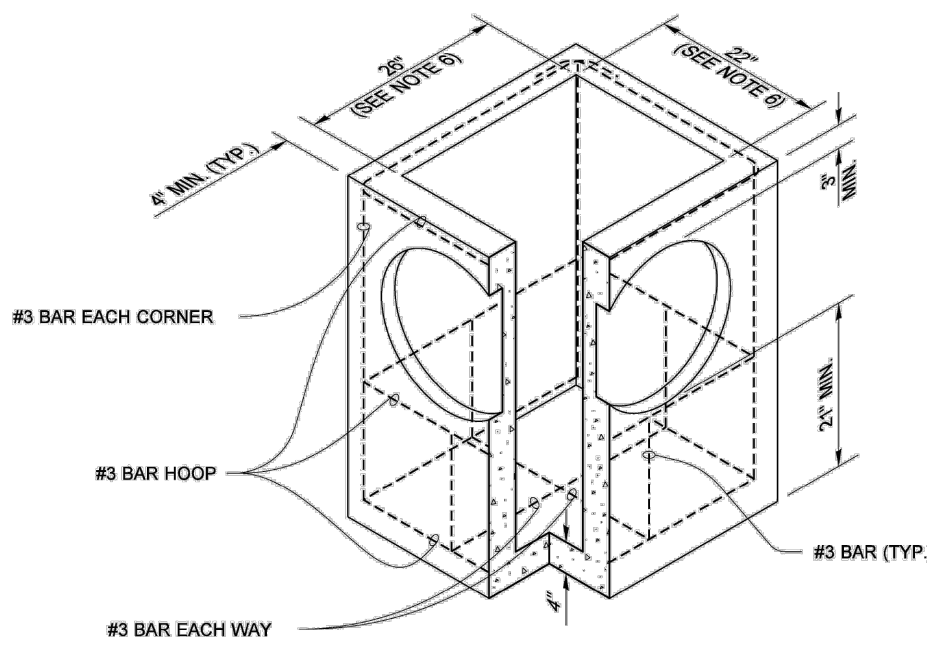
SHEET **23** OF **28**



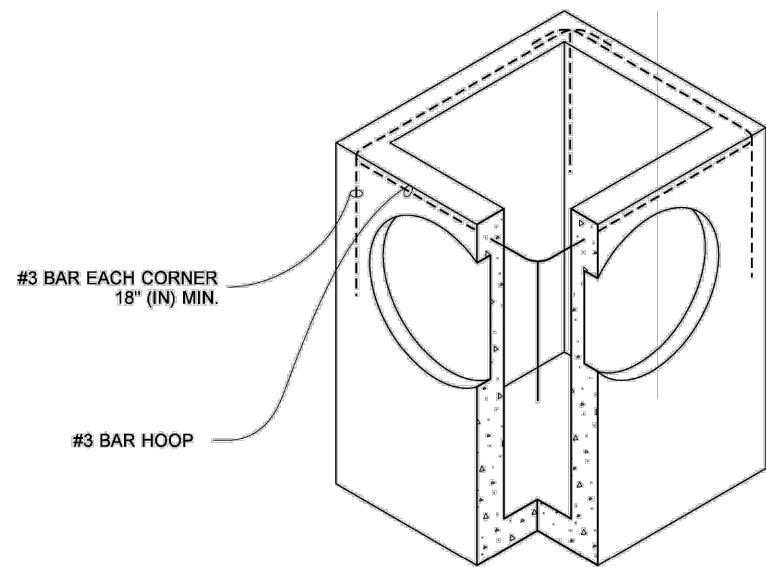
FRAME AND VANED GRATE



RECTANGULAR ADJUSTMENT SECTION



PRECAST BASE SECTION



ALTERNATIVE PRECAST BASE SECTION

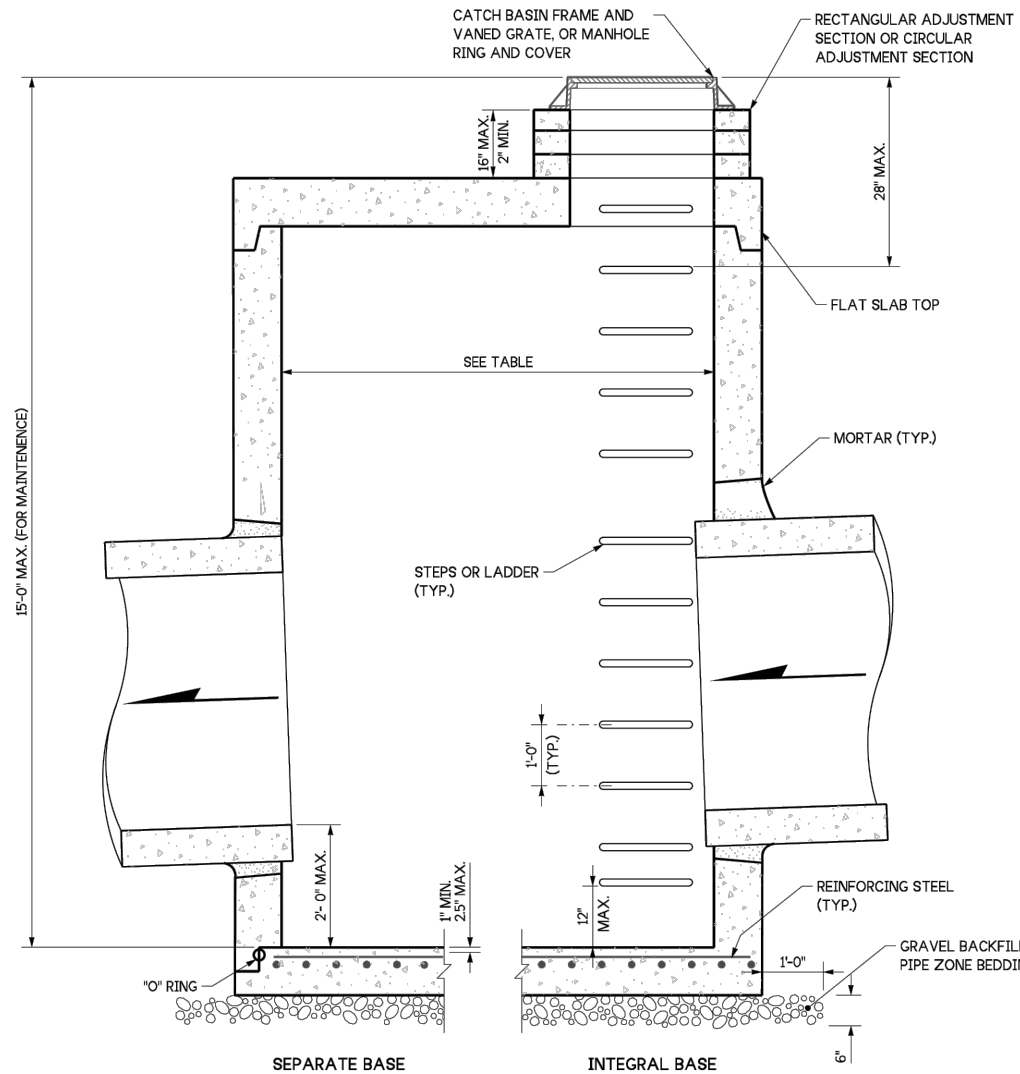
PIPE ALLOWANCES	
PIPE MATERIAL	MAXIMUM INSIDE DIAMETER (INCHES)
REINFORCED OR PLAIN CONCRETE	12"
ALL METAL PIPE	15"
CPSSP * (STD. SPEC. SECT. 9-05.20)	12"
SOLID WALL PVC (STD. SPEC. SECT. 9-05.12(1))	15"
PROFILE WALL PVC (STD. SPEC. SECT. 9-05.12(2))	15"

* CORRUGATED POLYETHYLENE STORM SEWER PIPE

NOTES

1. As acceptable alternatives to the rebar shown in the **PRECAST BASE SECTION**, fibers (placed according to the Standard Specifications), or wire mesh having a minimum area of 0.12 square inches per foot shall be used with the minimum required rebar shown in the **ALTERNATIVE PRECAST BASE SECTION**. Wire mesh shall not be placed in the knockouts.
2. The knockout diameter shall not be greater than 20" (in). Knockouts shall have a wall thickness of 2" (in) minimum to 2.5" (in) maximum. Provide a 1.5" (in) minimum gap between the knockout wall and the outside of the pipe. After the pipe is installed, fill the gap with joint mortar in accordance with **Standard Specification Section 9-04.3**.
3. The maximum depth from the finished grade to the lowest pipe invert shall be 5' (ft).
4. The frame and grate may be installed with the flange down, or integrally cast into the adjustment section with flange up.
5. The Precast Base Section may have a rounded floor, and the walls may be sloped at a rate of 1 : 24 or steeper.
6. The opening shall be measured at the top of the **Precast Base Section**.
7. All pickup holes shall be grouted full after the basin has been placed.

CATCH BASIN TYPE 1
STANDARD PLAN B-5.20-03
SHEET 1 OF 1 SHEET

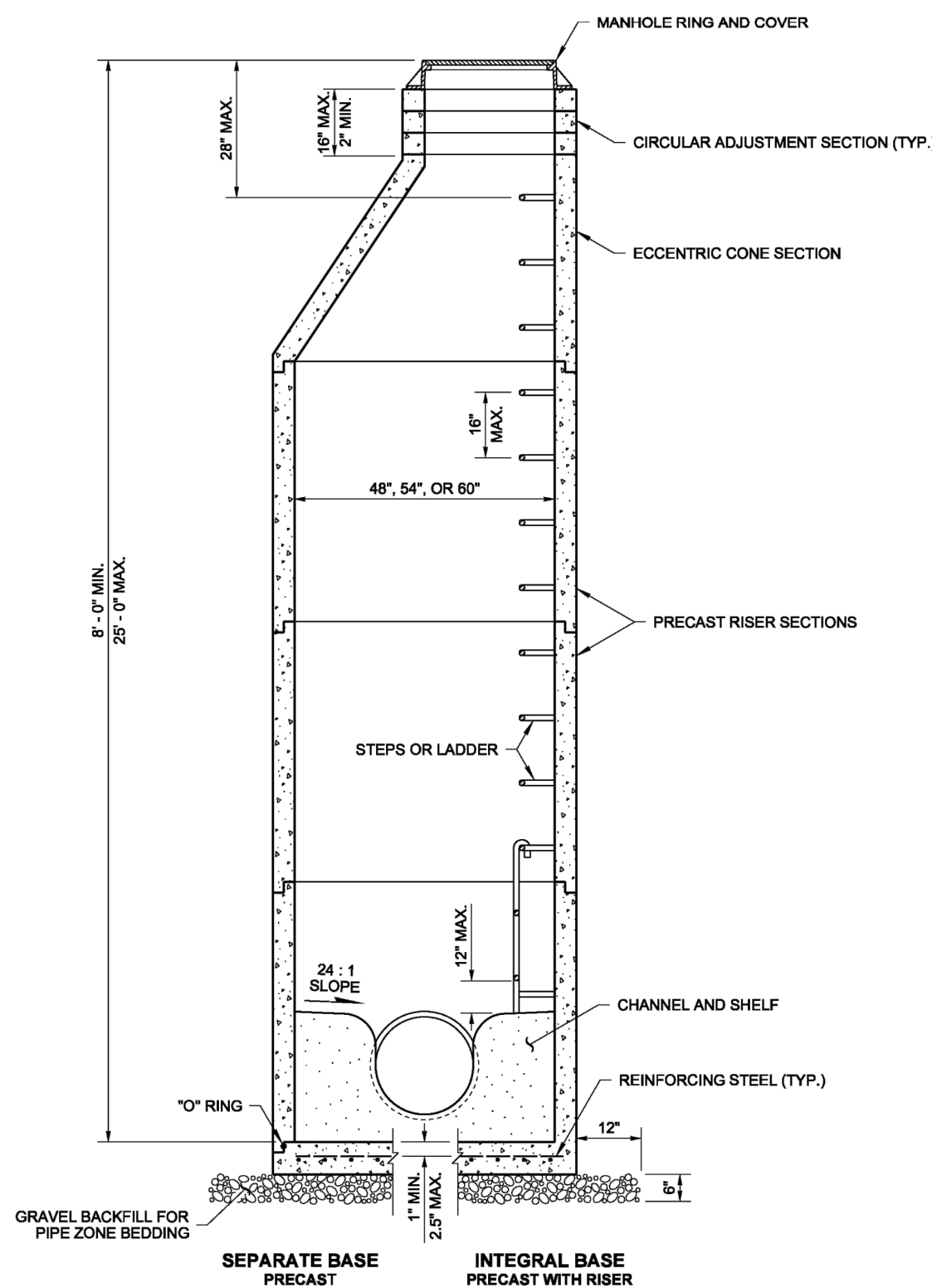


CATCH BASIN DIMENSIONS				
CATCH BASIN DIAMETER	MIN. WALL THICKNESS	MIN. BASE THICKNESS	MAXIMUM KNOCKOUT SIZE	MINIMUM DISTANCE BETWEEN KNOCKOUTS
48"	4"	6"	36"	8"
54"	4.5"	8"	42"	8"
60"	5"	8"	48"	8"
72"	6"	8"	60"	12"
84"	8"	12"	72"	12"
96"	8"	12"	84"	12"
120"	10"	12"	96"	12"
144"	12"	12"	108"	12"

PIPE ALLOWANCES				
CATCH BASIN DIAMETER	PIPE MATERIAL WITH MAXIMUM INSIDE DIAMETER			
	CONCRETE	ALL METAL	CPSSP (1)	SOLID WALL PVC (2)
48"	24"	30"	24"	30"
54"	30"	36"	30"	36"
60"	36"	42"	36"	42"
72"	42"	54"	42"	48"
84"	54"	60"	54"	48"
96"	60"	72"	60"	48"
120"	66"	84"	60"	48"
144"	78"	96"	60"	48"

- (1) Corrugated Polyethylene Storm Sewer Pipe (See Standard Specification Section 9-05.20)
(2) See Standard Specification Section 9-05.12(1)
(3) See Standard Specification Section 9-05.12(2)
(4) Polypropylene Pipe (See Standard Specification Section 9-05.24)

CATCH BASIN TYPE 2
STANDARD PLAN B-10.20-03
SHEET 1 OF 1 SHEET

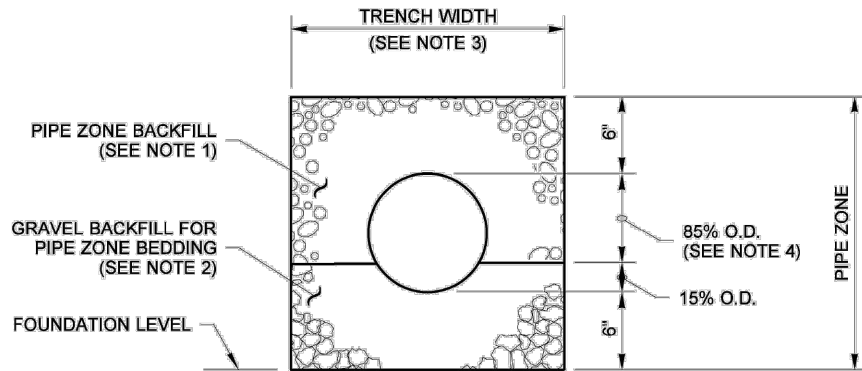


MANHOLE TYPE 1
STANDARD PLAN B-15.20-01
SHEET 1 OF 1 SHEET

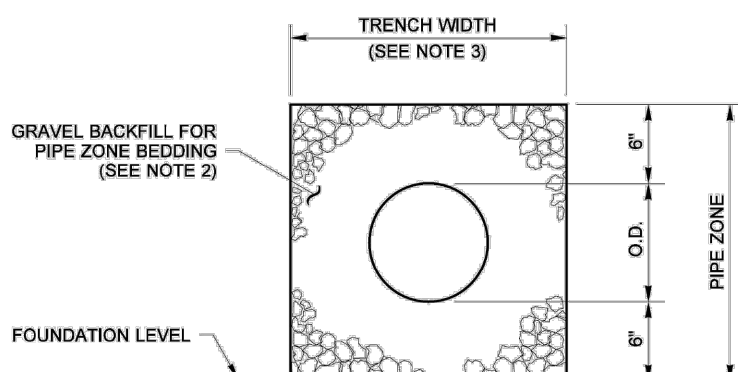
NOTES

1. Knockouts shall have a wall thickness of 2" minimum to 2.5" maximum.
2. For pipe allowances, see **Standard Plan B-10.20**.

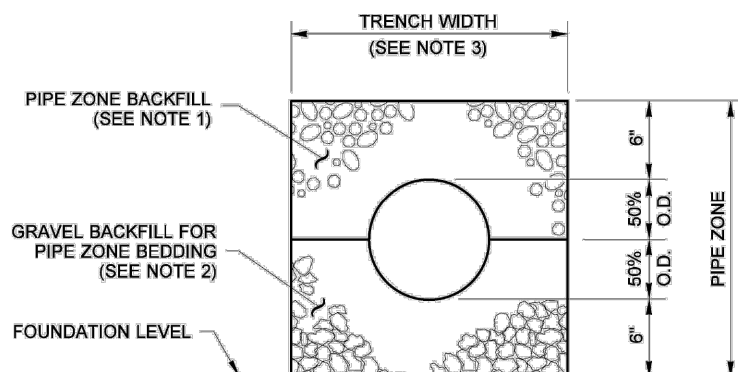
MANHOLE DIMENSION TABLE				
DIAM.	MIN. WALL THICKNESS	MIN. BASE THICKNESS	MAXIMUM KNOCKOUT SIZE	MINIMUM DISTANCE BETWEEN KNOCKOUTS
48"	4"	6"	36"	8"
54"	4.5"	8"	42"	8"
60"	5"	8"	48"	8"



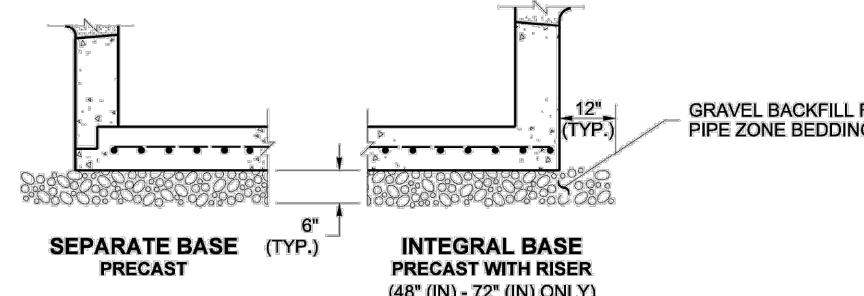
CONCRETE AND DUCTILE IRON PIPE



THERMOPLASTIC PIPE



METAL AND STEEL RIB
REINFORCED POLYETHYLENE PIPE

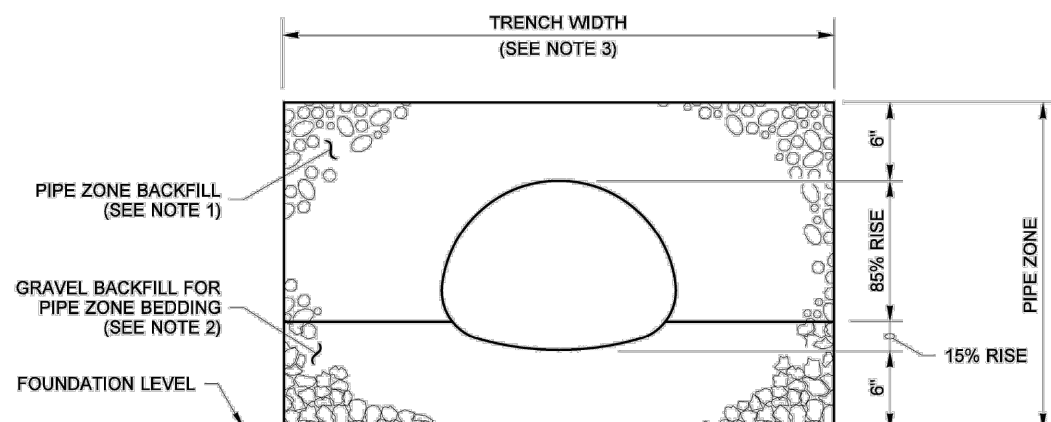


TYPICAL CONDITION FOR DRAINAGE STRUCTURE

THIS DETAIL APPLIES TO STANDARD PLANS B-5.20, B-6.40, B-5.60, B-10.20, B-10.40, B-15.20, B-15.40, B-15.60, B-25.20, B-25.60, B-35.20 AND B-35.40.

NOTES

1. See **Standard Specifications Section 7-08.3(3)** for Pipe Zone Backfill.
2. See **Standard Specifications Section 9-03.12(3)** for Gravel Backfill for Pipe Zone Bedding.
3. See **Standard Specifications Section 2-09.4** for Measurement of Trench Width.
4. For sanitary sewer installation, concrete pipe shall be imbedded to spring line.



PIPE ARCHES

CLEARANCE BETWEEN PIPES FOR MULTIPLE INSTALLATIONS		
PIPE	SIZE	MINIMUM DISTANCE BETWEEN BARRELS
CIRCULAR PIPE (DIAMETER)	UP TO 48"	24"
METAL PIPE ARCH (SPAN)	48" AND LARGER	DIAMETER/2 OR 36" WHICHEVER IS LESS

PIPE ZONE BEDDING
AND BACKFILL
STANDARD PLAN B-55.20-03
SHEET 1 OF 1 SHEET

STANDARD DETAILS FOR:

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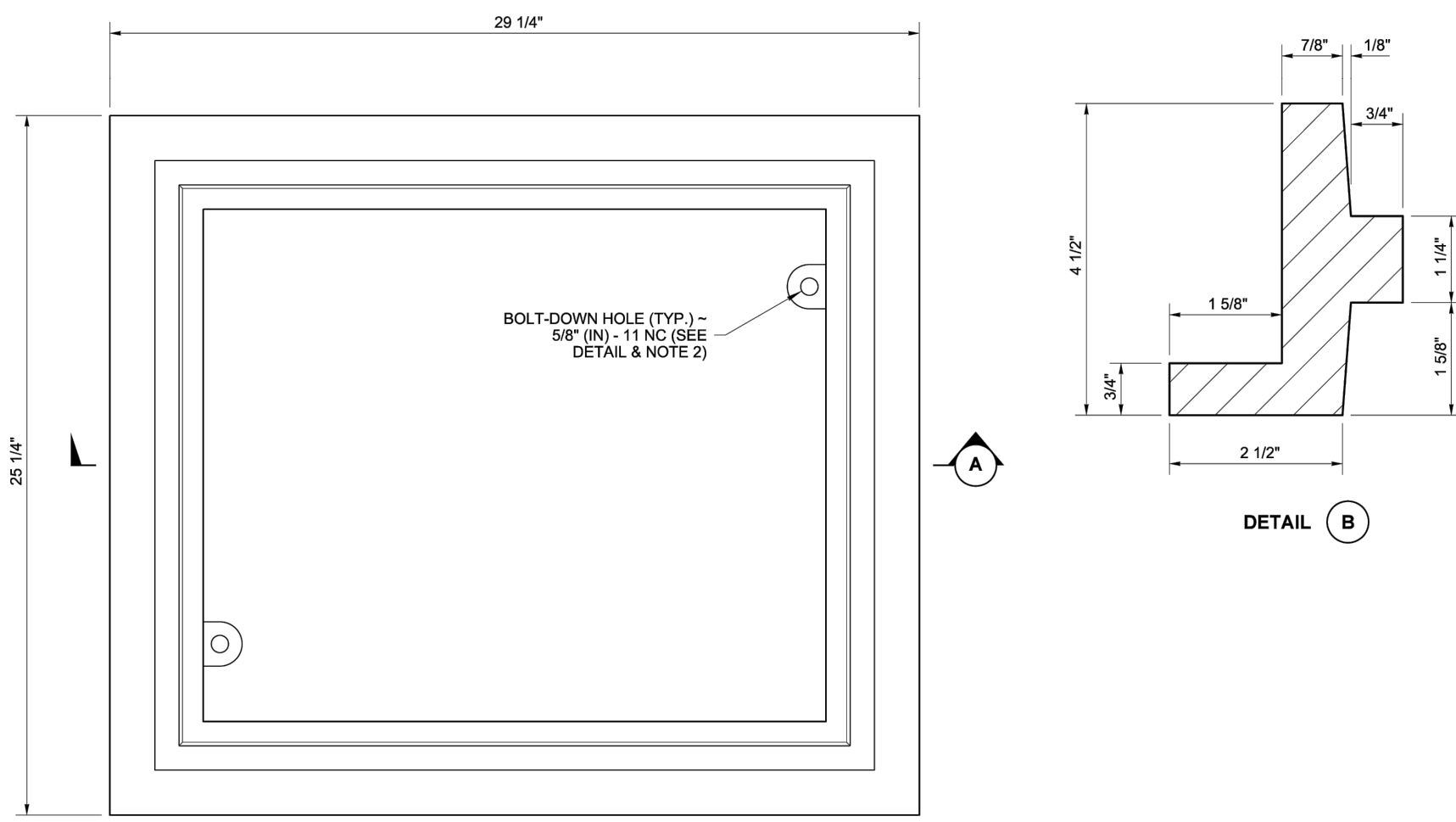
D03

SHEET 24 OF 28

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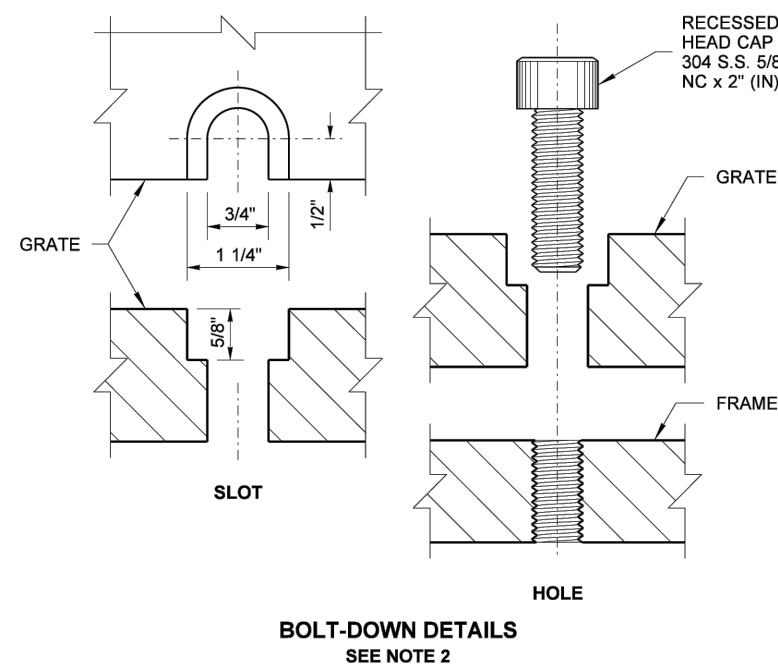
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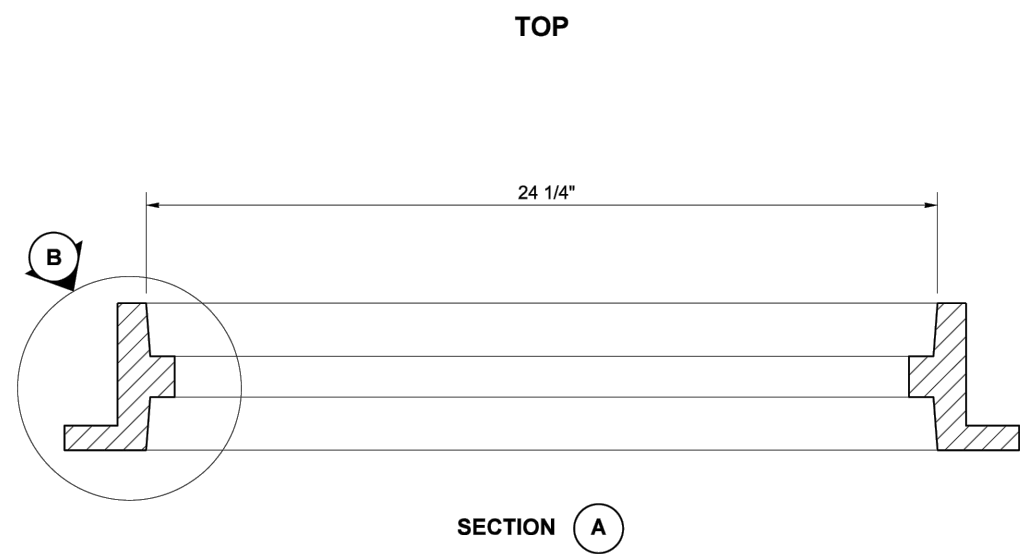


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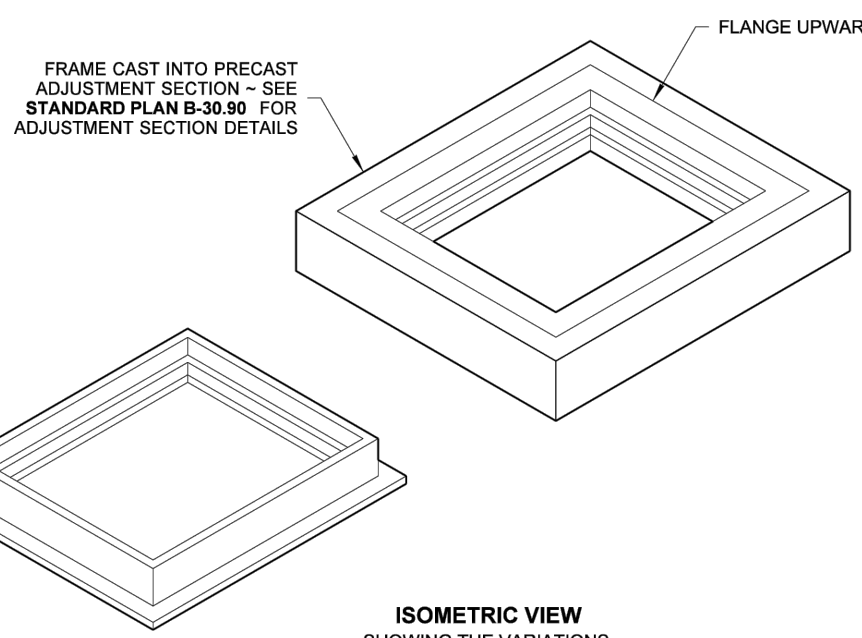
1. This frame is designed to accommodate 20" (in) x 24" (in) grates or covers as shown on **Standard Plans B-30.20, B-30.30, B-30.40, and B-30.50.**
2. Bolt-down capability is required on all frames, grates, and covers, unless specified otherwise in the Contract. Provide 2 holes in the frame that are vertically aligned with the grate or cover slots. The frame shall accept the 304 Stainless Steel (S.S.) 5/8" (in) - 11 NC x 2" (in) allen head cap screw by being tapped, or other approved mechanism. Location of bolt-down holes varies by manufacturer.
3. Refer to **Standard Specification Section 9-05.15 and 9-05.15(2)** for additional requirements.



BOLT-DOWN DETAILS
SEE NOTE 2

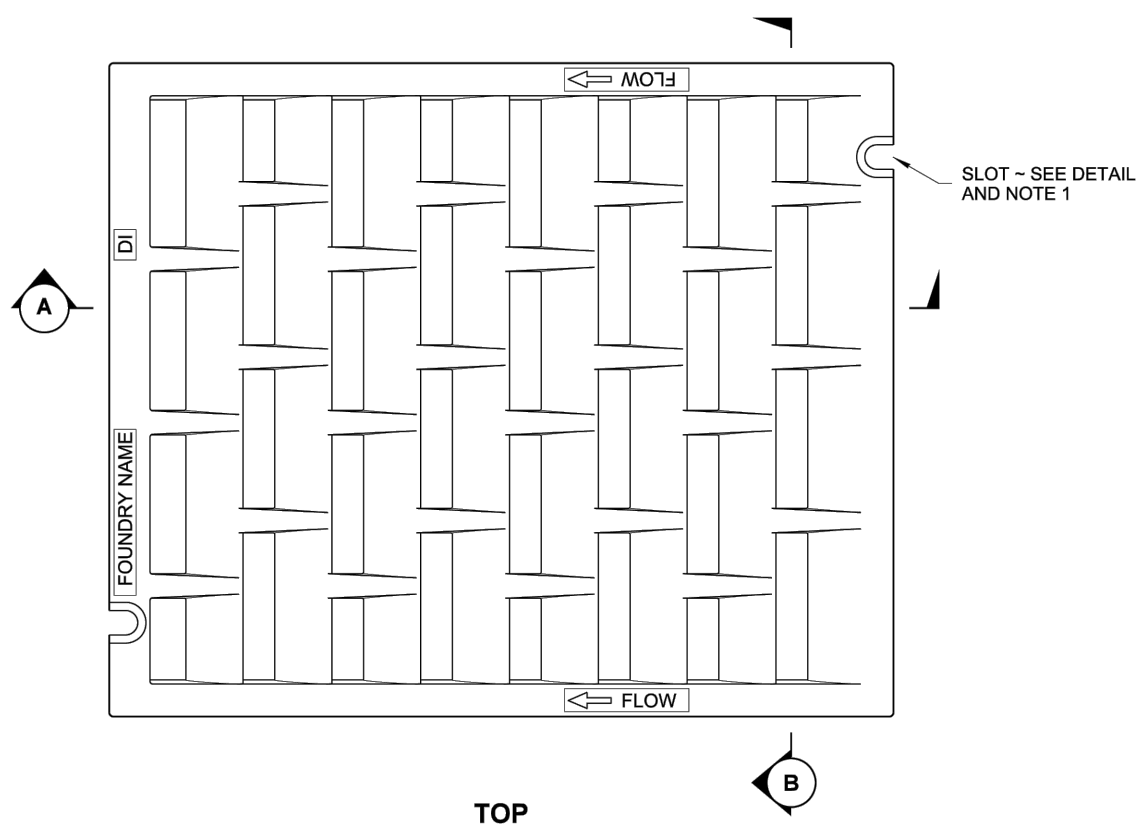


SECTION A

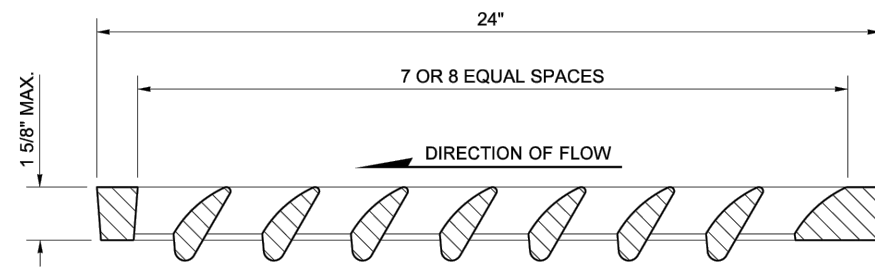


ISOMETRIC VIEW
SHOWING THE VARIATIONS

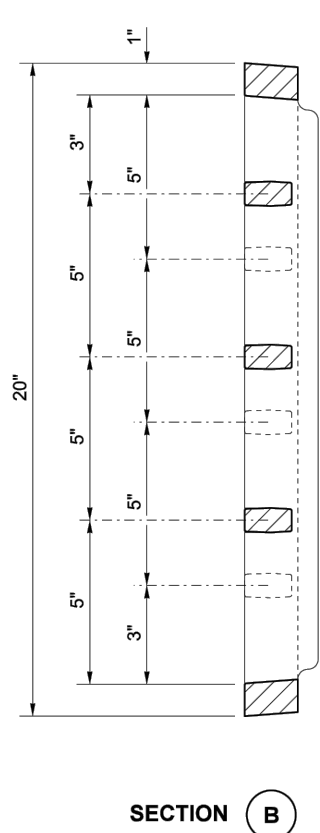
RECTANGULAR FRAME
(REVERSIBLE)
STANDARD PLAN B-30.10-03
SHEET 1 OF 1 SHEET



TOP



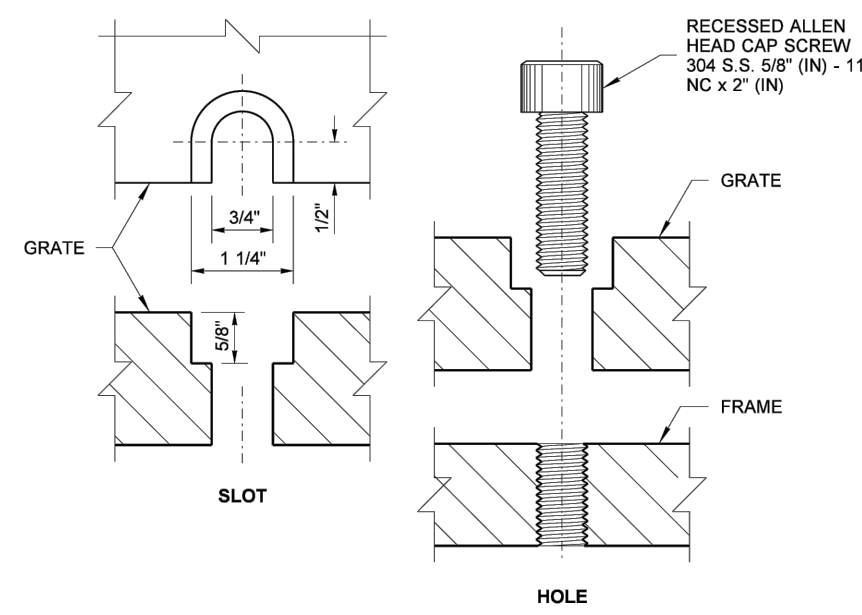
SECTION A



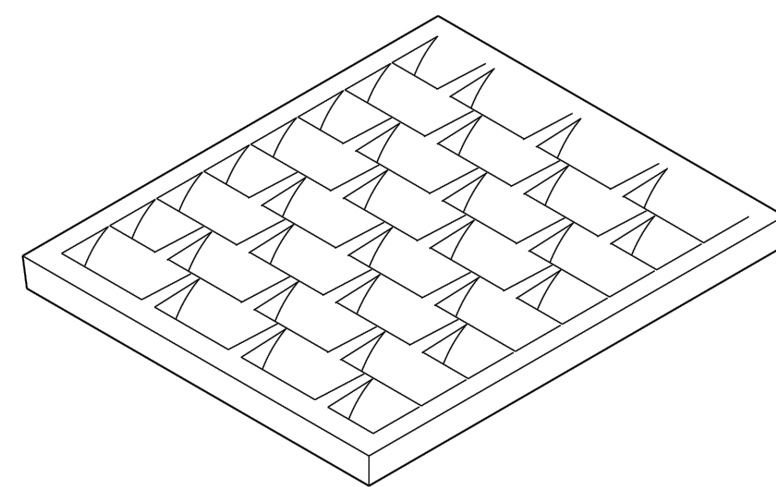
SECTION B

NOTES

1. Bolt-down capability is required on all frames, grates, and covers, unless specified otherwise in the Contract. Provide 2 holes in the frame that are vertically aligned with the grate or cover slots. The frame shall accept the 304 Stainless Steel (S.S.) 5/8" (in) - 11 NC x 2" (in) allen head cap screw by being tapped, or other approved mechanism. Location of bolt-down holes varies by manufacturer.
2. Refer to **Standard Specification Section 9-05.15 and 9-05.15(2)** for additional requirements.
3. For frame details, see **Standard Plan B-30.10.**

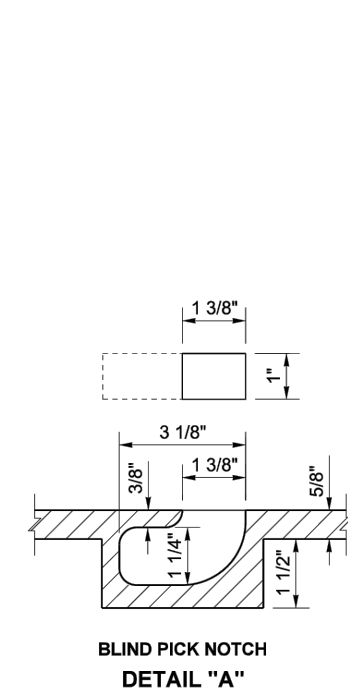


BOLT-DOWN DETAILS
SEE NOTE 1

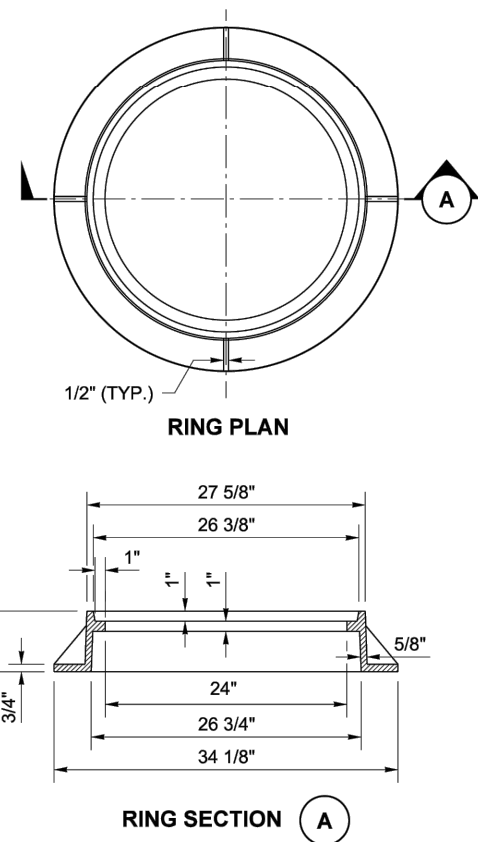


ISOMETRIC

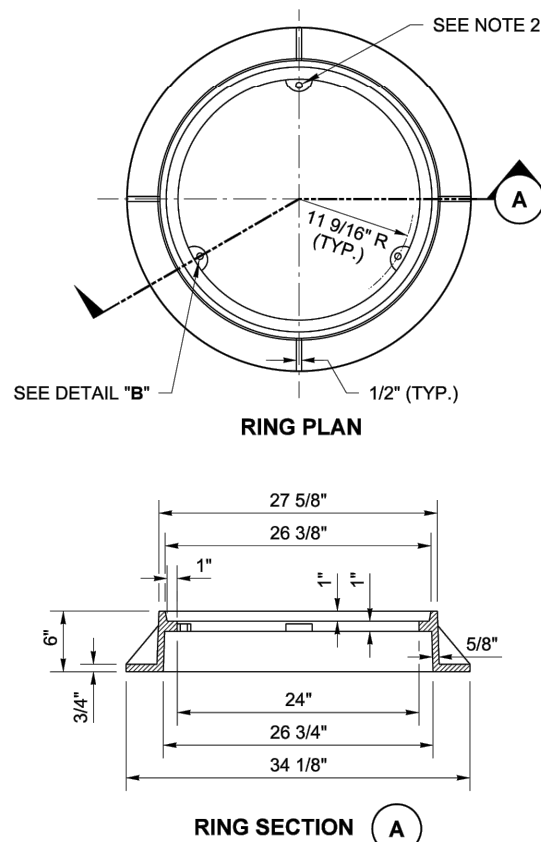
RECTANGULAR
VANED GRATE
STANDARD PLAN B-30.30-03
SHEET 1 OF 1 SHEET



BLIND PICK NOTCH
DETAIL "A"



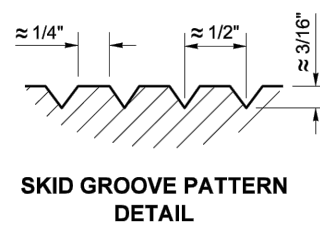
RING SECTION A



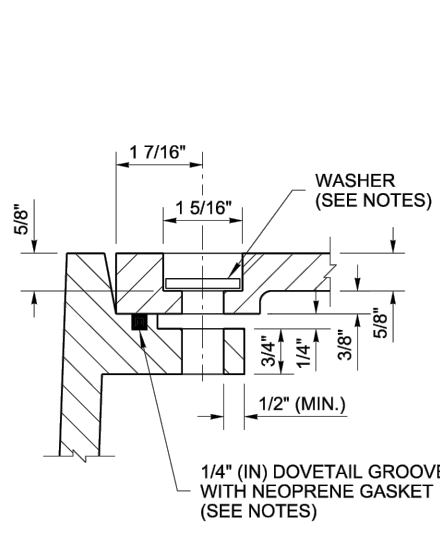
RING SECTION A

NOTES

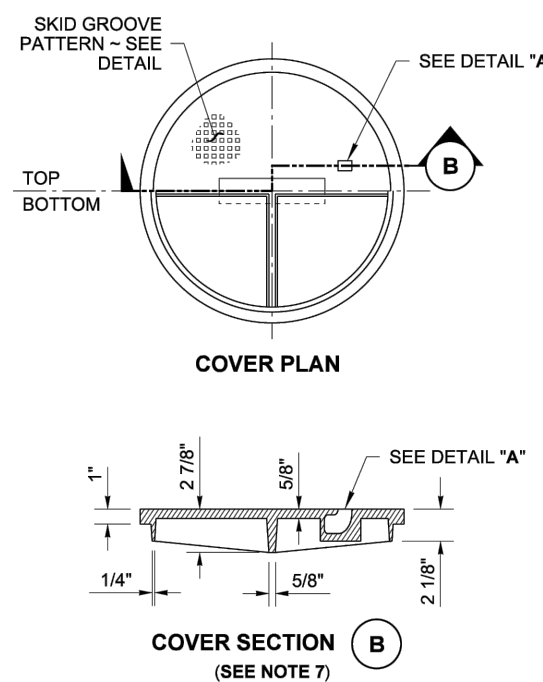
1. The gasket and groove may be in the seat (frame) or in the underside of the cover. The gasket may be "T" shaped in section. The groove may be cast or machined.
2. Bolt-down capability is required on all frames, grates, and covers, unless specified otherwise in the Contract. Provide 3 holes in the frame that are vertically aligned with the grate or cover slots. The frame shall accept the 304 Stainless Steel (S.S.) 5/8" - 11 NC x 2" (in) allen head cap screw by being tapped, or other approved mechanism. Location of bolt down holes varies by manufacturer.
3. For bolt-down manhole ring and covers that are not designated "Watertight," the neoprene gasket, groove, and washer are not required.
4. Washer shall be neoprene (Detail "B").
5. In lieu of blind pick notch for manhole covers, a single 1" (in) pick hole is acceptable. Hole location and number of holes may vary by manufacturer.
6. Alternative reinforcing designs are acceptable in lieu of the rib design.
7. For clarity, the vertical scale of the Cover Section has been exaggerated, it is 1.5 times the horizontal scale (1H:1.5V).



SKID GROOVE PATTERN
DETAIL

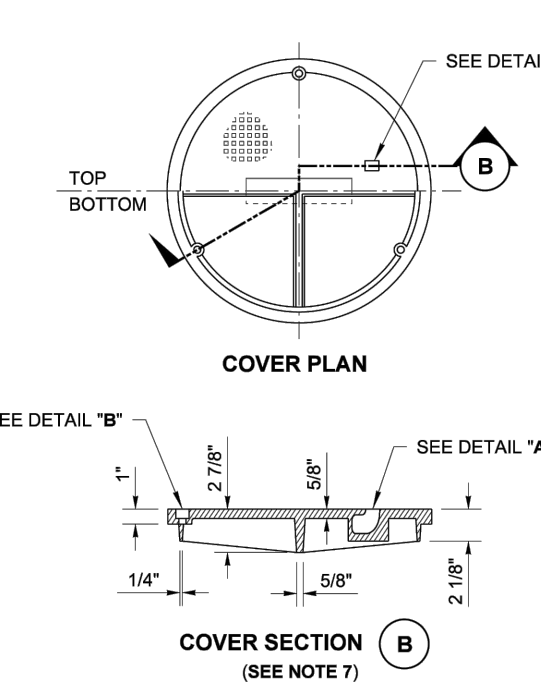


BOLT-DOWN / WATERTIGHT
DETAIL "B"



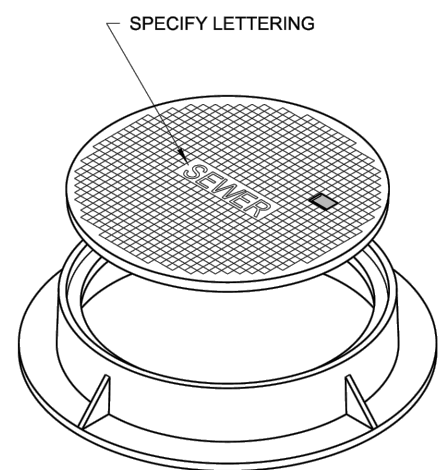
COVER SECTION B
(SEE NOTE 7)

STANDARD
TYPE 1



COVER SECTION B
(SEE NOTE 7)

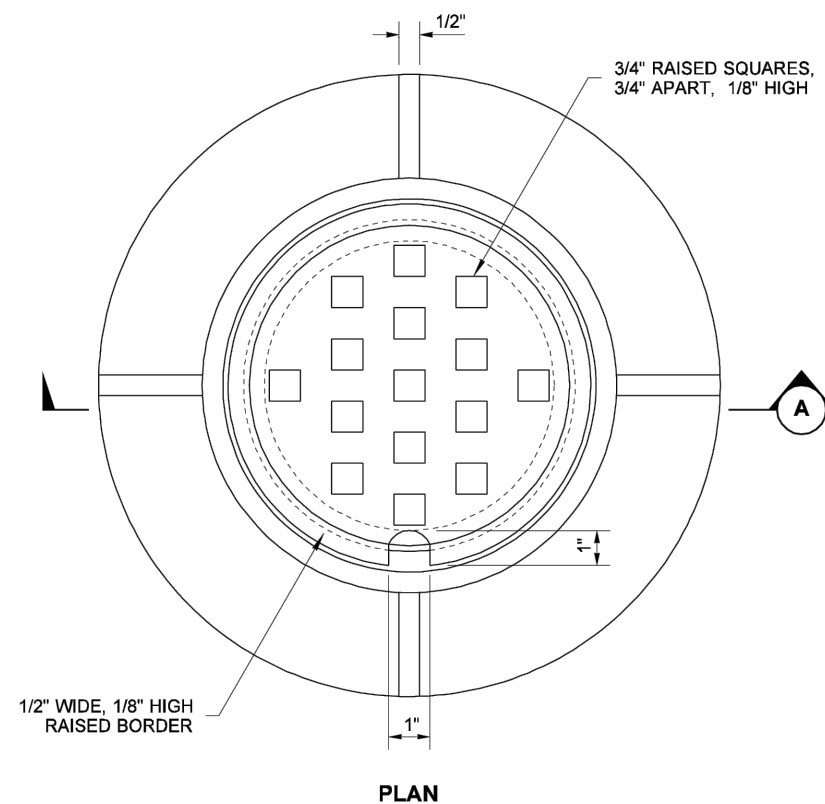
BOLT-DOWN / WATERTIGHT
TYPE 2



ISOMETRIC VIEW

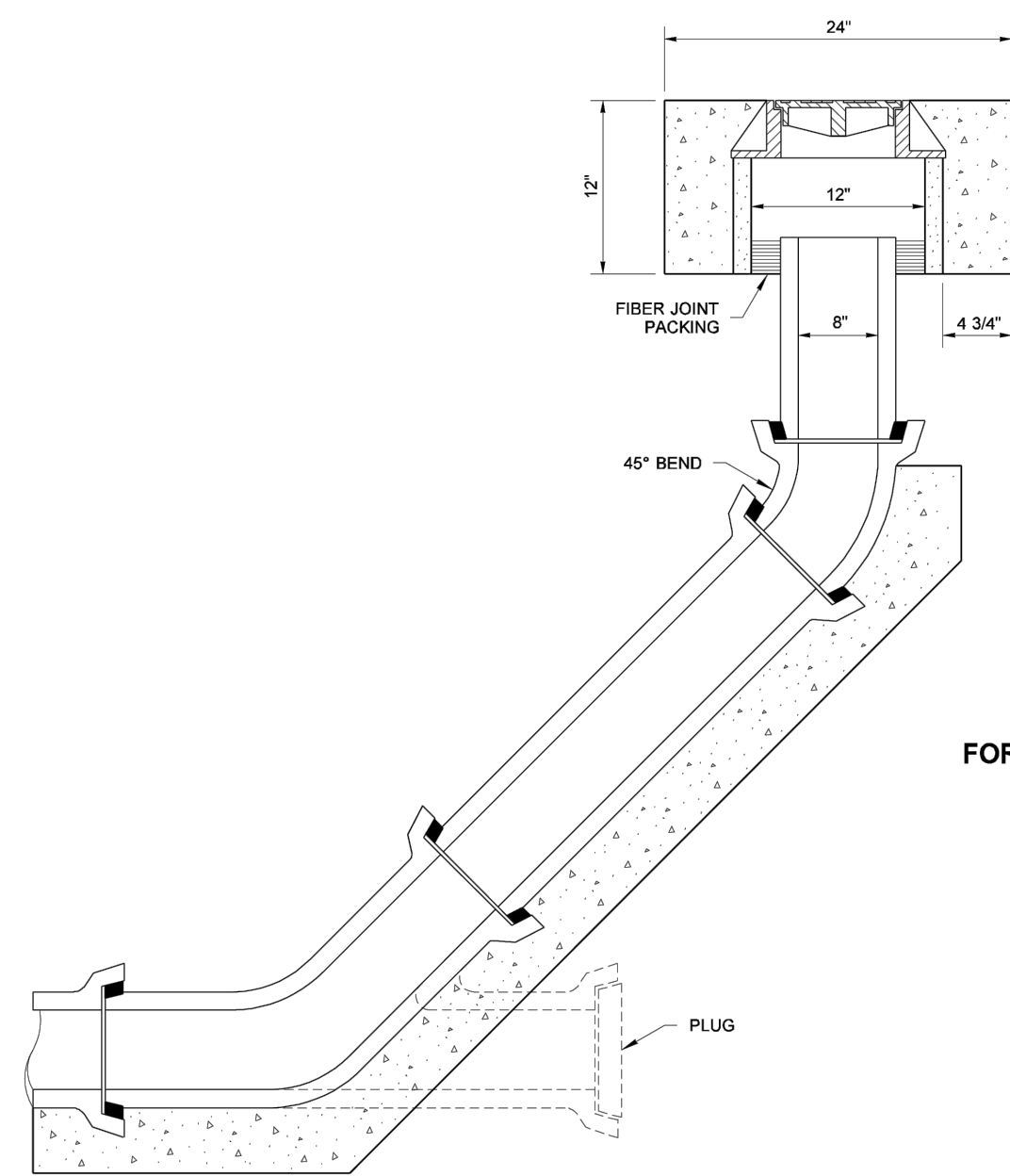
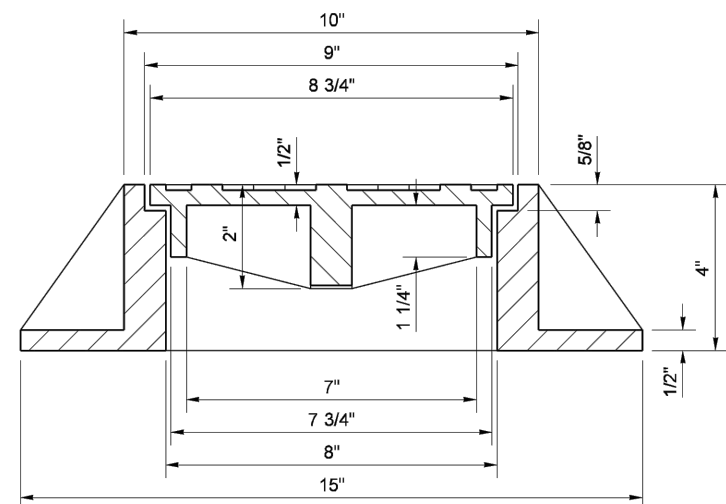
CIRCULAR FRAME (RING
AND COVER)
STANDARD PLAN B-30.70-04
SHEET 1 OF 1 SHEET

DRAWN BY: ADAM COCHRAN



SECTION A

CAST IRON RING AND COVER



FOR SANITARY SEWER USE

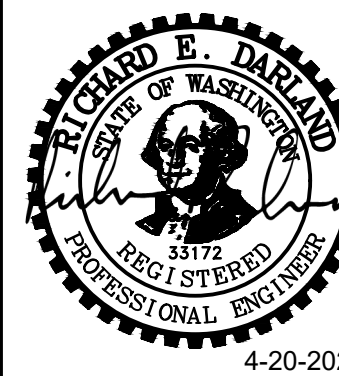
8 INCH SEWER CLEAN-OUT
STANDARD PLAN B-85.40-00
SHEET 1 OF 1 SHEET

STANDARD DETAILS FOR:

CASCADES BUSINESS PARK INFRASTRUCTURE IMPROVEMENTS - PHASE 1
A SITE LOCATED IN THE CITY OF NORTH BONNEVILLE, WASHINGTON



Know what's below.
Call before you dig.



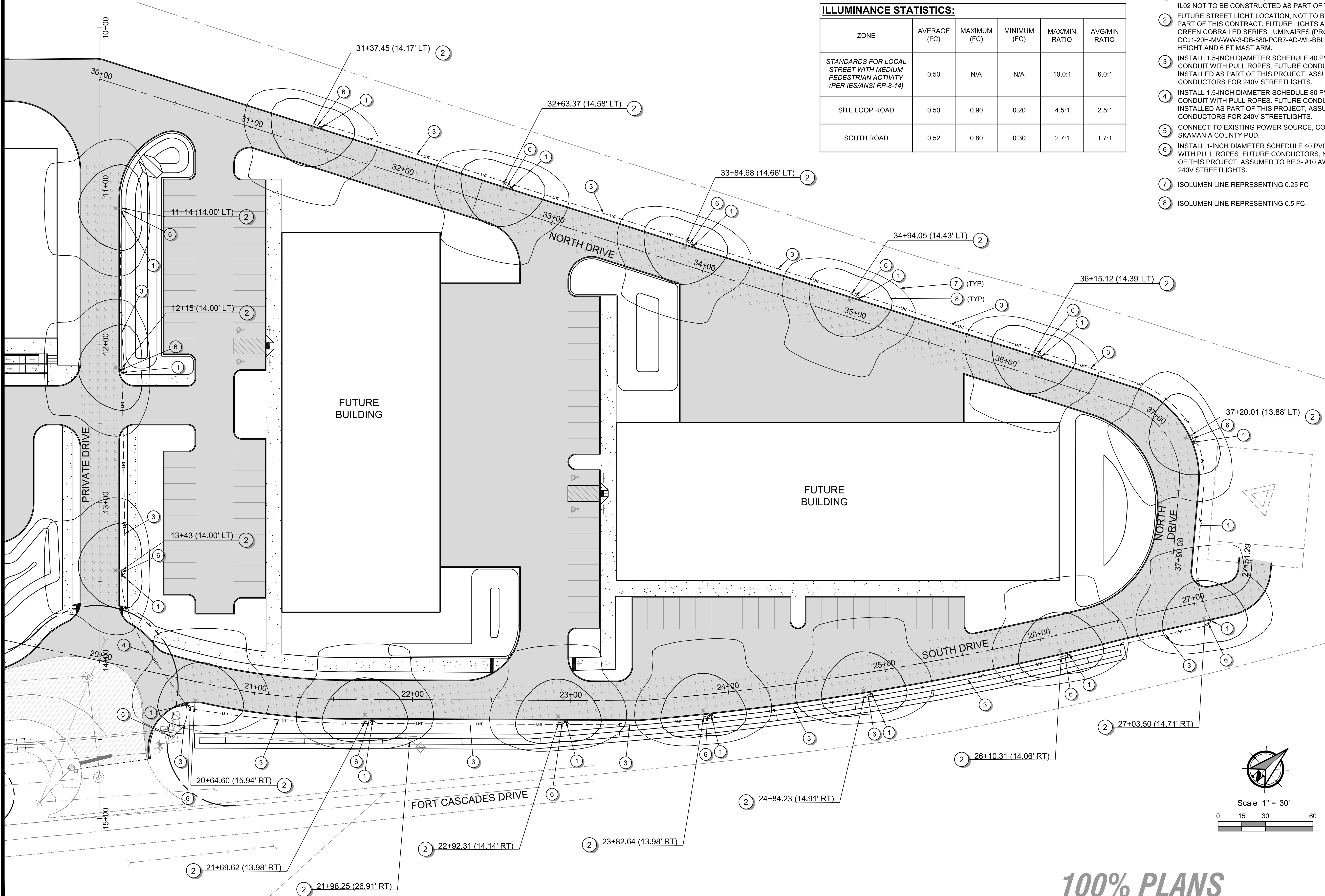
DESIGNED:
ANT
CHECKED:
JBA
APRIL 2026
78260.000

SHEET ID
D04

SHEET 25 OF 28

100% PLANS

I:\Projects\78260\78260-000\Civil\CAD\Working Sheets\project-01\EXH-01 Illumination Exhibit.dwg Layout Tab EXH-01 User: Allison Timboe CAD Plot Date/Time: 4/20/2026 10:58:19 AM



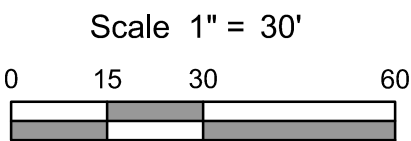
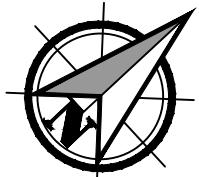
ILLUMINANCE STATISTICS:					
ZONE	AVERAGE (FC)	MAXIMUM (FC)	MINIMUM (FC)	MAX/MIN RATIO	AVG/MIN RATIO
STANDARDS FOR LOCAL STREET WITH MEDIUM PEDESTRIAN ACTIVITY (PER IES/ANSI RP-8-14)	0.50	N/A	N/A	10.0:1	6.0:1
SITE LOOP ROAD	0.50	0.90	0.20	4.5:1	2.5:1
SOUTH ROAD	0.52	0.80	0.30	2.7:1	1.7:1

GENERAL NOTES:

- SEE SHEET G03 FOR PROJECT'S GENERAL NOTES.
- SEE SHEET G02 FOR ABBREVIATIONS AND MASTER LEGEND.

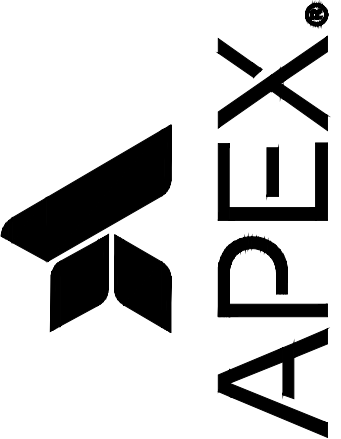
NOTES:

- INSTALL UPSWEEPS ABOVE GRADE. FUTURE TYPE 1 LOCKING-LID JUNCTION BOX LOCATION, PER WSDOT STD PLAN J-40.10 ON SHEET IL02 NOT TO BE CONSTRUCTED AS PART OF THIS CONTRACT.
- FUTURE STREET LIGHT LOCATION. NOT TO BE CONSTRUCTED AS PART OF THIS CONTRACT. FUTURE LIGHTS ASSUMED TO BE LEOTEK GREEN COBRA LED SERIES LUMINAIRES (PRODUCT CODE GCJ1-20H-MV-WW-3-DB-580-PCR7-AD-WL-BBL) WITH 25 FT MOUNTING HEIGHT AND 6 FT MAST ARM.
- INSTALL 1.5-INCH DIAMETER SCHEDULE 40 PVC ELECTRICAL CONDUIT WITH PULL ROPES. FUTURE CONDUCTORS, NOT INSTALLED AS PART OF THIS PROJECT, ASSUMED TO BE 3- #8 AWG CONDUCTORS FOR 240V STREETLIGHTS.
- INSTALL 1.5-INCH DIAMETER SCHEDULE 80 PVC ELECTRICAL CONDUIT WITH PULL ROPES. FUTURE CONDUCTORS, NOT INSTALLED AS PART OF THIS PROJECT, ASSUMED TO BE 3- #8 AWG CONDUCTORS FOR 240V STREETLIGHTS.
- CONNECT TO EXISTING POWER SOURCE, COORDINATE WITH SKAMANIA COUNTY PUD.
- INSTALL 1-INCH DIAMETER SCHEDULE 40 PVC ELECTRICAL CONDUIT WITH PULL ROPES. FUTURE CONDUCTORS, NOT INSTALLED AS PART OF THIS PROJECT, ASSUMED TO BE 3- #10 AWG CONDUCTORS FOR 240V STREETLIGHTS.
- ISOLUMEN LINE REPRESENTING 0.25 FC
- ISOLUMEN LINE REPRESENTING 0.5 FC



100% PLANS

Apex Companies, LLC
1325 SE Tech Center Drive
Suite 140
Vancouver, WA 98683
360.895.3488
apexco.com



PHOTOMETRIC ANALYSIS FOR:
CASCADES BUSINESS PARK INFRASTRUCTURE IMPROVEMENTS - PHASE 1
A SITE LOCATED IN THE CITY OF NORTH BONNEVILLE, WASHINGTON



DESIGNED:
MET

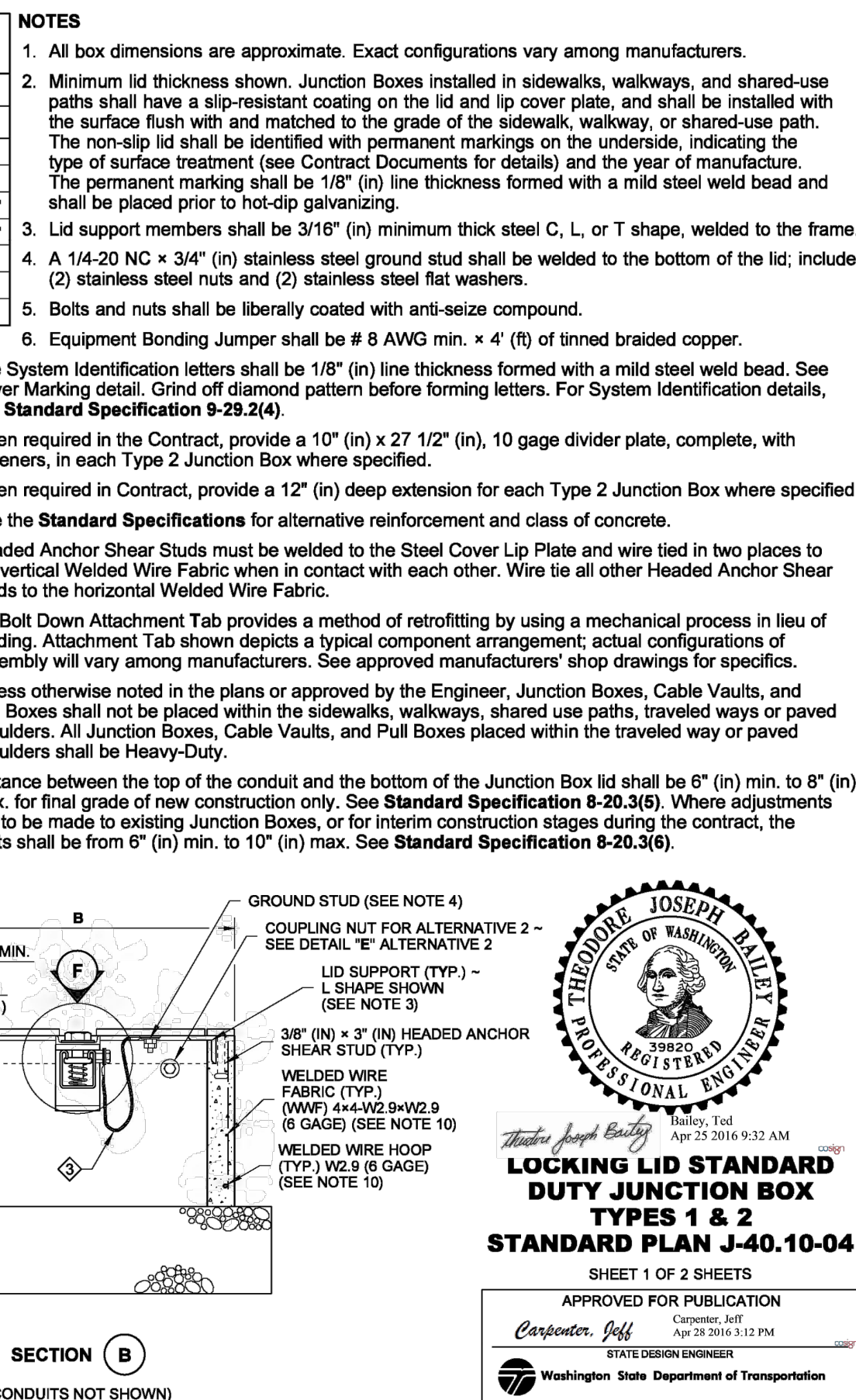
CHECKED:
ASW

APRIL 2026
78260.000

SHEET ID

IL01

SHEET **27** OF **28**



A SITE LOCATED IN THE CITY OF NORTH BONNEVILLE, WASHINGTON