GENERAL NOTES

HORIZONTAL DATA:

1) THE HORIZONTAL CONTROL IN THIS DRAWING ARE LOCAL GRID COORDINATES AT GROUND.

VERTICAL DATA:

1) ELEVATIONS DETERMINED ON THIS PROJECT ARE ASSUMED.

GENERAL NOTES:

1) THESE PLANS RELIED UPON DRAWINGS SUPPLIED TO THIS COMPANY BY RESPEC. THESE DRAWING CONTAINED PROPERTY LINE INFORMATION, EXISTING GRADE CONTOURS, UTILITIES, AND LOCATIONS OF OTHER FEATURES.
2) THE PROFILES SHOWN IN THESE PLANS HAVE A VERTICAL EXAGGERATION OF 2.0.
3) WATER DISTRIBUTION SYSTEM CONSTRUCTION SHALL BE ACCORDANCE WITH THESE PLANS, THE CITY & BOROUGH OF JUNEAU STANDARD SPECIFICATIONS, AND ADEC REGULATIONS AS CONTAINED IN 18-AAC-80, DRINKING WATER.
4) ALL TRENCHING, COMPACTION, AND AGGREGATES SHALL BE COMPLETED IN ACCORDANCE WITH THE CITY & BOROUGH OF JUNEAU STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED.
5) WASTEWATER SYSTEM CONSTRUCTION SHALL BE IN ACCORDANCE WITH THESE PLANS, THE CITY & BOROUGH OF JUNEAU STANDARD SPECIFICATIONS, AND ADEC REGULATIONS AS CONTAINED IN 18-AAC-72, WASTEWATER DISPOSAL.
6) MAINTAIN MINIMUM 10 FOOT HORIZONTAL, AND 18 INCH VERTICAL SEPARATION BETWEEN SEWER AND WATER MAIN LINES AT ANY POINT UNLESS OTHERWISE NOTED IN PLANS.
7) WATER MAINS SHALL CROSS OVER THE TOP OF SEWER MAINS WITH 18 INCHES OF SEPARATION BETWEEN OUTSIDE EDGES OF THE PIPES. THE WATER LINE JOINTS SHALL BE AT LEAST 9 FEET FROM THE SEWER JOINTS. SEE DETAILS.
8) WATER PIPE SHALL BE 4710 RESIN SDR11 HDPE PIPE.
9) GRAVITY SEWER MAINS AND SERVICES SHALL BE C900 PVC PIPE.
10) ALL PRESSURE SEWER MAINS AND LATERALS SHALL BE 4710 RESIN SDR11 HDPE PIPE.
11) DO NOT CHANGE UTILITY DESIGN, LINE, GRADE, SIZE, MATERIALS, ETC. WITHOUT APPROVAL FROM THE DESIGN ENGINEER OR THE CITY AND BOROUGH OF JUNEAU.
12) THE WATER LINE DESIGN IS BASED ON HDPE PIPE WITH AN ALLOWABLE BENDING RADIUS = 10-D. THE CONTRACTOR SHALL SUBMIT ALIGNMENT SHOP DRAWINGS IF SELECTED HDPE PIPE MANUFACTURER'S ALLOWABLE BENDING RADIUS IS GREATER.
13) MAINTAIN 5' MINIMUM COVER ON WATER MAINS AND 5' MINIMUM COVER OVER SANITARY SEWER FORCE MAINS AND PRESSURE LATERALS.
14) SEWER PIPE ELEVATIONS ARE TO BOTTOM OF PIPE
15) SEWER PIPE SLOPES ARE CALCULATED FROM FACE OF MANHOLE
16) SUBMITTALS – THE CONTRACTOR SHALL SUBMIT DATA SHEETS FOR ALL CONSTRUCTION MATERIALS TO THE CITY & BOROUGH OF JUNEAU PUBLIC WORKS DEPARTMENT AND OBTAIN WRITTEN APPROVAL FOR THE CONSTRUCTION MATERIALS PRIOR TO PURCHASING AND INSTALLING THEM. THE CONSTRUCTION MATERIALS INCLUDE BUT ARE NOT LIMITED TO ALL PIPE, FITTINGS, VALVES, CURB STOPS, CORPORATION STOPS, TAPPING SADDLES, MANHOLES, FRAMES & LIDS, CLEANOUTS, AND HYDRANTS.
17) THE CONTRACTOR SHALL COORDINATE WORK WITHIN THE CROW HILL ROADWAY AND SIDEWALK WITH THE "CROW HILL RESURFACING AND UTILITY REHABILITATION CBJ CONTRACT NO. BE23-151".

SOIL INVESTIGATION RESULTS

SEE GEOTECHNICAL REPORT FOR THIS PROPERTY PRODUCED BY RESPEC DATED OCTOBER 13, 2022

LEGEND

FEATURE DESCRIPTION	EXISTING	PROPOSED
PROPERTY LINE		N/A
PROPERTY LINE (INFORMATIONAL)		N/A
CENTERLINE		
CONCRETE		
ASPHALT		
BUILDING LINE		
BUILDING OVERHANG		AS NOTED
EDGE OF ASPHALT/CONCRETE		(PATCH)
EDGE OF GRAVEL		N/A
TOP/TOE/DITCH (GENERAL)		
OVERHEAD UTILITY LINE	XOH XOH XOH XOH	N/A
UNDERGROUDN UTILITY LINE	UGP UGP UGP UGP	N/A
STORM DRAIN	XSD XSD XSD XSD	SD SD SD SD
SEWER LINE	XSS XSS XSS XSS	SS SS SS SS
SEWER LINE (RECORD)	SS(R) SS(R)	N/A
SANITARY SEWER PRESSURE LINE	XFM XFM XFM	FM FM FM FM
SEWER SERVICE	N/A	S SERV S SERV S SERV
WATER LINE	XW XW XW XW	W W W W W
WATER SERVICE	N/A	W SERV W SERV W SERV
WATER LINE (RECORD)	W(R) W(R) W(R)	N/A
RAW SALTWATER LINE	SRAW SRAW	N/A
FUEL/GAS LINE	G G G G G	N/A
FENCE	X X X X X	
GUARD RAIL		N/A
MAJOR CONTOUR		
MINOR CONTOUR		
POSSIBLE UNKNOWN LINE DETECTED BY GPR	? ? ?	N/A

NOTE: LINE WEIGHTS VARY BETWEEN SHEETS

FEATURE DESCRIPTION	EXISTING	PROPOSED
UTILITY POLE	HDX XOH	PDX XOH
GUY ANCHOR		N/A
CONTROL POINT (AS NOTED)		N/A
FOUND MONUMENT (AS NOTED)		N/A
STORM DRAIN MANHOLE	SD XSD	SD SD
STORM CATCH BASIN		
STORM CLEANOUT	CO	CO
SANITARY SEWER MANHOLE	S	S
SANITARY SEWER CLEANOUT	CO	CO
BOLLARD/POST (TYPE AS NOTED)	WV	
WATER VALVE		
FIRE HYDRANT		
LIGHT POLE		N/A
ELECTRICAL METER	EM	N/A
SIGN		N/A
TEST PIT	TP	N/A
ROCK WALL		

REVISIONS:

THRHA
Single Family Dwelling
PHASE I

STATUS:
CONSTRUCTION DOCUMENTS

DRAWN BY: JPT
CHECKED BY: TSS
DATE: 8/31/2023
PROJECT #: 222321.10

R&M ENGINEERING-KETCHIKAN, INC.
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AELC 576

STATE OF ALASKA
49th
JOEL P. TEUNE
12194
8/31/2023
REGISTERED PROFESSIONAL ENGINEER

SHEET DESCRIPTION:
GENERAL NOTES/
LEGEND/GEOTECHNICAL

C001

SHEET:
01 of **24**

SEWER EASEMENT

DOUGLAS HIGHWAY

10' WIDE UTILITY EASEMENT

FOG LINE

RIGHT OF WAY

BUS PULL OUT

DRIVEWAY EASEMENT

DRIVEWAY EASEMENT PER BOOK 0451, PAGE 657. THIS THE GRAPHICAL DEPICTION OF THIS EASEMENT IS APPROXIMATE ONLY, EXACT DIMENSIONS UNKNOWN.

APPROXIMATE TREE DRIP LINE, TYP.

LOT 1A
CHATHAM PLACE SUBDIVISION

5' WIDE UTILITY EASEMENT

TOE OF SLOPE

TOE OF BANK

PLANTER TO BE REMOVED

TIMBER GAZEBO TO BE REMOVED

COMPOST BOX TO BE REMOVED

LOT 2A
CHATHAM PLACE SUBDIVISION
(ST. VINCENT DE PAUL SOCIETY)

REMOVE SIDEWALK THIS AREA

15' WIDE ELECTRICAL & CATV EASEMENT

CROW HILL DRIVE

DRIVEWAY EASEMENT

SHED

DRIVEWAY EASEMENT PER BOOK 0451, PAGE 657. THIS THE GRAPHICAL DEPICTION OF THIS EASEMENT IS APPROXIMATE ONLY, EXACT DIMENSIONS UNKNOWN.

MAGNETIC 18° 25'

SCALE 1"=15'

THIS DRAWING MAY BE REDUCED, VERIFY SCALE BEFORE USING

0 7.5 15 30 45 60 FEET
0 3.75 7.5 11.25 15 18.75 METERS

1 METER = 3.2808333 U.S. SURVEY FEET
1 U.S. ACRE = 0.4047 HECTARES

REVISIONS:

THRHA
Single Family Dwelling
PHASE I

STATUS:

CONSTRUCTION DOCUMENTS

DRAWN BY: JPT
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PROJECT #: 222321.10

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SHEET DESCRIPTION:
EXISTING CONDITIONS

C100

SHEET:
02 of **24**

INSTALL RETAINING WALL #1

1.5H:1V

APPROX. 5'

CLEARING LIMITS, TYP.

INSTALL NEW BUILDING PER ARCH. AND STRUCT.

INSTALL SANITARY SEWER LINE

INSTALL WATER LINE

APPROXIMATE LOCATION OF FUTURE WATER LINE. SEE NOTE 17) ON SHEET C100

GRADING POINT, TYP.

INSTALL STACKED BLOCK WALL AS REQUIRED FOR HYDRANT

DRIVEWAY CENTERLINE

ROAD CENTERLINE

2H:1V

RAD. 10'

5.0%

2.5%

SHEET C200.3

1 C204

1 C204.1

MAGNETIC 18° 25'

SCALE 1"=10'

THIS DRAWING MAY BE REDUCED, VERIFY SCALE BEFORE USING

0 5 10 20 30 40 FEET

0 1 2 3 4 5 10 12 METERS

1 METER = 3.2808333 U.S. SURVEY FEET

1 U.S. ACRE = 0.4047 HECTARES

REVISIONS:

THRHA
Single Family Dwelling
PHASE I

STATUS:

CONSTRUCTION DOCUMENTS

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SHEET DESCRIPTION:

SITE, GRADING, AND STORM DRAIN PLAN

C200

SHEET:

03 *of* **24**

GRADING POINT TABLE

POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
5000	9765.68	10144.85	113.47	GUTTER PAN (MATCH EXIST.)
5001	9769.32	10150.83	113.31	SIDEWALK
5002	9762.48	10154.99	114.34	BASE COARSE AT EOP
5003	9767.51	10163.14	114.95	BASE COARSE AT EOP
5004	9778.51	10165.76	111.41	BASE COARSE AT EOP
5005	9932.89	10107.73	99.14	BASE COARSE AT EOP
5006	9968.41	10143.65	97.00	FINISH GRADE
5007	9972.63	10147.92	93.00	FINISH GRADE
5008	9991.24	10166.74	91.68	FINISH GRADE
5009	9977.04	10180.81	91.86	FINISH GRADE
5010	9962.04	10202.59	92.10	FINISH GRADE
5011	9835.47	10328.42	94.11	FINISH GRADE
5012	9813.05	10305.74	95.70	FINISH GRADE
5013	9808.83	10301.47	99.70	FINISH GRADE
5014	9770.10	10262.31	100.81	BASE COARSE AT EOP
5015	9761.66	10253.78	101.05	BASE COARSE AT EOP
5016	9768.77	10246.75	100.92	BASE COARSE AT EOP
5017	9771.74	10239.70	100.95	BASE COARSE AT EOP
5018	9768.85	10232.61	101.00	BASE COARSE AT EOP
5019	9765.33	10229.05	101.10	BASE COARSE AT EOP
5020	9779.55	10214.99	100.86	BASE COARSE AT EOP
5021	9783.07	10218.54	100.76	BASE COARSE AT EOP
5022	9790.12	10221.51	100.60	BASE COARSE AT EOP
5023	9797.21	10218.62	100.44	BASE COARSE AT EOP
5024	9858.50	10116.50	100.44	BASE COARSE AT EOP
5025	9863.56	10146.77	100.40	BASE COARSE AT EOP
5026	9857.01	10145.60	101.49	BASE COARSE AT EOP
5027	9791.10	10186.19	110.79	BASE COARSE AT EOP
5028	9767.98	10190.31	112.59	BASE COARSE AT EOP
5029	9753.53	10192.88	114.03	BASE COARSE AT EOP

GRADING POINT TABLE

POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
5030	9728.20	10208.49	116.87	BASE COARSE AT EOP
5031	9710.02	10178.96	117.91	GUTTER PAN (MATCH EXIST.)
5032	9862.66	10153.90	99.32	BASE COARSE AT EOP
5033	9911.49	10101.65	99.53	BASE COARSE AT EOP
5034	10006.26	10160.77	85.10	RETAINING WALL #1 STA: 1+00
5035	9995.05	10172.18	88.39	RETAINING WALL #1 CORNER FINISHED GRADE
5036	10000.77	10177.81	84.40	RETAINING WALL #1 CORNER FINISHED GRADE
5037	9904.54	10274.62	87.81	RETAINING WALL #1 CORNER FINISHED GRADE
5038	9907.38	10277.45	85.80	RETAINING WALL #1 CORNER FINISHED GRADE
5039	9837.24	10348.80	83.80	RETAINING WALL #1 CORNER FINISHED GRADE
5040	9926.32	10103.26	99.28	BASE COARSE AT EOP
5041	9920.73	10107.61	99.29	BASE COARSE AT CENTERLINE
5042	9918.55	10114.03	99.23	BASE COARSE AT CENTERLINE
5043	9914.52	10119.49	99.20	BASE COARSE AT CENTERLINE
5044	9898.66	10135.17	99.15	BASE COARSE AT CENTERLINE
5045	9871.10	10162.43	99.07	BASE COARSE AT CENTERLINE
5046	9978.17	10166.31	92.23	FINISHED GRADE AT BUILDING CORNER
5047	9962.52	10181.78	92.59	FINISHED GRADE AT BUILDING CORNER
5048	9932.29	10151.21	98.08	FINISHED GRADE AT BUILDING CORNER
5049	9947.23	10135.03	97.85	FINISHED GRADE AT BUILDING CORNER
5050	9951.86	10192.33	92.77	FINISHED GRADE AT BUILDING CORNER
5051	9936.22	10207.80	93.02	FINISHED GRADE AT BUILDING CORNER
5052	9905.98	10177.22	98.42	FINISHED GRADE AT BUILDING CORNER
5053	9920.92	10161.04	98.30	FINISHED GRADE AT BUILDING CORNER
5054	9925.55	10218.35	93.16	FINISHED GRADE AT BUILDING CORNER
5055	9909.91	10233.81	93.42	FINISHED GRADE AT BUILDING CORNER
5056	9879.67	10203.24	98.66	FINISHED GRADE AT BUILDING CORNER
5057	9894.61	10187.06	98.42	FINISHED GRADE AT BUILDING CORNER
5058	9899.24	10244.36	93.60	FINISHED GRADE AT BUILDING CORNER
5059	9883.60	10259.83	93.87	FINISHED GRADE AT BUILDING CORNER

GRADING POINT TABLE

POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
5060	9853.36	10229.26	99.11	FINISHED GRADE AT BUILDING CORNER
5061	9868.30	10213.08	98.87	FINISHED GRADE AT BUILDING CORNER
5062	9872.93	10270.38	94.05	FINISHED GRADE AT BUILDING CORNER
5063	9857.29	10285.85	94.31	FINISHED GRADE AT BUILDING CORNER
5064	9827.06	10255.27	99.56	FINISHED GRADE AT BUILDING CORNER
5065	9841.99	10239.09	99.32	FINISHED GRADE AT BUILDING CORNER
5066	9846.63	10296.40	94.49	FINISHED GRADE AT BUILDING CORNER
5067	9830.98	10311.87	94.75	FINISHED GRADE AT BUILDING CORNER
5068	9800.75	10281.29	100.00	FINISHED GRADE AT BUILDING CORNER
5069	9815.69	10265.11	99.76	FINISHED GRADE AT BUILDING CORNER
5070	9931.73	10119.35	98.77	BASE COARSE AT EOP
5071	9944.38	10132.15	98.01	BASE COARSE AT EOP
5072	9930.16	10146.21	98.24	BASE COARSE AT EOP
5073	9917.50	10133.41	98.87	BASE COARSE AT EOP
5074	9905.42	10145.37	98.91	BASE COARSE AT EOP
5075	9918.07	10158.17	98.44	BASE COARSE AT EOP
5076	9903.85	10172.23	98.52	BASE COARSE AT EOP
5077	9891.20	10159.43	98.87	BASE COARSE AT EOP
5078	9879.11	10171.39	98.84	BASE COARSE AT EOP
5079	9891.77	10184.18	98.49	BASE COARSE AT EOP
5080	9877.55	10198.25	98.74	BASE COARSE AT EOP
5081	9864.89	10185.45	99.09	BASE COARSE AT EOP
5082	9852.80	10197.40	99.30	BASE COARSE AT EOP
5083	9865.46	10210.20	98.95	BASE COARSE AT EOP
5084	9851.24	10224.26	99.19	BASE COARSE AT EOP
5085	9838.58	10211.47	99.54	BASE COARSE AT EOP
5086	9826.49	10223.42	99.75	BASE COARSE AT EOP
5087	9839.15	10236.22	99.40	BASE COARSE AT EOP
5088	9824.93	10250.28	99.64	BASE COARSE AT EOP
5089	9812.27	10237.48	99.99	BASE COARSE AT EOP

GRADING POINT TABLE

POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
5090	9800.18	10249.44	100.20	BASE COARSE AT EOP
5091	9812.84	10262.23	99.84	BASE COARSE AT EOP
5092	9798.62	10276.30	100.08	BASE COARSE AT EOP
5093	9785.96	10263.50	100.44	BASE COARSE AT EOP
5094	9778.54	10270.85	100.57	BASE COARSE AT EOP
5095	9883.95	10105.36	99.98	BASE COARSE AT EOP
5096	9918.68	10101.69	99.41	BASE COARSE AT EOP

REVISIONS:

THRHA
Single Family Dwelling
PHASE I

STATUS:
CONSTRUCTION DOCUMENTS

DRAWN BY: JPT
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PROJECT #: 222321.10

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AELC 576

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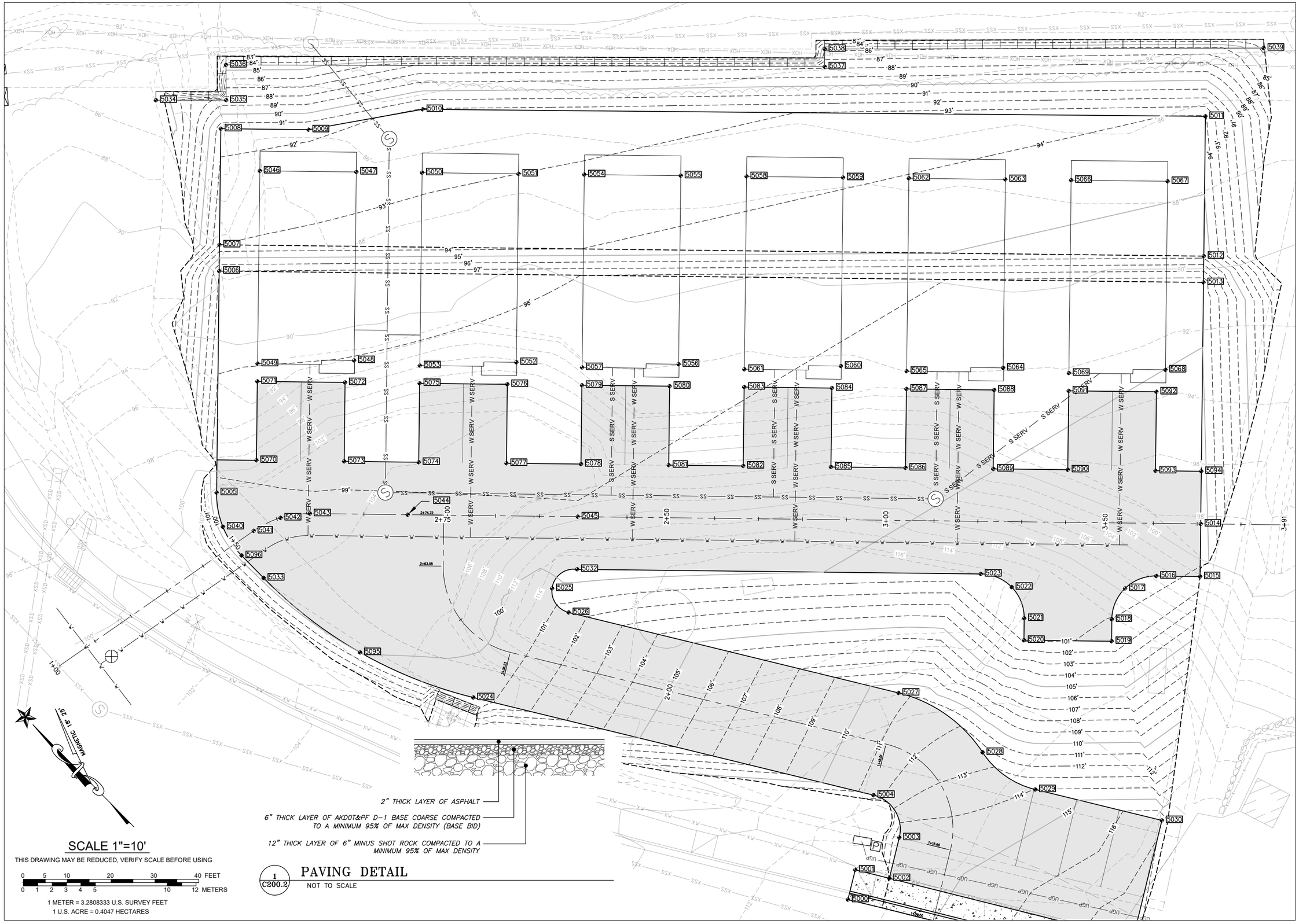
121948
8/31/2023
REGISTERED PROFESSIONAL ENGINEER

SHEET DESCRIPTION:
GRADING POINT TABLES

C200.1

SHEET:
04 *of* **24**



SCALE 1"=10'

THIS DRAWING MAY BE REDUCED, VERIFY SCALE BEFORE USING

0 5 10 20 30 40 FEET
0 1 2 3 4 5 10 12 METERS

1 METER = 3.2808333 U.S. SURVEY FEET
1 U.S. ACRE = 0.4047 HECTARES

1 / C200.2 **PAVING DETAIL**
NOT TO SCALE

REVISIONS:

THRHA
Single Family Dwelling
PHASE I

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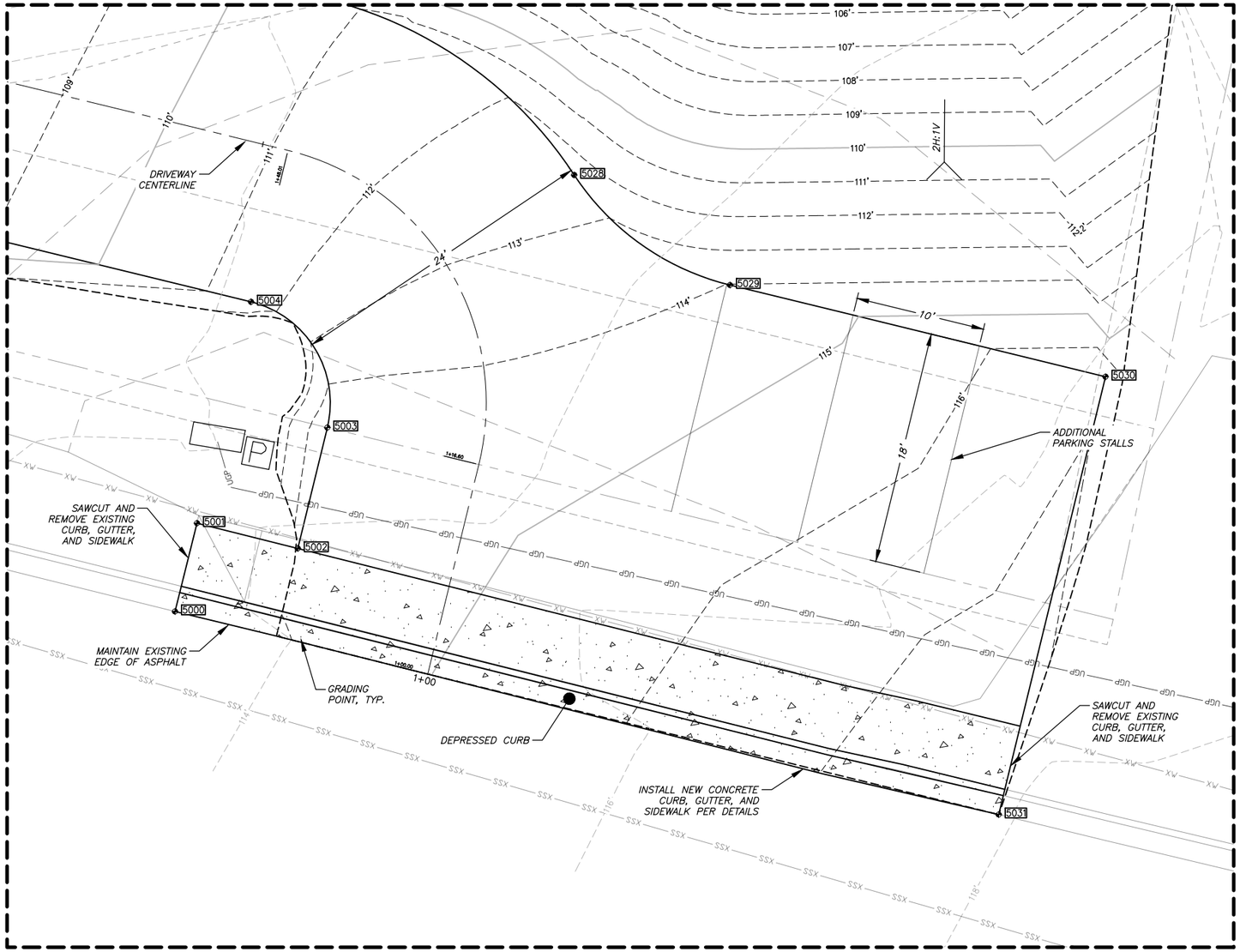
SHEET DESCRIPTION:
ALTERNATE NO. 1 - SITE PAVING

C200.2

SHEET:
05 *of* **24**



MAGNETIC 18° 25'

SCALE 1"=5'

THIS DRAWING MAY BE REDUCED, VERIFY SCALE BEFORE USING

0 2.5 5 10 15 20 FEET

0 0.5 1 1.5 2 2.5 5 6 METERS

1 METER = 3.2808333 U.S. SURVEY FEET

1 U.S. ACRE = 0.4047 HECTARES

REVISIONS:

THRHA
Single Family Dwelling
PHASE I

STATUS:

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8/31/2023
REGISTERED PROFESSIONAL ENGINEER

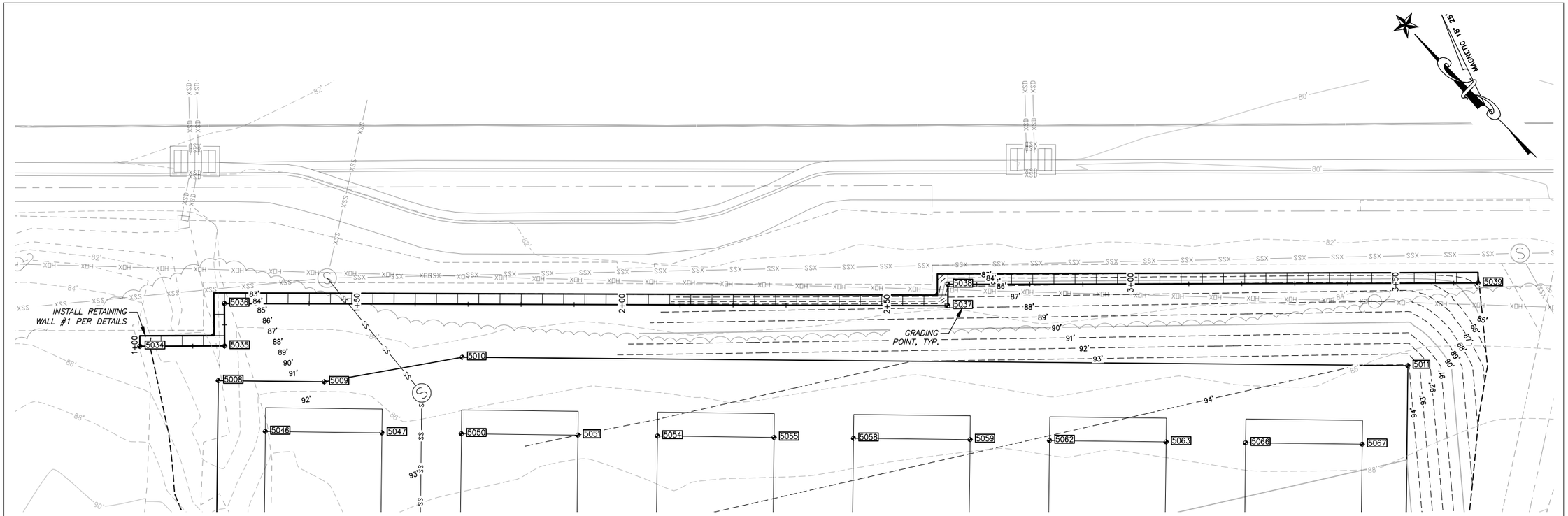
SHEET DESCRIPTION:

SITE, GRADING, AND STORM DRAIN PLAN

C200.3

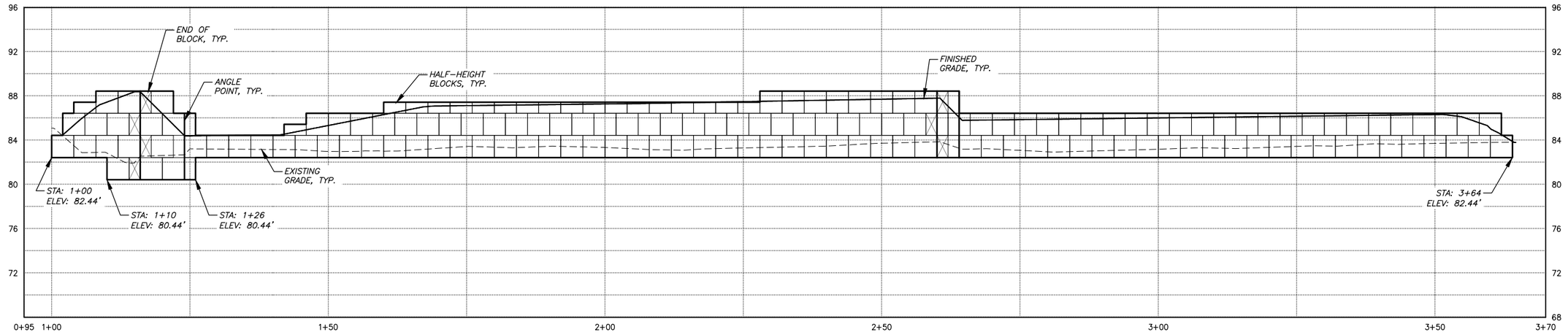
SHEET:

06 *of* **24**



1 C201 RETAINING WALL #1 PLAN

0 10' 20'



2 C201 RETAINING WALL #1 PROFILE

NOT TO SCALE

REVISIONS:

THRHA
Single Family Dwelling
PHASE I

STATUS:
CONSTRUCTION DOCUMENTS

DRAWN BY: JPT
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DATE: 8/31/2023
PROJECT #: 222321.10

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8/31/2023
REGISTERED PROFESSIONAL ENGINEER

SHEET DESCRIPTION:
RETAINING WALL #1 PLAN AND PROFILE

C201

SHEET:
07 *of* **24**

SANITARY SEWER CONSTRUCTION NOTES

SS MH 1
INSTALL 48" SAN MH
SS MH – 1
STA: 1+00
OFF: 0' RT
RIM=100.0' +/–
4" IE IN (NE)=94.1'
4" IE IN (E)=94.1'
8" IE OUT (NW)=94.0'
N: 9816.63
E: 10223.33
SEE DETAILS

SS LINE 1
INSTALL 122 LF
8" C900
S=0.02
SEE DETAILS

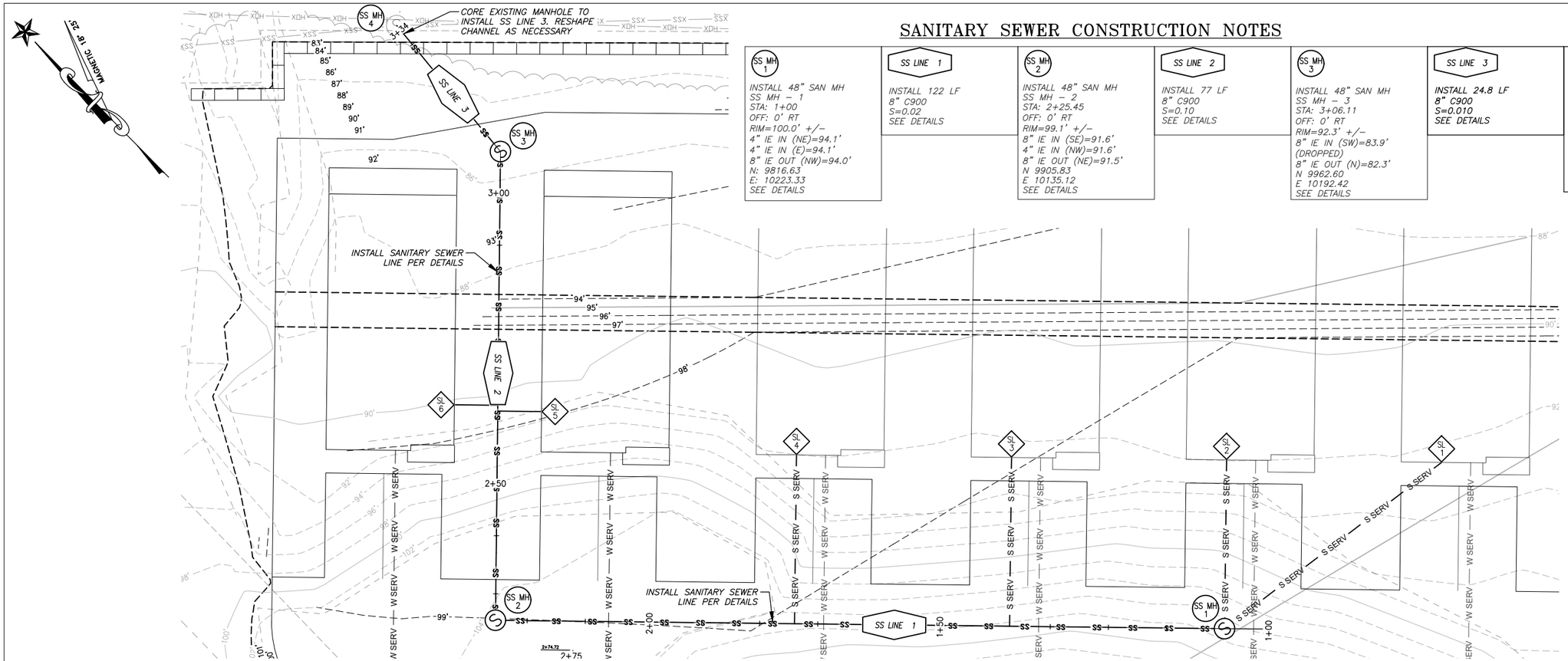
SS MH 2
INSTALL 48" SAN MH
SS MH – 2
STA: 2+25.45
OFF: 0' RT
RIM=99.1' +/–
8" IE IN (SE)=91.6'
4" IE IN (NW)=91.6'
8" IE OUT (NE)=91.5'
N 9905.83
E 10135.12
SEE DETAILS

SS LINE 2
INSTALL 77 LF
8" C900
S=0.10
SEE DETAILS

SS MH 3
INSTALL 48" SAN MH
SS MH – 3
STA: 3+06.11
OFF: 0' RT
RIM=92.3' +/–
8" IE IN (SW)=83.9'
(DROPPED)
8" IE OUT (N)=82.3'
N 9962.60
E 10192.42
SEE DETAILS

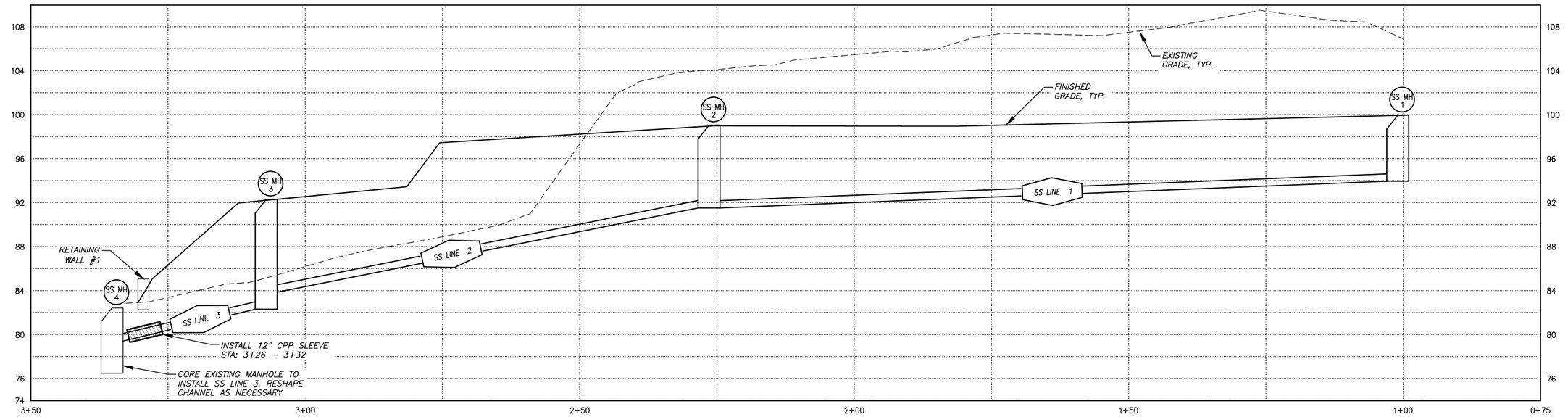
SS LINE 3
INSTALL 24.8 LF
8" C900
S=0.010
SEE DETAILS

SS MH 4
EXIST. 48" SAN MH
SS MH – 4
STA: 3+34.20
OFF: 0' RT
RIM=82.4' +/–
8" IE IN (S)=79.4'
(DROPPED)
N: N/A
E: N/A
SEE DETAILS



1 C202 SANITARY SEWER LINE #1 PLAN

0 10' 20'



2 C202 SANITARY SEWER LINE #1 PROFILE

0 10' 20'

REVISIONS:

THRHA
Single Family Dwelling
PHASE I

STATUS:
CONSTRUCTION DOCUMENTS

DRAWN BY: JPT
CHECKED BY: TSS
DATE: 8/31/2023
PROJECT #: 222321.10

R&M ENGINEERING-KETCHIKAN, INC.
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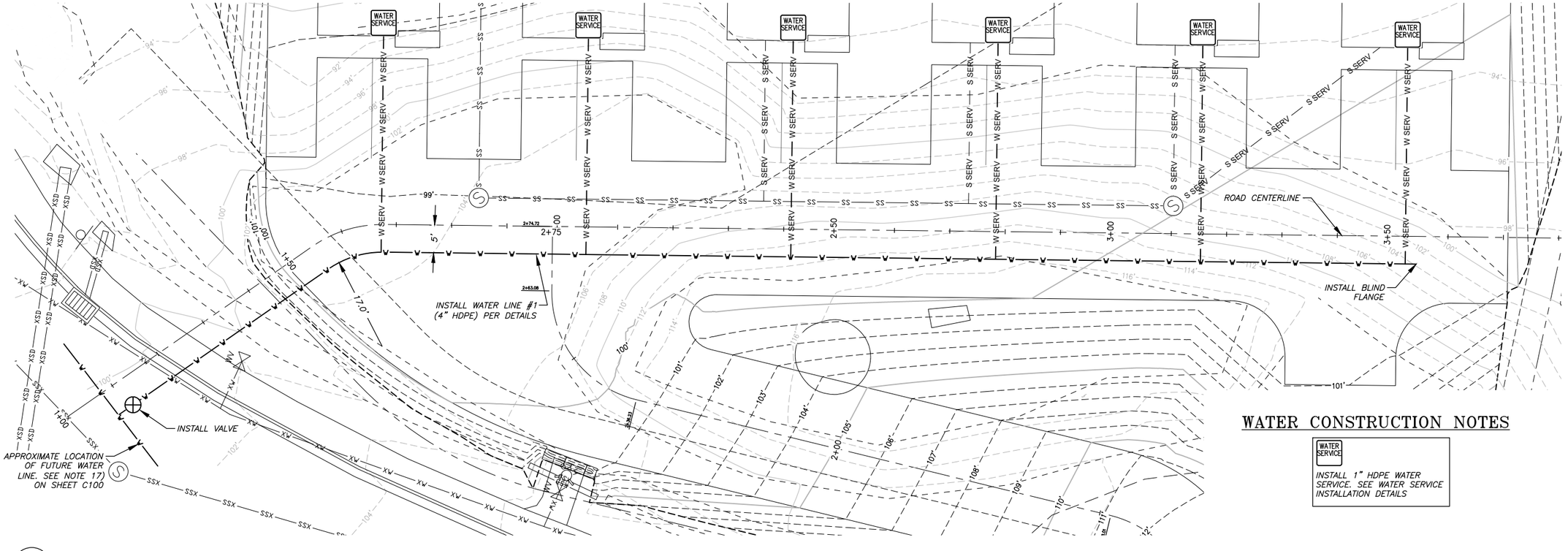
KETCHIKAN, ALASKA 99901
PH: 907.225.7187
www.ketchikanengineer.com
AELC 576

STATE OF ALASKA
49th
JOEL P. TEUNE
121948
8/31/2023
REGISTERED PROFESSIONAL ENGINEER

SHEET DESCRIPTION:
SAN. SEWER LINE #1 PLAN AND PROFILE

C202

SHEET:
08 of **24**



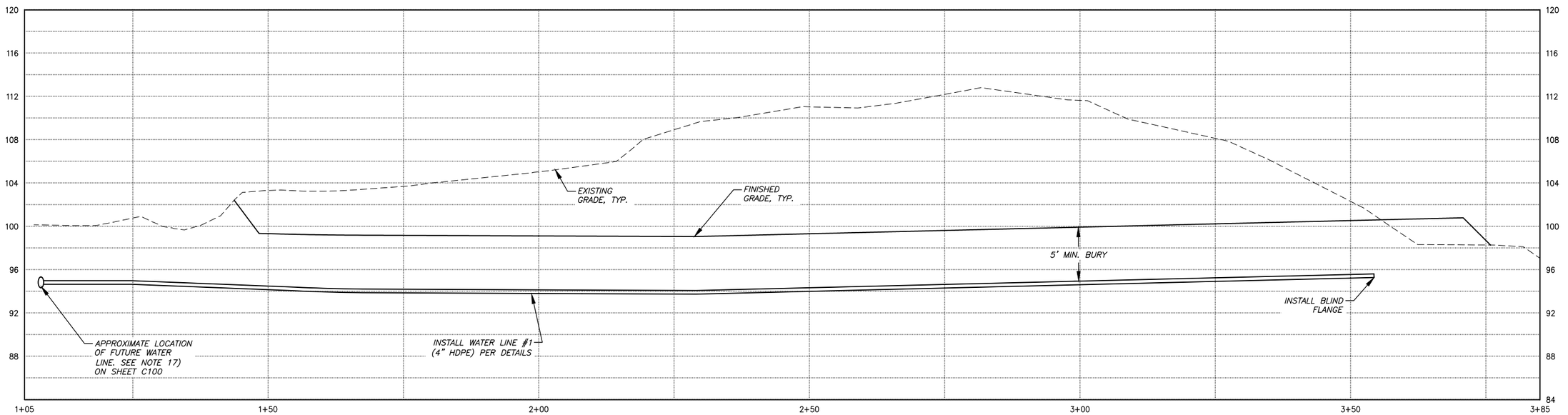
WATER CONSTRUCTION NOTES

WATER SERVICE

INSTALL 1" HDPE WATER SERVICE. SEE WATER SERVICE INSTALLATION DETAILS

1 C203 WATER LINE #1 PLAN

0 10' 20'



2 C203 WATER LINE #1 PROFILE

0 10' 20'

REVISIONS:

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PHASE I

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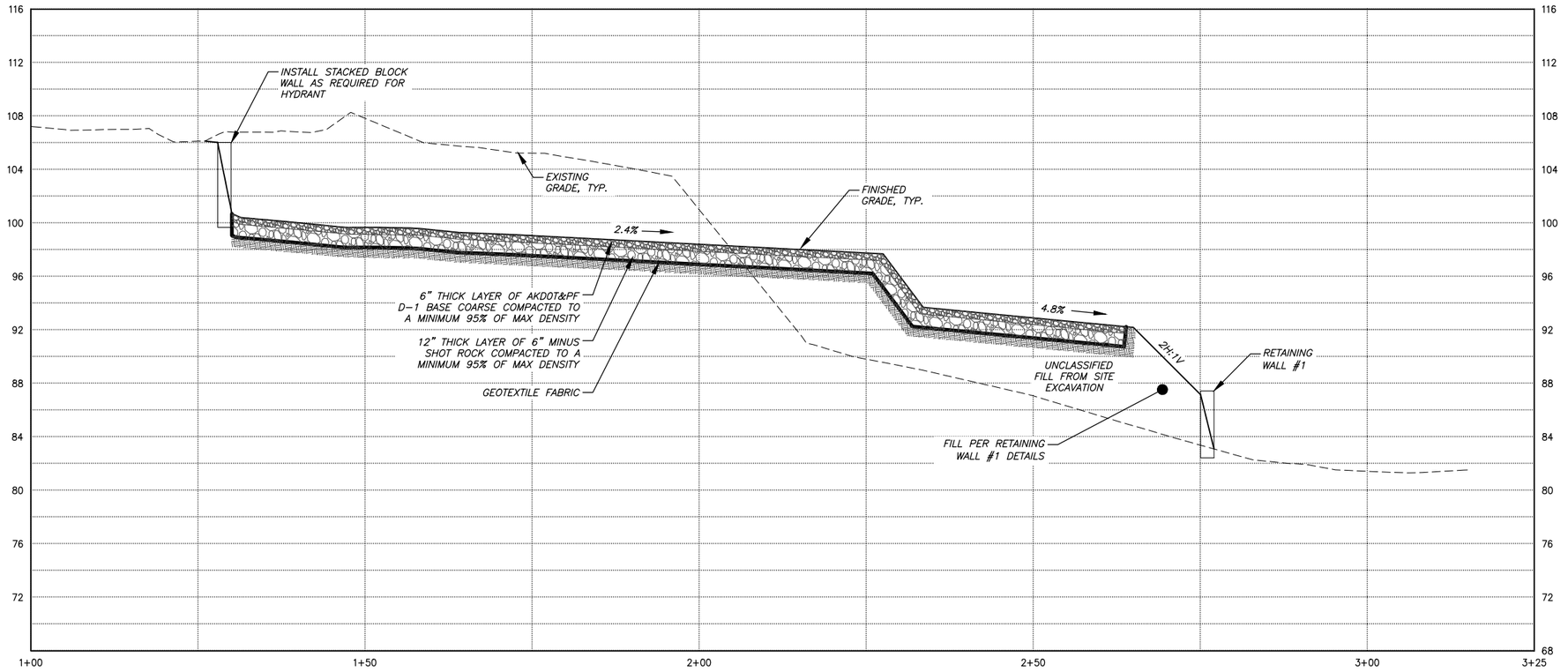
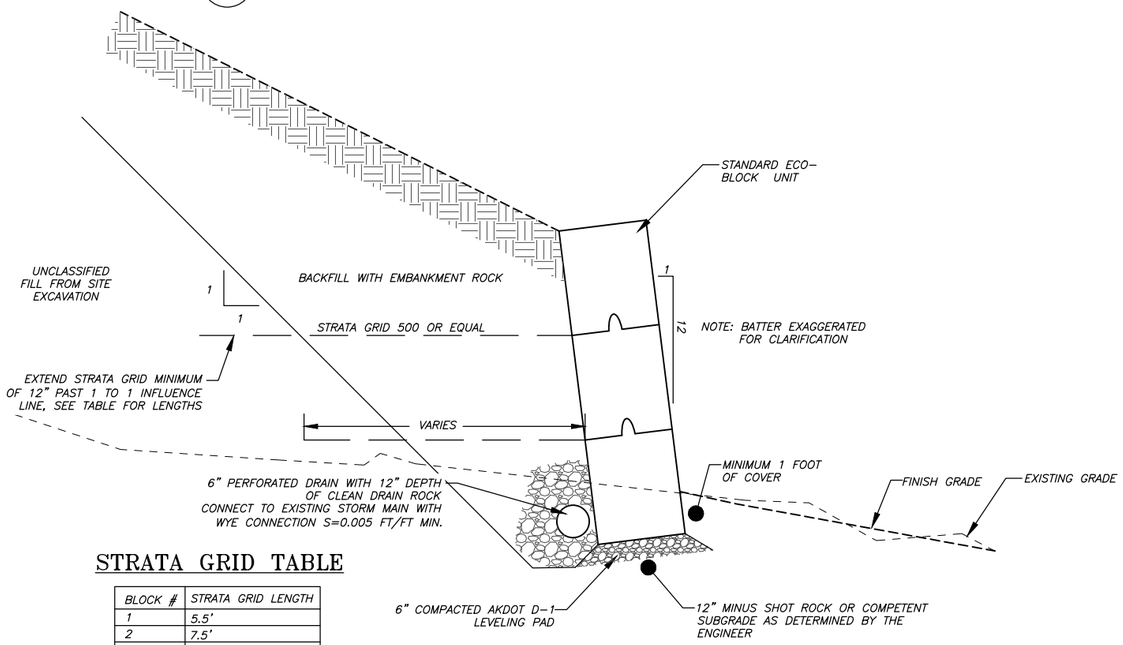
WATER LINE #1
PLAN AND PROFILE

C203

SHEET:
09 *of* **24**



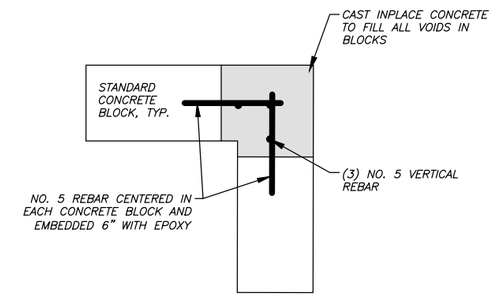
1 C204 SITE SECTION VIEW
NOT TO SCALE



STRATA GRID TABLE

BLOCK #	STRATA GRID LENGTH
1	5.5'
2	7.5'
3	9.5'
4	11.5'
5	13.5'

2 C204 STACKED BLOCK RETAINING WALL SECTION DETAIL
NOT TO SCALE



3 C204 CAST IN PLACE CONCRETE JOINT DETAIL
NOT TO SCALE

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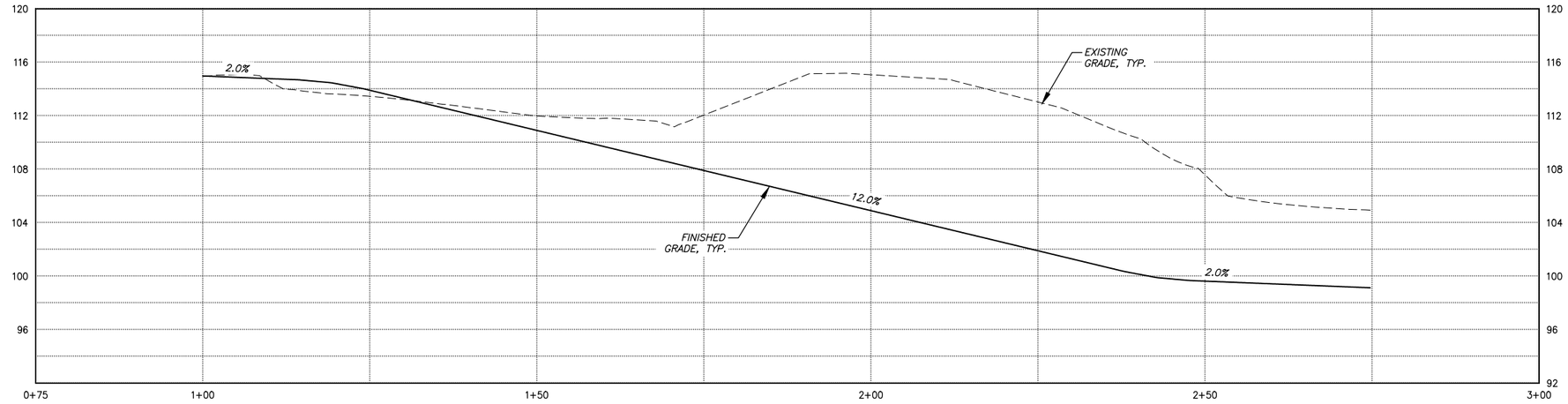
SHEET DESCRIPTION:
PROFILES AND SECTIONS

C204

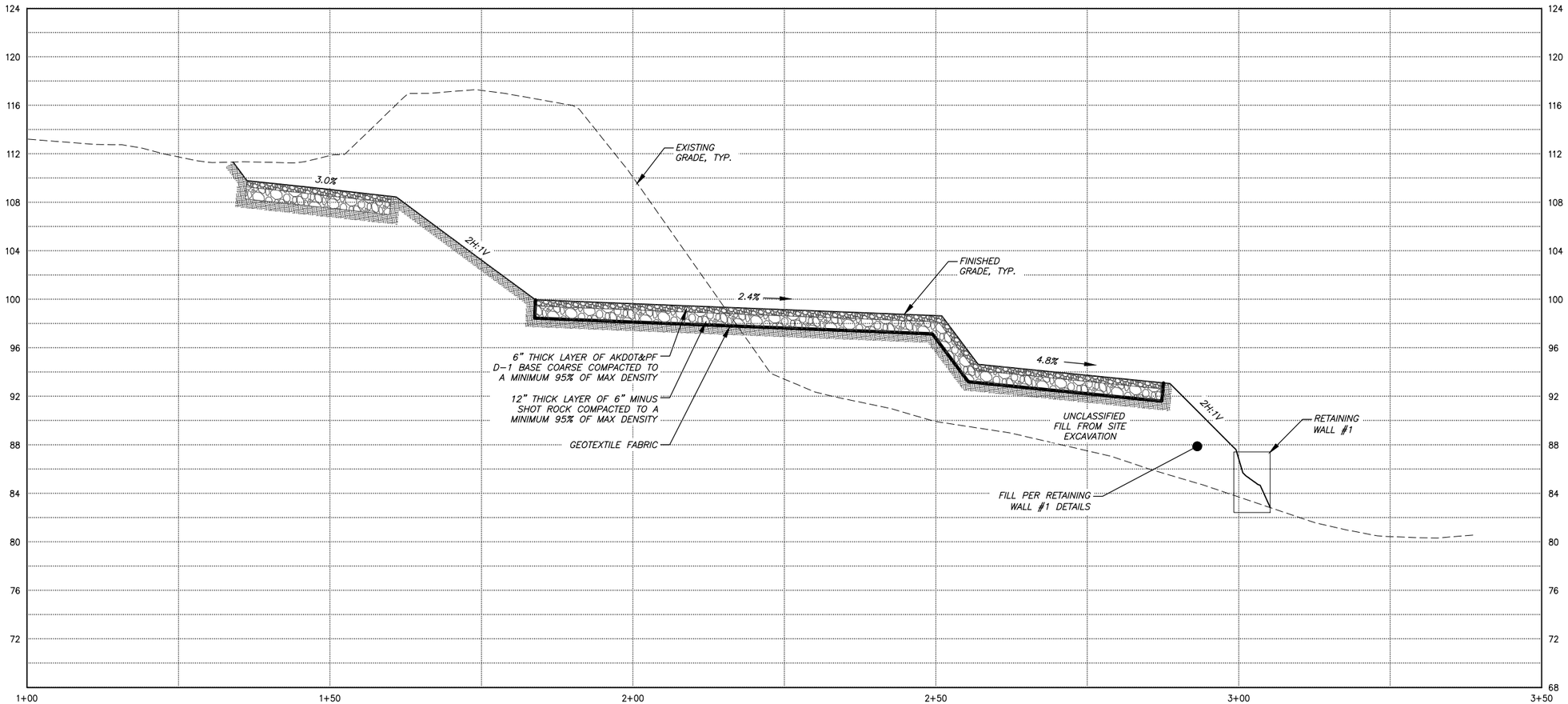
SHEET:
10 *of* **24**



1
C204.1

DRIVEWAY CENTERLINE PROFILE

NOT TO SCALE



1
C204.1

SITE SECTION VIEW

NOT TO SCALE

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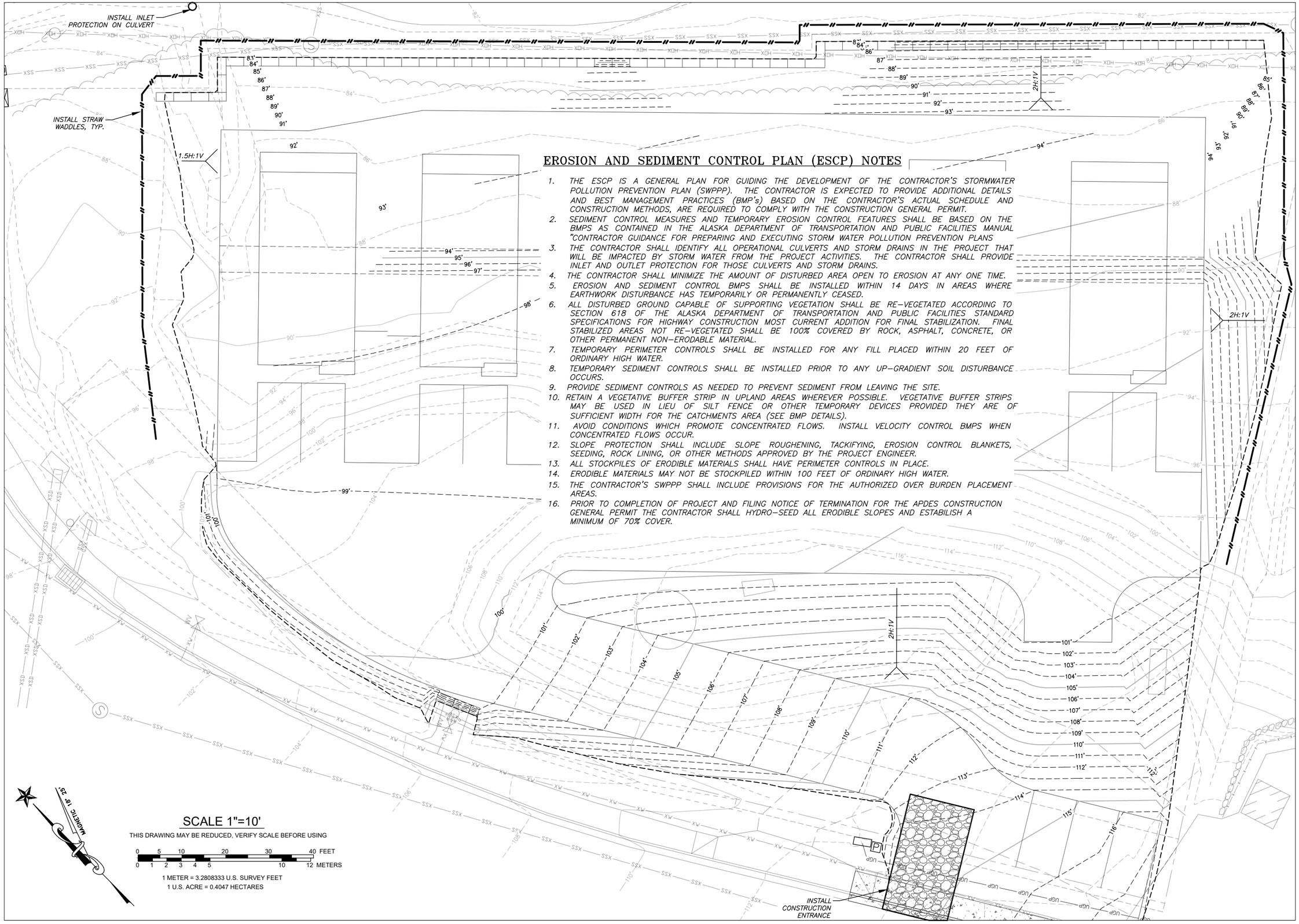
SHEET:

11 *of* **24**



EROSION AND SEDIMENT CONTROL PLAN (ESCP) NOTES

1. THE ESCP IS A GENERAL PLAN FOR GUIDING THE DEVELOPMENT OF THE CONTRACTOR'S STORMWATER POLLUTION PREVENTION PLAN (SWPPP). THE CONTRACTOR IS EXPECTED TO PROVIDE ADDITIONAL DETAILS AND BEST MANAGEMENT PRACTICES (BMP's) BASED ON THE CONTRACTOR'S ACTUAL SCHEDULE AND CONSTRUCTION METHODS, ARE REQUIRED TO COMPLY WITH THE CONSTRUCTION GENERAL PERMIT.
2. SEDIMENT CONTROL MEASURES AND TEMPORARY EROSION CONTROL FEATURES SHALL BE BASED ON THE BMPS AS CONTAINED IN THE ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES MANUAL "CONTRACTOR GUIDANCE FOR PREPARING AND EXECUTING STORM WATER POLLUTION PREVENTION PLANS
3. THE CONTRACTOR SHALL IDENTIFY ALL OPERATIONAL CULVERTS AND STORM DRAINS IN THE PROJECT THAT WILL BE IMPACTED BY STORM WATER FROM THE PROJECT ACTIVITIES. THE CONTRACTOR SHALL PROVIDE INLET AND OUTLET PROTECTION FOR THOSE CULVERTS AND STORM DRAINS.
4. THE CONTRACTOR SHALL MINIMIZE THE AMOUNT OF DISTURBED AREA OPEN TO EROSION AT ANY ONE TIME.
5. EROSION AND SEDIMENT CONTROL BMPS SHALL BE INSTALLED WITHIN 14 DAYS IN AREAS WHERE EARTHWORK DISTURBANCE HAS TEMPORARILY OR PERMANENTLY CEASED.
6. ALL DISTURBED GROUND CAPABLE OF SUPPORTING VEGETATION SHALL BE RE-VEGETATED ACCORDING TO SECTION 618 OF THE ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION MOST CURRENT ADDITION FOR FINAL STABILIZATION. FINAL STABILIZED AREAS NOT RE-VEGETATED SHALL BE 100% COVERED BY ROCK, ASPHALT, CONCRETE, OR OTHER PERMANENT NON-ERODABLE MATERIAL.
7. TEMPORARY PERIMETER CONTROLS SHALL BE INSTALLED FOR ANY FILL PLACED WITHIN 20 FEET OF ORDINARY HIGH WATER.
8. TEMPORARY SEDIMENT CONTROLS SHALL BE INSTALLED PRIOR TO ANY UP-GRADIENT SOIL DISTURBANCE OCCURS.
9. PROVIDE SEDIMENT CONTROLS AS NEEDED TO PREVENT SEDIMENT FROM LEAVING THE SITE.
10. RETAIN A VEGETATIVE BUFFER STRIP IN UPLAND AREAS WHEREVER POSSIBLE. VEGETATIVE BUFFER STRIPS MAY BE USED IN LIEU OF SILT FENCE OR OTHER TEMPORARY DEVICES PROVIDED THEY ARE OF SUFFICIENT WIDTH FOR THE CATCHMENTS AREA (SEE BMP DETAILS).
11. AVOID CONDITIONS WHICH PROMOTE CONCENTRATED FLOWS. INSTALL VELOCITY CONTROL BMPS WHEN CONCENTRATED FLOWS OCCUR.
12. SLOPE PROTECTION SHALL INCLUDE SLOPE ROUGHENING, TACKIFYING, EROSION CONTROL BLANKETS, SEEDING, ROCK LINING, OR OTHER METHODS APPROVED BY THE PROJECT ENGINEER.
13. ALL STOCKPILES OF ERODIBLE MATERIALS SHALL HAVE PERIMETER CONTROLS IN PLACE.
14. ERODIBLE MATERIALS MAY NOT BE STOCKPILED WITHIN 100 FEET OF ORDINARY HIGH WATER.
15. THE CONTRACTOR'S SWPPP SHALL INCLUDE PROVISIONS FOR THE AUTHORIZED OVER BURDEN PLACEMENT AREAS.
16. PRIOR TO COMPLETION OF PROJECT AND FILING NOTICE OF TERMINATION FOR THE APDES CONSTRUCTION GENERAL PERMIT THE CONTRACTOR SHALL HYDRO-SEED ALL ERODIBLE SLOPES AND ESTABILISH A MINIMUM OF 70% COVER.

SCALE 1"=10'

THIS DRAWING MAY BE REDUCED, VERIFY SCALE BEFORE USING

0 5 10 20 30 40 FEET
0 1 2 3 4 5 10 12 METERS

1 METER = 3.2808333 U.S. SURVEY FEET
1 U.S. ACRE = 0.4047 HECTARES

REVISIONS:

THRHA
Single Family Dwelling
PHASE I

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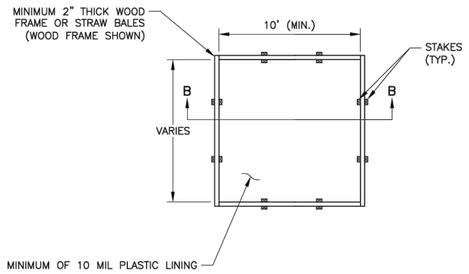
SHEET DESCRIPTION:
EROSION AND SEDIMENT CONTROL PLAN

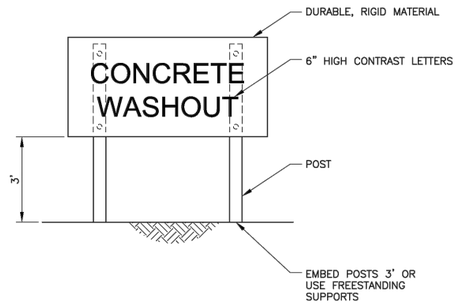
C300

SHEET:
12 of 24

BMP 6.00 – CONCRETE WASHOUT



PLAN



WASHOUT SIGN

NOT TO SCALE

CONCRETE WASHOUT GENERAL NOTES:

MATERIALS

PRE–FABRICATED CONTAINERS: MADE OF STURDY MATERIALS THAT ARE WATER TIGHT.

FABRICATED ON–SITE CONTAINMENT:

1. BARRIER/SIDEWALLS: MAKE SIDEWALLS OF AN ABOVE–GRADE CONTAINMENT AREA FROM EARTHEN BERMS, BARRIER WALLS, WOOD PLANKS, OR OTHER MATERIALS THAT WILL BE STRUCTURALLY SOUND WHEN FILLED WITH WASTE MATERIALS.
2. LINER: IMPERMEABLE PLASTIC SHEETING OF AT LEAST 10 MIL THICKNESS, AND FREE OF HOLES, TEARS, AND OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL.
3. ANCHORS: SECURE THE LINER FOR ABOVE–GRADE CONTAINMENT AREAS AND SIDEWALL MATERIALS OTHER THAN BERMS WITH ANCHORS. USE SANDBAGS, 6 –INCH WIRE STAPLES, AND WOOD OR METAL STAKES AS ANCHORS, BUT NOT LIMITED TO ONLY THEM.

SIGNS: DURABLE, RIGID MATERIAL WITH 6–INCH HIGH CONTRASTING LETTERS, PLACED AT A HEIGHT OF AT LEAST 3 FEET ABOVE GROUND LEVEL.

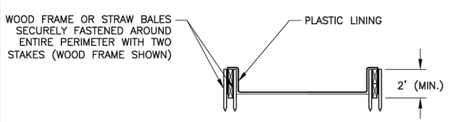
RAIN COVER: SECURE, NON–COLLAPSING, NON–WATER COLLECTING RAIN COVER, REQUIRED PRIOR TO PREDICTED WET WEATHER TO PREVENT ACCUMULATION AND OVERFLOW OF PRECIPITATION.

INSTALLATION

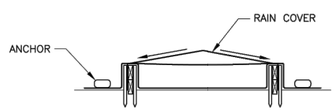
1. INSTALL SIGNS WITHIN 30 FEET OF THE WASHOUT.
2. IF THE WASHOUT IS LOCATED ON UNDEVELOPED PROPERTY OR OFF–PAVEMENT, PROVIDE A STABILIZED CONSTRUCTION EXIT.
3. PLACE CONCRETE WASHOUT CONTAINMENT A MINIMUM OF 50 FEET FROM STORM DRAINS, OPEN DITCHES, OR WATERBODIES, OR PROVIDE SECONDARY CONTAINMENT FOR THE WASHOUT.
4. PROVIDE SUFFICIENT CAPACITY TO HANDLE THE EXPECTED VOLUME OF SOLIDS AND WASH WATER AT 50% MAX CAPACITY AND ALLOW 12 INCHES MINIMUM OF FREEBOARD.
5. PRE–FABRICATED WASHOUT CONTAINERS ARE USUALLY DELIVERED ASSEMBLED. IF ASSEMBLY IS REQUIRED, FOLLOW MANUFACTURER'S INSTRUCTIONS.
6. SELF–INSTALLED CONTAINMENT:
   a. ABOVE–GRADE WASHOUT: CONSTRUCT THE SIDEWALLS TO THE DIMENSIONS SHOWN ON THE DRAWINGS. IF NOT USING AN EARTHEN BERM FOR THIS PURPOSE, ENSURE THAT THE SIDEWALL MATERIAL IS SECURE AND EACH UNIT IS BUTTED TIGHTLY END TO END. LINE THE ENTIRE AREA WITH THE LINING MATERIAL, BRINGING THE SHEETING UP OVER THE SIDEWALLS AND SECURING THE ENDS WITH SANDBAGS, STAPLES OR OTHER APPROPRIATE ANCHORS.
   b. BELOW–GRADE WASHOUT: EXCAVATE A FLAT, SUBSURFACE PIT TO THE DESIRED SIZE AND CAPACITY FOR THE CONTAINMENT AREA. THE RESULTING SIDEWALL SHOULD NOT EXCEED 3:1 SLOPES. PREVENT DAMAGE TO THE LINER BY KEEPING THE BASE OF THE PIT FREE OF ROCKS AND DEBRIS. USE THE EXCAVATED MATERIAL TO CREATE A BERM ALONG THREE SIDES OF THE PIT, LEAVING THE SIDE PROVIDING ACCESS RELATIVELY FLAT. IT IS RECOMMENDED THAT THE BERM BE AT LEAST 1–FOOT HIGHER THAN EXISTING GROUND. LINE THE ENTIRE AREA WITH THE LINING MATERIAL, BRINGING THE SHEETING UP OVER THE SIDEWALLS AND BERM, AND SECURING THE ENDS WITH SANDBAGS OR OTHER APPROPRIATE ANCHORS.

INSPECTION

1. INSPECT AND VERIFY THAT CONCRETE WASHOUT BMPS ARE IN PLACE PRIOR TO THE COMMENCEMENT OF CONCRETE WORK.
2. DETERMINE IF THE CONCRETE WASHOUT IS FILLED TO 50 PERCENT CAPACITY.
3. FOR SELF–INSTALLED CONTAINMENT:
   a. INSPECT THE PLASTIC LINER TO ENSURE IT IS SECURELY ANCHORED AND INTACT.
   b. INSPECT THE SIDEWALLS FOR LEAKS. ENSURE THE CONSTRUCTION DOESN'T DAMAGE THE SIDEWALLS.
4. FOR PRE–FABRICATED CONTAINMENT, INSPECT THE UNIT FOR LEAKS AND POTENTIAL DAMAGE.
5. CHECK TO ENSURE THAT EACH WASHOUT SIGN IS STILL SECURE AND VISIBLE.
6. IF THERE IS EVIDENCE THAT WASHOUTS ARE OCCURRING IN LOCATIONS OTHER THAN THE DESIGNATED WASHOUT: IMPROVE EXISTING SIGNAGE, INSTALL ADDITIONAL SIGNAGE, INCREASE COMMUNICATION WITH CONCRETE TRUCK DRIVERS, AND PROVIDE CONCRETE TRUCK DRIVERS WITH MAPS OF WASHOUT LOCATIONS WITH RESPECT TO POUR LOCATIONS.



SECTION B–B



MAINTENANCE

1. CLEAN EXISTING WASHOUTS BEFORE THE WASHOUT IS 50 PERCENT FULL. SOLIDIFY WITH BAGGED GROUT, VACUUM AND DISPOSE OF LIQUIDS IN AN APPROVED MANNER, OR ALLOW FOR EVAPORATION (CHECK WITH THE LOCAL SANITARY SEWER AUTHORITY TO DETERMINE IF THERE ARE SPECIAL DISPOSAL REQUIREMENTS FOR CONCRETE WASH WATER).
2. IF NECESSARY, PROVIDE AN ALTERNATE WASHOUT DURING EXISTING WASHOUT CLEANING.
3. RELINE SELF–INSTALLED CONTAINERS AFTER EACH CLEANING, BECAUSE EQUIPMENT CAN DAMAGE THE LINER. BEFORE RELINING, INSPECT THE CONTAINMENT STRUCTURE FOR SIGNS OF WEAKENING OR DAMAGE AND MAKE ANY NECESSARY REPAIRS. THEN LINE THE STRUCTURE WITH NEW PLASTIC SHEETING, CHECKING THAT IT IS FREE OF HOLES, TEARS, AND OTHER DAMAGE.
4. REPAIR DAMAGED WASHOUTS BEFORE THE NEXT CONCRETE POUR. IF NECESSARY, PROVIDE NEW WASHOUTS UNTIL THE EXISTING WASHOUTS ARE OPERATIONAL.
5. CONTAIN ANY SPILL OR DISCHARGE OF CONCRETE WASTE MATERIALS.
6. REPLACE OR INSTALL NEW SIGNAGE AS NEEDED.

REMOVAL

1. AN OPERATIONAL CONCRETE WASHOUT SHOULD REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT (OR PHASE OF THE PROJECT) IS POURED. WHEN THE CONCRETE WASHOUT IS NO LONGER NEEDED, THE LIQUID MUST BE EVAPORATED OR VACUUMED FOR DISPOSAL AND THE HARDENED SOLIDS MUST BE BROKEN UP, REMOVED, AND PROPERLY DISPOSED OF. DISPOSAL LOCATION TO BE APPROVED BY ENGINEER.
2. REMOVE FROM THE SITE PRE–FABRICATED WASHOUTS AND MATERIALS USED TO CONSTRUCT ABOVE–GRADE CONTAINMENT AREA AND PROPERLY DISPOSE OF THEM.
3. BACKFILL AND STABILIZE HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCE CAUSED BY THE CREATION OR REMOVAL OF THE WASHOUT WITH AN APPROVED BMP.

REVISIONS:

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Single Family Dwelling
PHASE I

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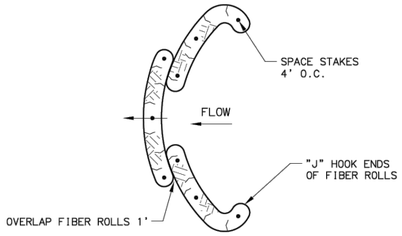
SHEET DESCRIPTION:
ESCP DETAILS

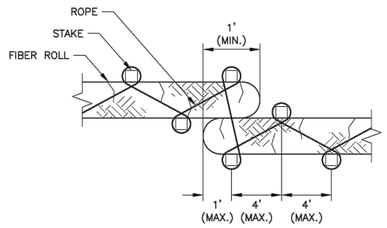
C301

SHEET:
13 of 24

BMP 10.00 – FIBER ROLLS



PLAN



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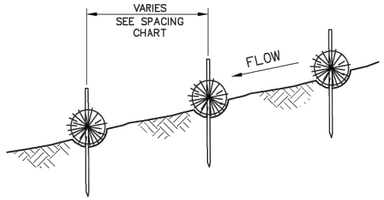

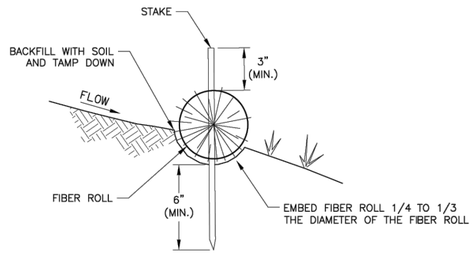

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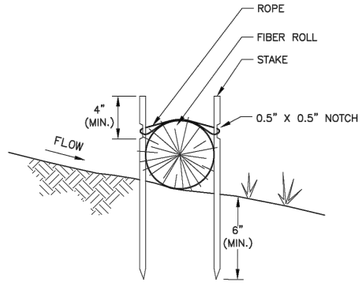

SECTION

TYPICAL SPACING CHART	
SLOPE	SPACING (FEET)
1:1	10
2:1	20
3:1	30

TRENCHED INSTALLATION
NOT TO SCALE

TRENCHED INSTALLATION NOTES:
1. DIG TRENCHES AND PLACE FIBER ROLLS IN THE TRENCHES.
2. CURVE BACK THE UPSLOPE END OF THE FIBER ROLL IN A "J" HOOK.
3. SPREAD EXCAVATED MATERIAL EVENLY ALONG THE UPHILL SLOPE AND COMPACT USING HAND TAMPING OR OTHER METHODS.
4. STAKE THE ROLL EVERY 4 FEET AND WITHIN 1–FOOT OF THE ENDS. LEAVE 3 INCHES OF THE STAKE ABOVE THE ROLL.
5. DRIVE STAKES THROUGH THE MIDDLE OF THE FIBER ROLL.
6. IF REQUIRED, PILOT HOLES FOR THE STAKES MAY BE CREATED BY DRIVING A STRAIGHT BAR THROUGH THE ROLL.

ROPE INSTALLATION
NOT TO SCALE

SLOPE INSTALLATION
NOT TO SCALE

SLOPE INSTALLATION NOTES:
1. INSTALL ON A SLOPE TO SHORTEN THE SLOPE LENGTH.
2. START INSTALLATION DOWNSLOPE.
3. SPACE ROLLS ACCORDING TO THE SPACING CHART AND DECREASE SPACING ON MORE ERODIBLE SOILS AND INCREASE SPACING ON ROCKY SOILS.

FIBER ROLL GENERAL NOTES:

MATERIALS

FIBER ROLLS: THE NETTING MAY BE UV–DEGRADABLE POLYPROPYLENE, BIODEGRADABLE BURLAP, JUTE OR COIR. THE FILLINGS MAY BE STRAW, FLAX, RICE, OR COCONUT–FIBER. MINIMUM DIAMETER OF 6 INCHES.

STAKES: 1–INCH BY 1–INCH WOODEN STAKES 24 INCHES LONG (18 INCHES IF SOILS ARE ROCKY) OR ⅜–INCH REBAR WITH SAFETY CAPS OR ¾–INCH TO 1 ½–INCH DIAMETER LIVE WILLOW CUTTINGS. IF USING LIVE WILLOW CUTTINGS, DO NOT INSTALL ROPE.

INSTALLATION
1. PLACE FIBER ROLLS PERPENDICULAR TO FLOW AND PARALLEL TO THE SLOPE CONTOUR.
2. AT THE END OF THE ROLL, TURN THE END UPSLOPE TO PREVENT RUN–OFF FROM GOING AROUND THE ROLL END.

INSPECTION
1. ENSURE THAT THE ROLLS ARE IN CONTACT WITH THE SOIL AND THOROUGHLY ENTRENCHED.
2. LOOK FOR SCOURING UNDERNEATH THE ROLLS.
3. LOOK FOR SPLIT, TORN, UNRAVELING, OR SLUMPING FIBER ROLLS.
4. ENSURE EQUIPMENT HAS NOT DRIVEN OVER THE INSTALLED FIBER ROLLS.

MAINTENANCE
1. REPLACE DAMAGED SECTIONS OF FIBER ROLL.
2. REMOVE ACCUMULATED SEDIMENT UPSLOPE OF THE ROLL BEFORE IT REACHES ONE–HALF THE DISTANCE BETWEEN THE TOP OF THE FIBER ROLL AND THE GROUND SURFACE. WHEN PROTECTING A WATER BODY OR STORM DRAIN INLET, REMOVE ACCUMULATED SEDIMENT UPSLPE OF THE ROLL WHEN IT REACHES ONE–THIRD OF THE DISTANCE BETWEEN THE TOP OF THE FIEBER ROLL AND THE GROUND SURFACE.

REMOVAL
1. REMOVE FIBER ROLLS WHEN THE AREA IS STABILIZED OR WHEN THEY ARE NO LONGER NECESSARY.
2. COLLECT AND DISPOSE OF THE ACCUMULATED SEDIMENT.
3. REMOVE AND DISPOSE OF FIBER ROLLS.
4. FILL THE TRENCHES AND STAKE HOLES TO BLEND WITH THE ADJACENT GROUND AND REVEGETATE AS NECESSARY.

RETENTION
1. LEAVE FIBER ROLLS IN PLACE WHEN THE AREA IS STABILIZED OR WHEN THEY ARE NOT NECESSARY.
2. COLLECT AND DISPOSE OF THE ACCUMULATED SEDIMENT.
3. REMOVE AND DISPOSE OF THE NETTING, STAKES, AND ROPE.

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PROJECT #:222321.10

R&M ENGINEERING-KETCHIKAN, INC.
7180 REVILLA ROAD, SUITE 300
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AELC 576

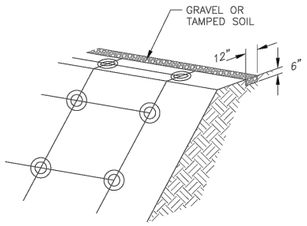
STATE OF ALASKA
49th
JOEL P. TEUNE
121948
8/31/2023
REGISTERED PROFESSIONAL ENGINEER

SHEET DESCRIPTION:
ESCP DETAILS

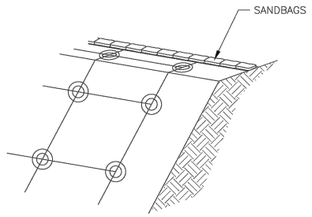
C302

SHEET:
14 of 24

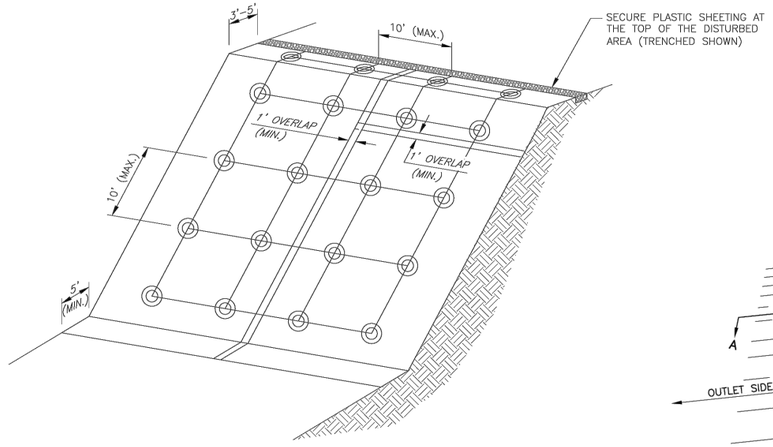
BMP 12.00 – PLASTIC COVERING



TRENCHED DETAIL



WEIGHTED DETAIL



PERSPECTIVE

PLASTIC COVERING NOTES:

MATERIALS

PLASTIC COVERING: PLASTIC COVERING SHALL MEET THE REQUIREMENTS OF ASTM D 4397 FOR POLYETHYLENE SHEETING HAVING A MINIMUM THICKNESS OF 6 MIL.

FASTENERS OR WEIGHTS: FASTENERS OR WEIGHTING OBJECTS, SUCH AS SANDBAGS, TIRES, OR OTHER SIMILAR MATERIALS.

INSTALLATION

1. INSTALL PLASTIC PARALLEL WITH THE SLOPE, NOT PERPENDICULAR. PLASTIC MAY BE INSTALLED PERPENDICULAR TO A SLOPE IF THE SLOPE LENGTH IS LESS THAN 10 FEET. OVERLAP UPHILL SHEET OVER DOWNHILL SHEET A MINIMUM OF 1–FOOT.
2. SECURE THE PLASTIC SHEETING AT THE TOP OF THE SLOPE BY KEYING INTO A TRENCH OR WEIGHT WITH A CONTINUOUS LINE OF SANDBAGS SO THAT NO WATER CAN FLOW UNDERNEATH.
3. INSTALL WEIGHTS ON ROPES OR FASTENERS IN A 10–FOOT MAXIMUM GRID, TO SECURE THE PLASTIC TIGHTLY AGAINST THE SOIL.
4. INSPECT WEIGHTS TO MAKE SURE THEY ARE STILL IN PLACE, REPLACE AS NEEDED OR ADD ADDITIONAL WEIGHT IF THERE IS NOT A SUFFICIENT AMOUNT ON THE SLOPE.
5. TAPE, FASTEN, OR WEIGHT SEAMS ALONG THEIR ENTIRE LENGTH WITH A MINIMUM OF 1–FOOT OF OVERLAP AT ALL SEAMS.
6. SECURE EDGES TO PREVENT WATER FROM ERODING GROUND UNDERNEATH AND WIND FROM LIFTING THE COVER.

INSPECTION

1. INSPECT SHEETING AFTER INSTALLATION AND ACCORDING TO ESTABLISHED SCHEDULES.
2. CHECK FOR EROSION, UNDERMINING, ANCHORAGE (KEYING AND EMBEDDING) FAILURE, TORN SHEETS, AND DETERIORATION.

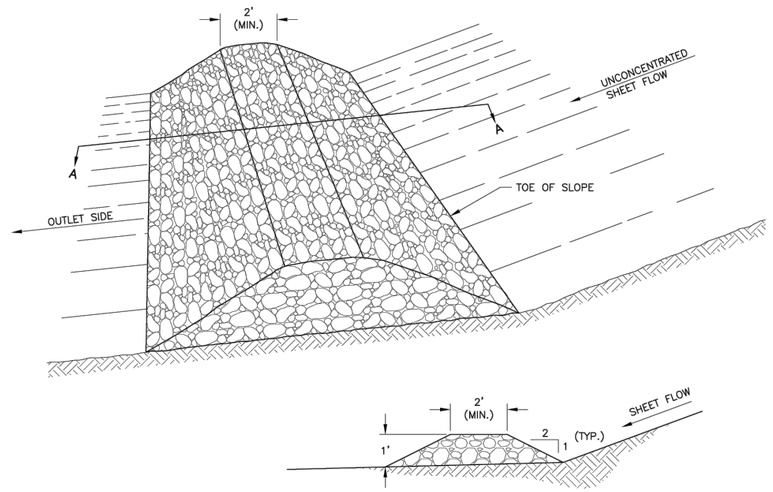
MAINTENANCE

1. REPAIR FAILURES AS SOON AS PRACTICABLE.
2. IF WASHOUT OR BREAKAGES OCCUR, REPAIR DAMAGE TO THE SLOPE AND REINSTALL THE MATERIAL AS SOON AS PRACTICABLE.

REMOVAL

1. REMOVE PLASTIC SHEETING AND WEIGHTS PRIOR TO STABILIZING THE AREA OR WHEN CONSTRUCTION ACTIVITY IS COMPLETED.
2. AFTER REMOVAL, FILL TRENCHES TO BLEND WITH THE ADJACENT GROUND AND REVEGETATE, AS NECESSARY.

BMP 16.00 – ROCK FILTER BERM



SECTION A–A
NOT TO SCALE

ROCK FILTER BERM NOTES:

MATERIALS

ROCK: WELL GRADED 3–INCH MINUS THAT WILL NOT RELEASE SEDIMENT AND HAS LESS THAN 5 PERCENT PASSING THE #200 SIEVE.

INSTALLATION

1. PLACE THE ROCK BERM AS SHOWN ON THE PLANS WITHIN 24 HOURS AFTER GRUBBING.

INSPECTION

1. OBSERVE FOR BERM CONTINUITY INCLUDING COLLAPSE, DAMAGE, COMPROMISED INTEGRITY, OR OTHER FUNCTIONAL INADEQUACIES.
2. LOOK FOR EVIDENCE OF SEDIMENT FLOW OR EROSION ON THE DOWNHILL EDGE OF THE BERM.
3. NOTE DEPTH OF SEDIMENT BEHIND BERM TO SEE IF SEDIMENT IS CLOSE TO ONE–HALF THE BERM HEIGHT.
4. LOOK TO SEE IF THE BERM IS FILTERING OR WHETHER IT HAS BECOME CLOGGED OR OTHERWISE NON–FUNCTIONING.

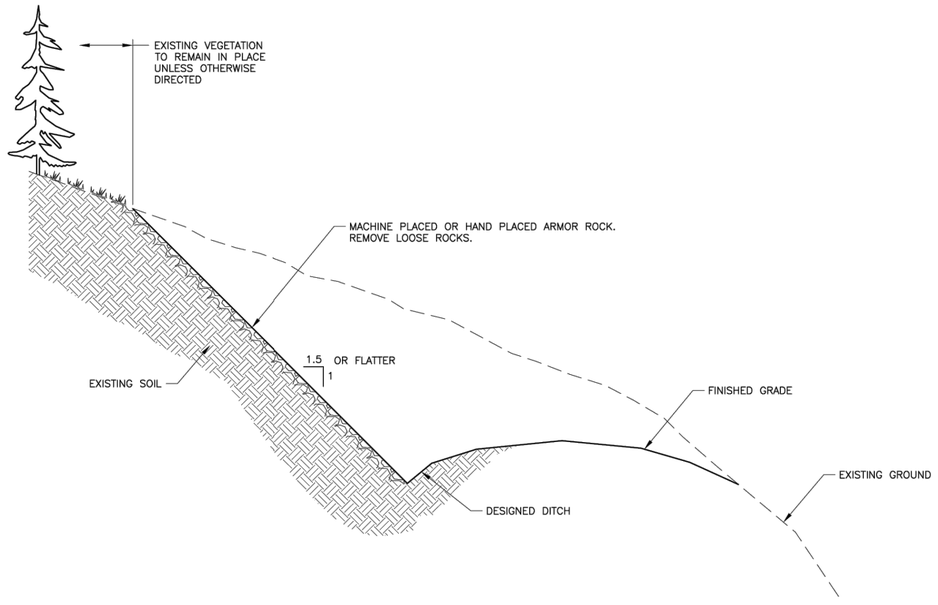
MAINTENANCE

1. REPAIR OR RESTORE ANY BERM DISCONTINUITIES, DAMAGE, OR POINTS OF FAILURE.
2. REMOVE ACCUMULATED SEDIMENT BEFORE IT REACHES ONE–HALF OF THE BERM HEIGHT OR ONE–THIRD OF THE AVAILABLE STORAGE IF PROTECTING A WATER BODY OR STORM DRAIN INLET.

REMOVAL

1. INCORPORATE THE ROCK BERM INTO THE SLOPE, UNLESS DIRECTED OTHERWISE. STABILIZE BARE GROUND AND THE FILL SLOPE.

BMP 17.00 – ROCK SLOPE ARMOR



ROCK SLOPE ARMOR NOTES:

MATERIALS

ROCK: COBBLE, GRAVEL, CRUSHED GRAVEL, CRUSHED ROCK, OR ANY COMBINATION OF THESE, MEETING SPECIFICATIONS AT 610–2.01 (DITCH LINING), 611–2.01 (RIPRAP), OR 703–2.10 (POROUS BACKFILL). USE ANGULAR ROCK ON SLOPES STEEPER THAN 2:1.

INSTALLATION

1. PREPARE THE SLOPE AS DESCRIBED IN THE CONTRACT OR AS DIRECTED BY THE ENGINEER.
2. MINIMIZE CONCENTRATED RUN–ON FROM CROSS–GRADIENT AND UP–GRADIENT SOURCES BY SITE GRADING AND/OR DIRECTING OR DIVERTING RUN–ON OR RUN–OFF AWAY FROM THE SLOPE FACE.
3. IF SPECIFIED ON THE PLANS OR DIRECTED BY THE ENGINEER, INSTALL THE FILTER FABRIC OR FILTER LAYER. AFTER CLEARING DEBRIS FROM SLOPE INSTALL FILTER FABRIC ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
4. INSTALL THE ROCK STARTING AT THE BOTTOM OF THE SLOPE AND PROCEEDING IN HORIZONTAL LIFTS UPWARDS.
5. PLACE STONES TO THE THICKNESS, HEIGHT, AND LENGTH SHOWN ON THE PLANS. DUMP SMALL ROCKS AND SPREAD BY BULLDOZER OR OTHER SUITABLE EQUIPMENT. DURING SPREADING, DO NOT CRACK THE ROCK.

INSPECTION

1. INSPECT FOR DAMAGE TO THE ROCK ARMOR, INCLUDING DISPLACED STONES, SLUMPING, AND EROSION AT EDGES, ESPECIALLY DOWNSLOPE.

MAINTENANCE

1. REPAIR DAMAGED ROCK ARMOR SLOPE OR EDGES AS SOON AS PRACTICABLE AND BEFORE FURTHER DAMAGE CAN OCCUR.

REVISIONS:

THRHA
Single Family Dwelling
PHASE I

STATUS:
CONSTRUCTION DOCUMENTS

DRAWN BY: JPT
CHECKED BY: TSS
DATE: 8/31/2023
PROJECT #: 222321.10

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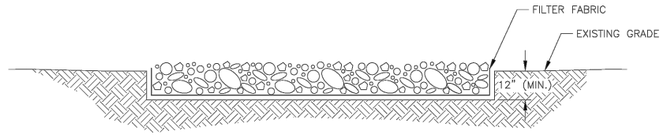
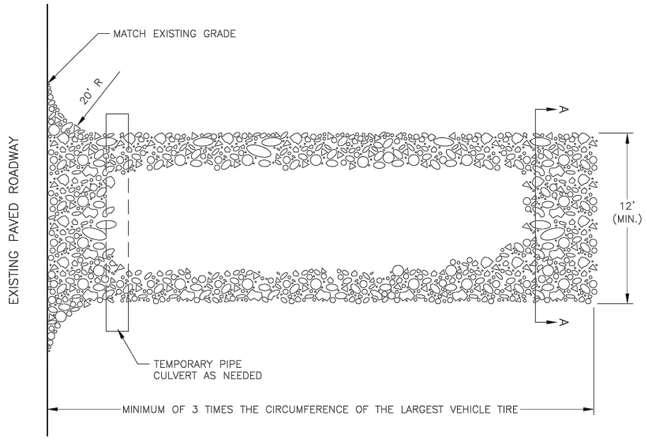
SHEET:
15 of 24

BMP 23.00 – STABILIZED ROCK CONSTRUCTION EXIT



SECTION A–A



PLAN

STABILIZED CONSTRUCTION EXIT GENERAL NOTES:
INSTALLATION

1. INSTALL STABILIZED CONSTRUCTION EXIT PRIOR TO EARTH WORK.
2. CLEAR THE EXIT AREA OF ALL VEGETATION, ROOTS, AND OTHER MATERIAL.
3. PROVIDE DRAINAGE TO CARRY WATER TO A SEDIMENT TRAP, VEGETATIVE SEDIMENT FILTER OR OTHER PROTECTED OUTLET.
4. EXCAVATE AND GRADE THE AREA FOR ROCK PLACEMENT.
5. INSTALL SIGNS, FENCING OR BARRICADES TO CHANNEL OUTGOING TRAFFIC TO THE STABILIZED CONSTRUCTION EXIT.

INSPECTION

1. INSPECT STABILIZED CONSTRUCTION EXIT FOR SEDIMENT ACCUMULATION AND MATERIAL DISPLACEMENT.
2. INSPECT ROADWAY FOR SEDIMENT TRACK–OUT.
3. INSPECT DITCHES TO ENSURE NO SEDIMENT ACCUMULATION.

MAINTENANCE

1. MAINTAIN EACH EXIT IN A CONDITION THAT WILL PREVENT TRACKING OF MUD OR SEDIMENT ONTO PUBLIC RIGHT–OF–WAY.
2. REPAIR AND/OR CLEAN OUT ANY STRUCTURES USED TO TRAP SEDIMENT.
3. REMOVE ALL MUD AND SEDIMENT DEPOSITED ON PAVED ROADWAYS.
4. ADD MORE SIGNS, FENCING OR BARRICADES WHEN VEHICLES ARE EXITING THE PROJECT WITHOUT USING THE STABILIZED CONSTRUCTION EXIT. INSTALL ADDITIONAL STABILIZED CONSTRUCTION EXITS IF NEEDED, YET USE SIGNS AND BARRICADES TO MINIMIZE THE NUIMBER OF STABILIZED CONSTRUCTION EXITS.
5. PREVENT TRACK–OUT BY USING ADDITIONAL BMPs, SUCH AS A TIRE WASH.

REMOVAL

1. REMOVE THE STABILIZED CONSTRUCTION EXIT AND ANY SEDIMENT TRAPPING STRUCTURES AFTER THEY ARE NO LONGER NEEDED, OR WITH FINAL SITE STABILIZATION.
2. REGRADE AND PERMANENTLY STABILIZE THE REMAINING DISTURBED AREAS ACCORDING TO THE PLANS.

ROCK CONSTRUCTION EXIT NOTES:
MATERIALS

ROCK: 2– TO 3–INCH COARSE AGGREGATE OR 3– TO 6–INCH QUARRY SPALL OR ANGULAR ROCK, WHICHEVER IS APPROPRIATE TO THE PROJECT FLEET.

INSTALLATION

1. PLACE THE FILTER FABRIC AND ROCK TO THE SPECIFIC GRADE SHOWN ON THE PLANS.

MAINTENANCE

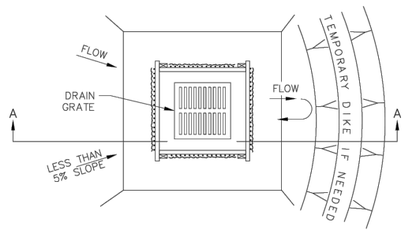
1. REMOVE ACCUMULATED SEDIMENT OR MUD.
2. REPLACE ROCK MATERIAL WHEN SURFACE VOIDS ARE FILLED WITH SEDIMENT. REPLACE FABRIC AS NEEDED.
3. TOP DRESS WITH 2 TO 3 INCHES OF COARSE AGGREGATE OR 3– TO 6–INCH COARSE ROCK WHEN THE PAD BECOMES LADEN WITH SEDIMENT.

INSPECTION

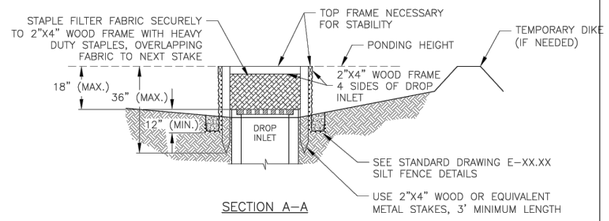
1. INSPECT FOR ROCK THAT HAS BEEN DISPLACED FROM THE PAD.

ROCK CONSTRUCTION EXIT
NOT TO SCALE

BMP 28.00 – FILTER FABRIC FOR AREA INLETS



PLAN



SECTION A–A

FILTER FABRIC FOR AREA INLETS
NOT TO SCALE

AREA INLET FILTER FABRIC NOTES:
MATERIALS

PREFABRICATED UNITS: UPON APPROVAL BY THE ENGINEER, USE IN PLACE OF THE DESIGN SHOWN ON THIS DRAWING.

FILTER FABRIC: (SILT FENCE) SHALL COMPLY WITH SECTION 729–2.04 SILT FENCE.

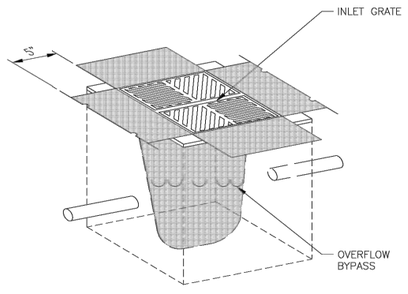
INSTALLATION

1. IF PREFABRICATED BARRIERS ARE USED, INSTALL AS SPECIFIED BY THE VENDOR OR MANUFACTURER.
2. PLACE A STAKE AT EACH CORNER OF THE INLET OR IN A CIRCULAR PATTERN AROUND THE INLET NO MORE THAN 3 FEET APART. DRIVE STAKES INTO THE GROUND A MINIMUM OF 12 INCHES.
3. ENSURE STABILITY BY BRACING AT THE TOP.
4. INSTALL FILTER FABRIC (SILT FENCE) AS SHOWN ON DRAWING BMP–20.00 SILT FENCE.

INSPECTION, MAINTENANCE, AND REMOVAL

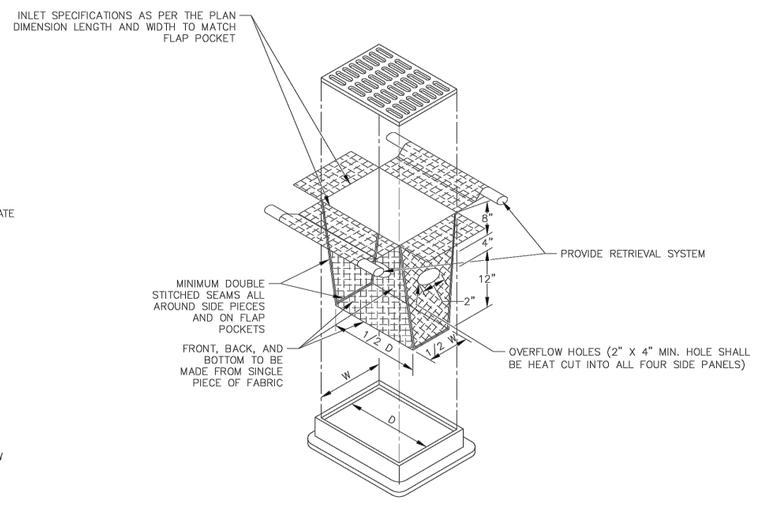
1. SEE STORM DRAIN INLET SEDIMENT PROTECTION GENERAL NOTES ON BMP–25.00 [STORM DRAIN INLET SEDIMENT PROTECTION (NOTES & AREA INLET FIBER ROLL OR GRAVEL/SAND BAG BERM)] NOTES FOR INSPECTION, MAINTENENACE, AND REMOVAL.

BMP 29.00 – SEDIMENT CONTROL INLET HAT FOR AREA DRAINS OR CURB INLETS



PERSPECTIVE

SEDIMENT CONTROL INLET HAT
FOR AREA DRAINS OR CURB INLETS
NOT TO SCALE



PERSPECTIVE

FILTER BAG INSERT
FOR AREA DRAINS OR CURB INLETS
NOT TO SCALE

AREA DRAINS OR CURB INLET NOTES:
MATERIALS

PREFABRICATED UNITS: UPON APPROVAL BY THE ENGINEER, USE IN PLACE OF THE DESIGN SHOWN ON THIS DRAWING.

SEDIMENT CONTROL INLET HATS: SHALL BE A POLYETHYLENE HAT–LIKE STRUCTURE COVERING THE INLET WITH SMALL WEEP HOLES ON THE SIDE PROVIDING A FILTERING FUNCTION FOR THE STORMWATER RUNOFF, AND A LARGE OPENING ABOVE THE WEEP HOLES FOR EMERGENCY OVERFLOW.

FILTER BAG INSERTS: SHALL CONSIST OF A REPLACEABLE FILTER BAG REINFORCED WITH AN OUTER POLYESTER MESH FABRIC.

1. THE FILTER BAG SHALL BE SUSPENDED FROM A GALVANIZED STEEL RING, REBAR OR STEEL RODS, OR FRAME THAT FITS WITHIN A GRATE UTILIZING A STAINLESS STEEL BAND AND LOCKING CLAMP.
2. CONSTRUCT THE FILTER BAG THAT IS SUSPENDED FROM A FRAME OF A POLYPROPYLENE FILTER GEOTEXTILE FABRIC, THAT MEETS THE FOLLOWING MINIMUM REQUIREMENTS:

	ASTM METHOD	VALUE	UNITS
UNIT WEIGHT	––	4	OUNCE/SQ YD
FLOW RATE	––	145	GALLONS/MINUTE/SQ FT
PERMITTIVITY	D4491	0.5	PER SECOND
GRAB TENSILE STRENGTH	D4632	200	POUNDS
PUNCTURE STRENGTH	D6241	80	POUNDS
TEAR STRENGH	D4533	50	POUNDS
DEBRIS CAPACITY	––	2	CUBIC FT

3. DOUBLE STITCH ALL EDGES AND SEAMS.
4. THE FILTER BAG INSERT SHALL HAVE OVAL, EDGE–HEAT–SEALED OVERFLOW HOLES, MINIMUM 2 INCHES X 4 INCHES, CUT INTO ALL FOUR PANEL SIDES.
5. PROVIDE BUILT–IN OVERFLOW BYPASS.
6. THE INLET STRUCTURE'S GRATE OVERFLOW CAPACITY IS AT A MINIMUM EQUAL TO THE DESIGN FLOW CAPACITY.
7. PROVIDE A RETRIEVAL SYSTEM, SUCH AS FLAPS, HANDLES, OR CORDS, TO ALLOW REMOVAL OF THE BELOW–INLET GRATE BARRIER WITHOUT SPILLING THE COLLECTED MATERIAL.

STORM DRAIN INLET SEDIMENT PROTECTION GENERAL NOTES
INSTALLATION

1. IF PREFABRICATED BARRIERS ARE USED, INSTALL AS SPECIFIED BY THE VENDOR OR MANUFACTURER.

INSPECTION

1. CHECK FOR SEDIMENT DEPTH. CLEANING IS REQUIRED WHEN SEDIMENT HAS ACCUMULATED TO ONE–THIRD THE DESIGN DEPTH (OR LESS WHEN SPECIFIED BY THE MANUFACTURER OF PREFABRICATED BARRIERS).
2. CHECK FOR UNDERMINING OR BYPASSING, SUCH AS EVIDENCE THAT SEDIMENT IS ENTERING THE INLET OR THAT RUN–OFF IS BYPASSING THE BARRIER AND ENTERING THE INLET UNTREATED.

MAINTENANCE

1. IF PREFABRICATED BARRIERS ARE USED, MAINTAIN THEM AS SPECIFIED BY THE VENDOR OR MANUFACTURER.
2. CORRECT UNDERMINING OR BYPASSING FAILURES.
3. REMOVE ACCUMULATED SEDIMENT BEFORE IT REACHES ONE–THIRD OF THE AVAILABLE STORAGE OF THE SEDIMENT PROTECTION DEVICE OR LESS WHEN SPECIFIED BY THE MANUFACTURER.
4. REMOVE AND DISPOSE OF ANY ROCK OR DEBRIS THAT HAS ACCUMULATED BEHIND THE SEDIMENT BARRIER TO PREVENT FURTHER CLOGGING.
5. REPLACE FRAYED OR TORN FABRIC OR MATERIALS AND REPAIR ANY STRUCTURAL DAMAGE AS SOON AS PRACTICABLE.

REMOVAL

1. LEAVE INLET SEDIMENT PROTECTION DEVICES IN PLACE AND OPERATIONAL UNTIL THE DRAINAGE AREA IS PERMANENTLY STABILIZED.
2. REMOVE AND DISPOSE OF TRAPPED OR REMAINING SEDIMENT.
3. STABILIZE DISTURBED SOIL AREAS RESULTING FROM REMOVAL OF BARRIERS OR SEDIMENT.

REVISIONS:

THRHA
Single Family Dwelling
PHASE I

STATUS:
CONSTRUCTION DOCUMENTS

DRAWN BY: JPT
CHECKED BY: TSS
DATE: 8/31/2023
PROJECT #: 222321.10

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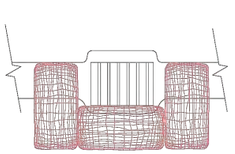
SHEET DESCRIPTION:
ESCP DETAILS

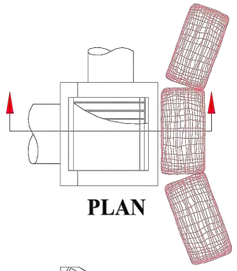
C304

SHEET:
16 of 24

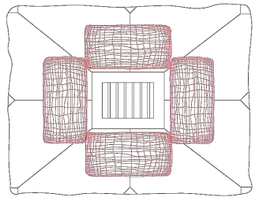
BMP A1 – CURB INLET CATCH BASIN BIO BAG INLET PROTECTION



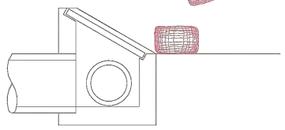
CATCH BASIN



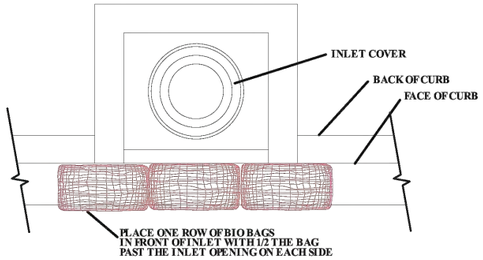
PLAN



AREA DRAIN



DITCH INLET



STORM DRAIN INLET SEDIMENT PROTECTION GENERAL NOTES

INSTALLATION

1. IF PREFABRICATED BARRIERS ARE USED, INSTALL AS SPECIFIED BY THE VENDOR OR MANUFACTURER.

INSPECTION

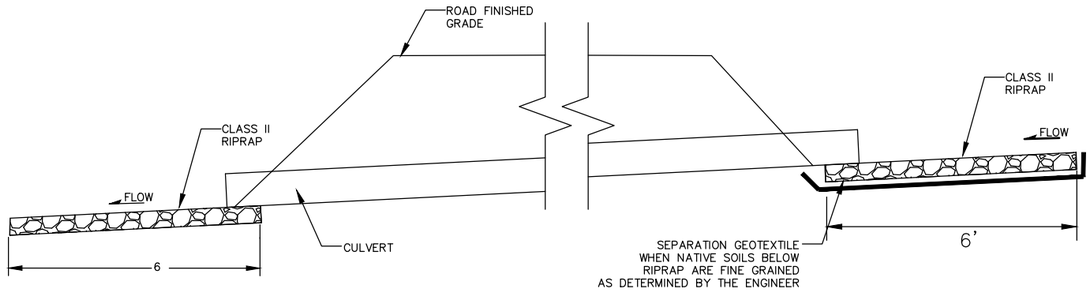
1. CHECK FOR SEDIMENT DEPTH. CLEANING IS REQUIRED WHEN SEDIMENT HAS ACCUMULATED TO ONE–THIRD THE DESIGN DEPTH (OR LESS WHEN SPECIFIED BY THE MANUFACTURER OF PREFABRICATED BARRIERS).
2. CHECK FOR UNDERMINING OR BYPASSING, SUCH AS EVIDENCE THAT SEDIMENT IS ENTERING THE INLET OR THAT RUN–OFF IS BYPASSING THE BARRIER AND ENTERING THE INLET UNTREATED.

MAINTENANCE

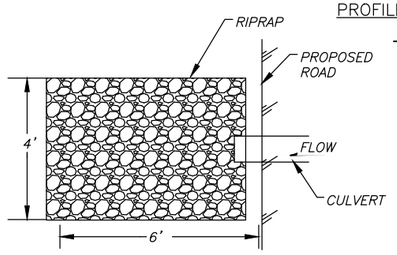
1. IF PREFABRICATED BARRIERS ARE USED, MAINTAIN THEM AS SPECIFIED BY THE VENDOR OR MANUFACTURER.
2. CORRECT UNDERMINING OR BYPASSING FAILURES.
3. REMOVE ACCUMULATED SEDIMENT BEFORE IT REACHES ONE–THIRD OF THE AVAILABLE STORAGE OF THE SEDIMENT PROTECTION DEVICE OR LESS WHEN SPECIFIED BY THE MANUFACTURER.
4. REMOVE AND DISPOSE OF ANY ROCK OR DEBRIS THAT HAS ACCUMULATED BEHIND THE SEDIMENT BARRIER TO PREVENT FURTHER CLOGGING.
5. REPLACE FRAYED OR TORN FABRIC OR MATERIALS AND REPAIR ANY STRUCTURAL DAMAGE AS SOON AS PRACTICABLE.

REMOVAL

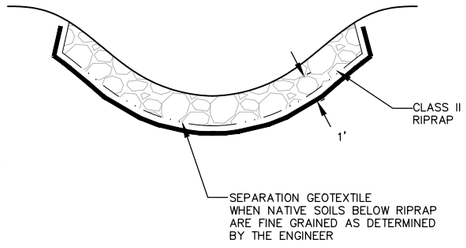
1. LEAVE INLET SEDIMENT PROTECTION DEVICES IN PLACE AND OPERATIONAL UNTIL THE DRAINAGE AREA IS PERMANENTLY STABILIZED.
2. REMOVE AND DISPOSE OF TRAPPED OR REMAINING SEDIMENT.
3. STABILIZE DISTURBED SOIL AREAS RESULTING FROM REMOVAL OF BARRIERS OR SEDIMENT.



PROFILE



PLAN



SECTION

BMP A2 – CULVERT INLET/OUTLET PROTECTION

REVISIONS:

THRHA
Single Family Dwelling
PHASE I

STATUS:
CONSTRUCTION DOCUMENTS

DRAWN BY: JPT
CHECKED BY: TSS
DATE: 8/31/2023
PROJECT #: 222321.10

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SHEET DESCRIPTION:
ESCP DETAILS

C305

SHEET:
17 *of* **24**

Winter Construction

Winter construction activities must utilize control measures that will minimize erosion or sediment runoff during spring thaw. CGP coverage is unnecessary for constructing ice roads or placing sand or gravel on frozen tundra with no excavation or potential to pollute waters of the U.S.

Winter Clearing

Cutting trees and brush on frozen ground must be done in accordance with the USFWS Migratory Bird Treaty Act. That act describes a "migratory bird window," which is a period of time when birds are nesting. Clearing is not recommended without USFWS-authorized avoidance measures. The vegetative mat must be left undisturbed.

Use the DOT&PF environmental document as a source of information for DOT&PF-supplied areas to avoid any duplication of effort. In the case of contractor-supplied support areas or contractor expansion of DOT&PF supplied areas, notify the project engineer and consult with the USFWS.

If clearing is anticipated after spring thaw, or current temperatures are causing snow melt, then CGP coverage is required. A SWPPP must be developed and NOI must be filed prior to clearing.

2.2.7 Discharging to an Impaired Water

The CGP requires turbidity sampling for projects that disturb 20 acres or more at one time and discharge into a (Category 5 waterbody). Projects meeting these

an must be implemented by an AK-CESCL
d person "knowledgeable in the principles and
es of water quality monitoring."

nitoring data collected must be submitted to
an annual report. If a discharge exceeding the
uality standard for turbidity is discovered,
ive action must be implemented within seven
the date of discharge. A Corrective Action
must be sent to DEC no later than 14 days after
ng the monitoring results.

Certification and Notification

form to DEC. For a copy of the form, complete instructions on filing and to file the NOI online, go to http://www.dec.state.ak.us/water/wnpspc/stormwater/APDESeNOI.html.

The eNOI form requires the following information:

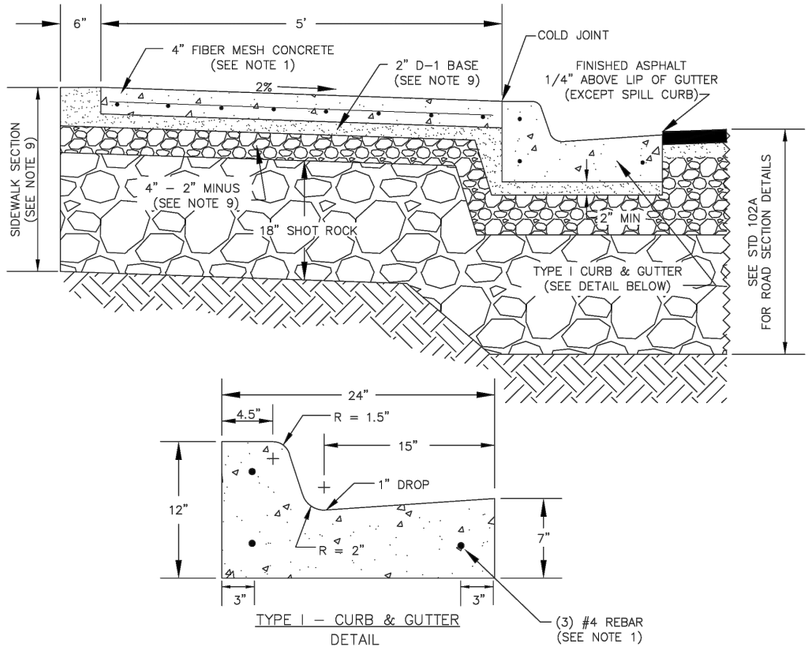
1. Applicable permit number for which you are requesting coverage (the permit number is AKR100000).
2. Operator name, contact person, address, telephone number, and Employer Identification Number (EIN) as established by the Internal Revenue Service
3. Billing contact information
4. Project/site name, address, and latitude/longitude
5. Whether the SWPPP precedes the filing of the NOI (required by the permit), and location for viewing the applicable SWPPP
6. Name of the water(s) of the U.S. into which your site discharges (see NOI instructions for further explanation)
7. Whether the project discharges into a waterbody that is impaired or has a TMDL and if the discharge is consistent with the assumptions and requirements of applicable EPA approved or established TMDLs.
8. Estimated dates of commencement of construction activity and final stabilization (i.e., project start and completion dates)
9. Total acreage (to the nearest quarter acre) to be disturbed for which you are requesting

both a corporate officer includ
title (as defined by the Standa
Conditions of the CGP) and th
regional director

DEC established the use of the eNOI t
delay involved in mailed paper NOIs.
account is needed to use the eNOI syst

The eNOI requires the same informati
standard NOI. Staff will prepare a har
the certifying official's use when subn
eNOI. The appropriate corporate offic

1 D100 DRIVE WAY CURB CUT DETAIL
NOT TO SCALE



NOTES:

1. CONCRETE SHALL BE CLASS A, FIBER MESH REINFORCED IN ACCORDANCE WITH CBJ STANDARD SPECIFICATION SECTION 03303 – SIDEWALK, CURB AND GUTTER. REBAR IN CURB AND WIRE MESH IN SIDEWALK IS ALLOWED AS SHOWN.
2. CONCRETE INTERNATIONAL CORPORATION ASHFORD FORMULA OR APPROVED EQUAL SHALL BE APPLIED AS A CURING COMPOUND. APPLICATION SHALL CONFORM TO THE MANUFACTURERS RECOMMENDATIONS.
3. COLD JOINTS ARE REQUIRED EVERY 10' MAXIMUM. ALL JOINTS AND SEAMS SHALL BE EDGED.
4. STEEL TROWELING FINISH REQUIRED PRIOR TO BROOM FINISHING ON ALL SURFACES.
5. CURB AND GUTTER TRANSITION DESIGN TO BE APPROVED BY THE ENGINEER.
6. TYPE II AND TYPE III CURB TO BE USED AS DIRECTED BY THE ENGINEER IN ACCORDANCE TO CBJ STANDARD 104B.
7. ALL REINFORCING STEEL MUST HAVE A MINIMUM OF 2" OF CONCRETE COVER WHEN SUBSTITUTED FOR FIBER MESH.
8. WHEELCHAIR ACCESS RAMPS SHALL BE REQUIRED ON ALL NEW SIDEWALK CONSTRUCTION AT CROSSWALKS AND INTERSECTIONS. ACCESS RAMPS TO BE CONSTRUCTED IN ACCORDANCE TO CBJ STANDARD 106.
9. 4" CONCRETE SIDEWALK SUBBASE SHALL BE 2" D–1, 4" 2" MINUS AND 18" OF SHOT ROCK. 2" ASPHALT SIDEWALK SUBBASE SHALL BE 2" D–1, 6" 2" MINUS AND 18" SHOT ROCK.
10. MINIMUM LONGITUDINAL SLOPE FOR CURB AND GUTTER SHALL BE NO LESS THAN 0.5%.

2 D100 CONCRETE SIDEWALK, TYPE I CURB, AND GUTTER DETAIL
NOT TO SCALE

REVISIONS:

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Single Family Dwelling
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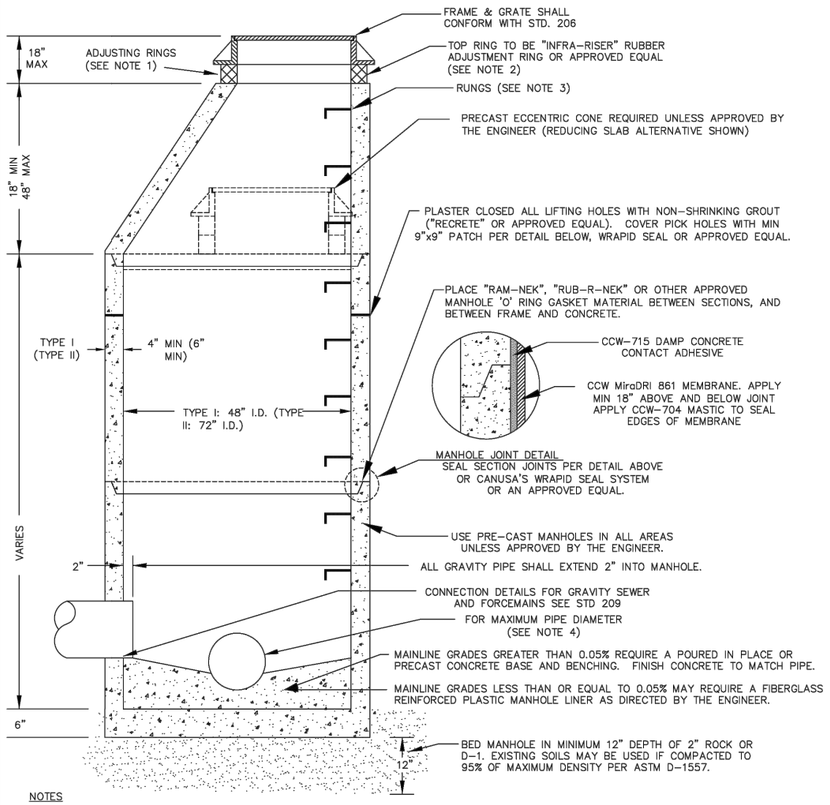
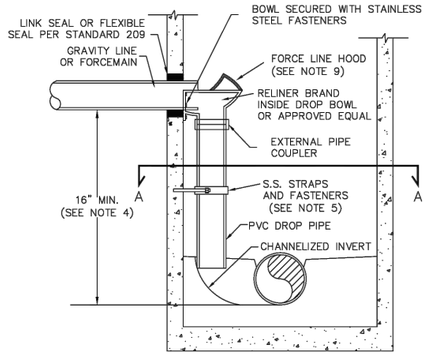


NOTES

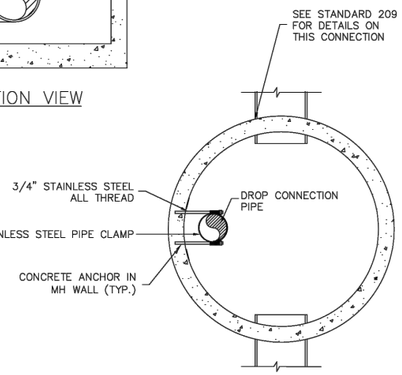
1. USE NO MORE THAN ONE 4" ADJUSTING RING FOR NEW CONSTRUCTION OR UNPAVED ROADS, USE NO MORE THAN THREE 4" RINGS FOR RECONSTRUCTION OF PAVED OR CHIPSEAL ROADS. TOP ADJUSTING RINGS SHALL BE AN "INFRA-RISER" RUBBER ADJUSTING RING OR APPROVED EQUAL. MATCH FINAL GRADE PER TABLE CBJ STANDARD 205.
2. USE "PL POLYURETHANE SELF-LEVELING CONCRETE CRACK SEALANT" OR APPROVED EQUAL FOR "INFRA-RISER" INSTALLATION.
3. RUNGS TO BE PLACED 12" O.C. ON UNOBSTRUCTED SIDE OF MANHOLE. LAST RUNG SHALL BE 18" MAX FROM BOTTOM OF MANHOLE, AND TOP RUNG SHALL BE 6" MAXIMUM FROM TOP OF CONE. IF UNOBSTRUCTED SIDE NOT AVAILABLE, LAST RUNG SHALL BE PLACED 6" OVER SMALLEST PIPE. RUNGS SHALL BE LANE POLYETHYLENE 14" LADDER STEPS OR AN APPROVED EQUAL.
4. MAXIMUM PIPE DIAMETER SHALL BE 20" FOR A TYPE I MANHOLE. FOR LARGER PIPES, USE A TYPE II MANHOLE. MANHOLES INTERSECTED BY MORE THAN 2 PIPES, 15" DIAMETER OR LARGER, USE A TYPE II MANHOLE. MINIMUM MAINLINE DIAMETER SHALL BE 8".
5. REFER TO A.S.T.M. C-478 FOR DESIGN REQUIREMENTS AND C-478-69 FOR MINIMUM STEEL FOR BARREL AND BASE. BLOCKOUTS SHALL BE FORMED.
6. IF MANHOLE IS WITHIN A ROADWAY, COMPACTION TESTS MUST BE TAKEN ON BACKFILL EVERY 3'. DENSITY SHALL BE 95% OF MAXIMUM PROCTOR DENSITY.
7. MANHOLE FRAMES MAY BE RAISED TO ACCOMMODATE PAVEMENT OVERLAYS PROVIDED THE DISTANCE FROM THE TOP OF THE FRAME TO THE FIRST RUNG IS LESS THAN 36".

1 D101 SANITARY SEWER MANHOLE, TYPE I&II DETAIL

NOT TO SCALE



ELEVATION VIEW



PIPE SUPPORT DETAIL (SEE NOTE 6)

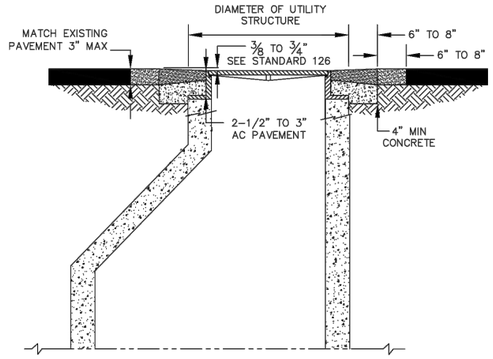
SECTION A-A

NOTES:

1. ALL OTHER ASPECTS OF MANHOLE CONSTRUCTION SHALL CONFORM WITH STANDARD 203.
2. MANHOLE ELEVATION SHALL CONFORM WITH STANDARD 205.
3. MANHOLE COVER AND FRAME SHALL CONFORM WITH STANDARD 206.
4. DROP CONNECTIONS ARE REQUIRED IF INFLOW INVERT ELEVATION IS MORE THAN 16" ABOVE THE OUTLET INVERT ELEVATION WHERE INVERT ELEVATIONS ARE LESS THAN 16" APART, A CHANNELIZED INVERT SHALL BE FORMED TO A MAXIMUM OF ONE INFLOW PIPE DIAMETER BELOW THE INFLOW PIPE INVERT.
5. STAINLESS STEEL PIPE SUPPORTS SHALL BE INSTALLED 3'-0" ON CENTER ON THE VERTICAL DROP PIPE.
6. A RELINER BRAND STAINLESS ADJUSTABLE CLAMPING BRACKET MAY BE USED IN PLACE OF THE ILLUSTRATED PIPE SUPPORT.
7. DROP PIPING SHALL BE THE DIAMETER SPECIFIED BY THE MANUFACTURER OF THE DROP ASSEMBLY.
8. IF MORE THAN ONE DROP CONNECTION IS MADE, INSTALL A MIN. 6' DIAMETER MANHOLE.
9. FORCE LINE HOOD FOR INSIDE DROP BOWL, RELINER BRAND OR APPROVED EQUAL.

2 D101 SANITARY SEWER DROP MANHOLE

NOT TO SCALE



MANHOLE LID
BELOW GRADE

MANHOLE DEPTHS BELOW GRADE

LOCATION OF MANHOLE	DEPTH (D)
PAVED STREETS (SEE NOTE 1)	3/8"-3/4"
BACKYARDS, GRAVEL STREETS, AND TRAVELED ALLEY AREAS	6" MAX

NOTES:

1. MANHOLE LID MUST CONFORM TO THE GRADE AND CROSS SLOPE OF THE STREET. SEE STANDARD 126.
2. MEASUREMENT SHALL BE TAKEN FROM THE TOP OF THE FRAME. SEE STANDARD 206A/206B
3. FOR BACKYARDS, GRAVEL STREETS AND TRAVELED ALLEY AREAS, BACKFILL TO MATCH EXISTING GRADE.
4. SANITARY SEWER MAIN CLEANOUT ELEVATIONS SHALL CONFORM TO THIS STANDARD.

3 D101 MANHOLE HEIGHT DETAIL

NOT TO SCALE

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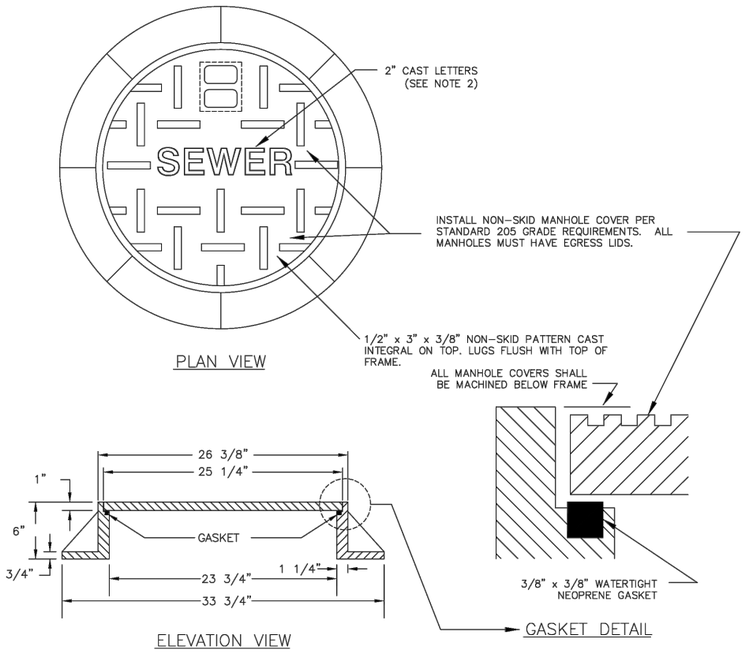
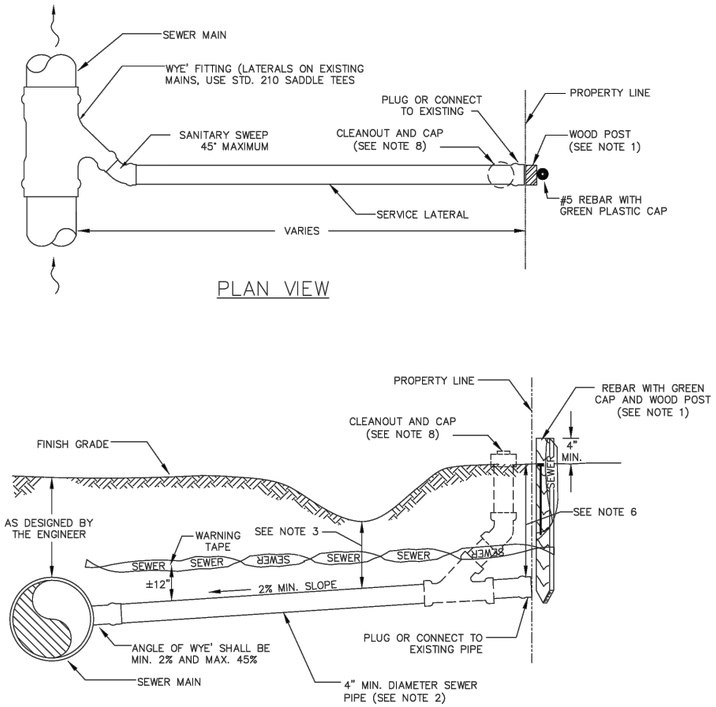


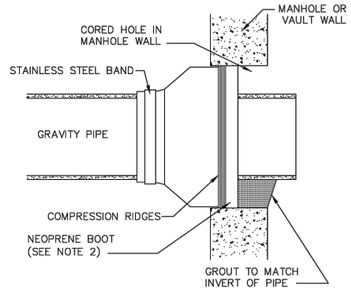
NOTES:
1. FRAME MUST BE MACHINED TO FIT WATERTIGHT NEOPRENE GASKET.
2. MANHOLE COVER SHALL BE WATER TIGHT WITH NO HOLES, SHALL HAVE THE WORD "SEWER", "WATER" OR "STORM DRAIN" CAST IN COVER AND SHALL BE PROVIDED WITH AN INTEGRAL POCKET LIFT HANDLE.
3. FRAME AND MANHOLE COVER DIMENSIONS SHALL BE IN ACCORDANCE WITH OLYMPIC CONSTRUCTION CASTINGS NO. MH30A WITH EGRESS LID, OR AN APPROVED EQUAL.
4. FRAME AND MANHOLE COVER SHALL BE DUCTILE OR CAST IRON AND A TYPE THAT WILL NOT CREATE A HAZARD FOR BICYCLE TRAFFIC.
5. IF MAINLINE IS 20" OR GREATER, PROVIDE MANHOLE WITH 30" OPENING IN COVER & FRAME.
6. ALL MANHOLE COVERS SHALL BE MACHINED BELOW FRAME AS SHOWN IN GASKET DETAIL ABOVE.

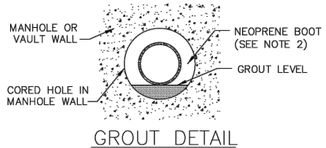
1 / D102 STANDARD MANHOLE COVER AND FRAME DETAIL
NOT TO SCALE



NOTES:
1. MARK SERVICE WITH GREEN PAINTED 2"x4" POST OR STAMP "S" IN TOP OF CURB. POST SHALL EXTEND TO DEPTH OF SERVICE LATERAL. REBAR W/CAP SHALL BE DRIVEN TO GROUND LEVEL. EXTEND WARNING TAPE TO TOP OF POST AND STAPLE IN PLACE.
2. ACCEPTABLE PIPE FOR USE WITHIN R.O.W. INCLUDES C900 PVC, SDR 35 PVC AND DUCTILE IRON.
3. MINIMUM CLEARANCE OF 18" REQUIRED BENEATH DITCH LINE. PIPE WITH LESS THAN 44" OF COVER SHALL BE INSULATED AS APPROVED BY THE ENGINEER.
4. DISTANCE FROM WYE TO MANHOLE AND TWO MEASURED DISTANCES FROM END OF SERVICE PIPE TO PERMANENT OBJECTS SHALL BE NOTED ON AS-BUILT PLANS.
5. SERVICE LATERAL SHALL END AT THE PROPERTY LINE WITH A BELL AT THE END OF PIPE.
6. LATERAL DEPTH AT PROPERTY LINE SHALL ACCOMMODATE EXISTING BUILDING SEWER OR FUTURE BUILDING SITE(S).
7. PIPE CONNECTIONS IN THE RIGHT-OF-WAY THAT DO NOT USE BELL AND SPIGOT SHALL CONFORM TO STANDARD 218.
8. CLEANOUT MAY BE REQUIRED AT THE DIRECTION OF THE ENGINEER.

3 / D102 SANITARY SEWER SERVICE LATERAL DETAIL
NOT TO SCALE





NOTES
1. ALL MANHOLE CONNECTIONS SHALL BE 100% WATERTIGHT.
2. ALL PIPE SHALL EXTEND 2" INTO MANHOLE.
3. NEOPRENE BOOT ON THE FLEXIBLE SEAL ADAPTER SHALL BE A MINIMUM OF 3/8" THICK PER ASTM C-443, AND SHALL BE HELD IN PLACE WITH AN INTERNAL EXPANDING BAND SUCH AS "KOR-N-SEAL" OR APPROVED EQUAL.
4. PVC SAND COLLAR NOT ALLOWED IN AREAS OF A HIGH WATER TABLE.
5. HDPE FLANGE SHALL BE WELDED TO A SECTION OF PIPE AND INSERTED THROUGH THE FLEXIBLE SEAL FROM THE INSIDE OF THE MANHOLE. THE LENGTH OF HDPE REQUIRED TO BE DETERMINED BY THE INSTALLER.
6. ROMAC HDPE PIPE STIFFINER OR APPROVED EQUAL MAY BE REQUIRED FOR HDPE GRAVITY MAIN INSTALLATIONS. VERIFY WITH THE ENGINEER PRIOR TO INSTALLATION.

2 / D102 MANHOLE CONNECTION DETAIL
NOT TO SCALE

REVISIONS:

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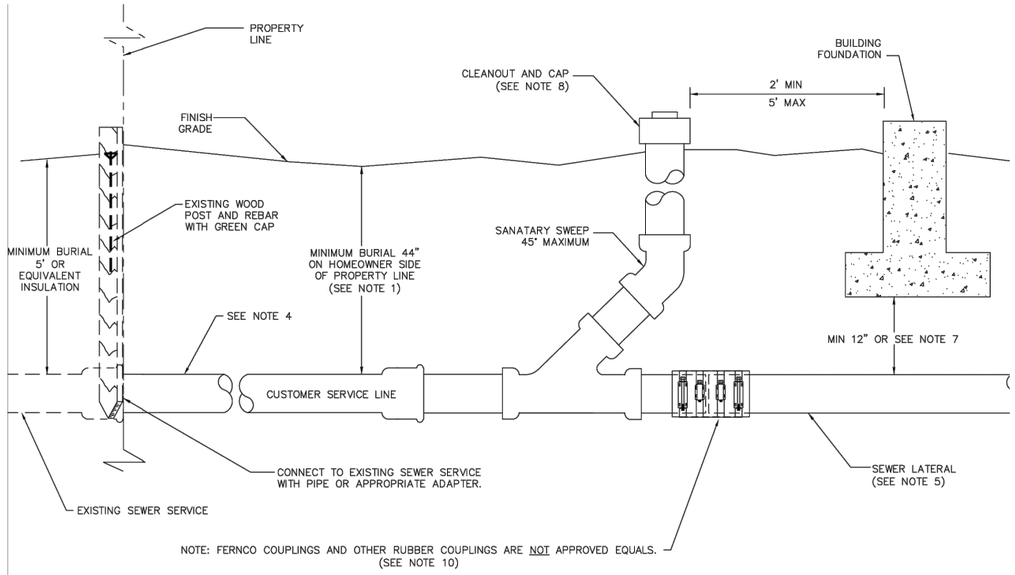
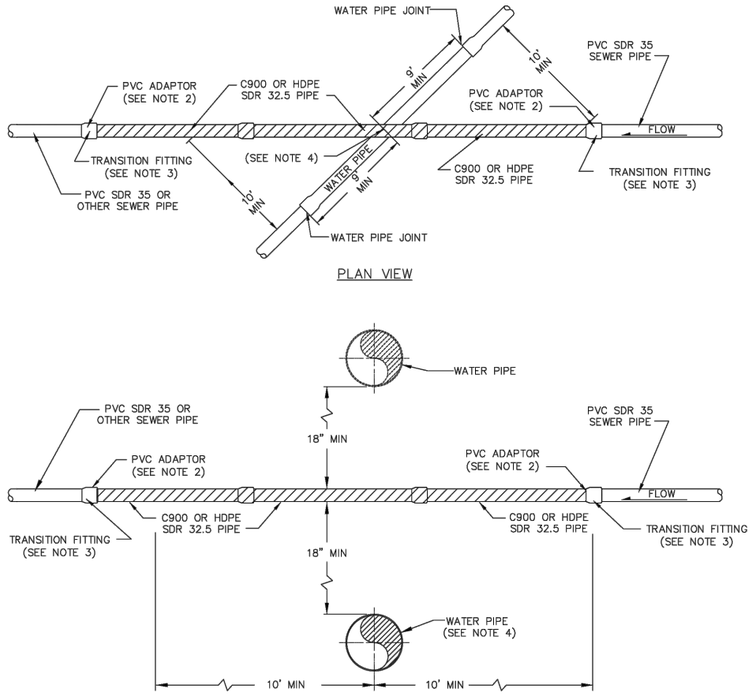


NOTES:

1. WHERE DEPTH OF PIPE MUST BE LESS THAN 44" INSULATION SHALL BE REQUIRED AS APPROVED BY THE ENGINEER.
2. MINIMUM GRADE SHALL BE 2% (1/4" PER FOOT).
3. MINIMUM PIPE DIAMETER SHALL BE 4".
4. ACCEPTABLE MATERIALS FOR PIPE CONSTRUCTION BETWEEN THE PROPERTY LINE AND THE CLEANOUT AT THE FOUNDATION INCLUDE: PVC (SDR 35 OR THICKER), A.B.S. (SCHEDULE 40), DUCTILE IRON (CLASS 2), AND CAST IRON (CLASS 2200).
5. MATERIALS AND INSTALLATION OF THE SEWER LATERAL SHALL CONFORM TO THE UNIFORM PLUMBING CODE. (NOTE: SDR 35 PVC IS NOT AN APPROVED MATERIAL FOR USE UNDER OR INSIDE THE FOUNDATION).
6. LATERAL DEPTH OF SANITARY SEWER SERVICE AT PROPERTY LINE SHALL ACCOMMODATE EXISTING SEWER LATERAL OR FUTURE BUILDING SITE(S). SEE STANDARD 213.
7. IF SEWER LATERAL IS LESS THAN 12" FROM FOUNDATION, SEWER LATERAL SHALL EITHER BE IRON PIPE OR A.B.S. SLEEVED IN IRON. IF SEWER LATERAL PASSES THROUGH THE FOUNDATION WALL, PIPE SHALL BE IRON AND THERE SHALL BE AT LEAST A 1" GAP IN CONCRETE AROUND PIPE. THIS GAP SHALL BE SEALED WITH FOAM.
8. CLEANOUT CONSTRUCTED OF "WYE" FITTING AND CAP OF SAME MATERIAL AS PIPE SHALL BE CONSTRUCTED WITHIN 2' TO 5' OF BUILDING FOUNDATION. AN ADDITIONAL
9. CLEANOUT SHALL BE REQUIRED FOR EVERY 100' OF PIPE AND FOR EACH AGGREGATE BEND OF 135°.
10. IF SEWER LATERAL DIFFERS IN MATERIAL OR SIZE FROM REST OF LINE, A COUPLING, NON-SHEAR, EAITHER MISSION FLEX SEAL, ROMAC INDURTRIES LSS1, OR APPROVED EQUAL IS REQUIRED. FOR LSS1 COUPLING, MINIMUM LENGTH IS 8" FOR A 4" DIA PIPE AND 12" FOR A 6" DIA PIPE.

1 / D103 SANITARY SEWER CONNECTION, CUSTOMER SERVICE LINE DETAIL

NOT TO SCALE



NOTES:

1. HDPE, C900 OR SDR 32.5 SEWER PIPE SHALL BE INSTALLED FOR THE LENGTH SHOWN FOR ALL SANITARY SEWER CROSSINGS AS DIRECTED BY THE ENGINEER.
2. FROM SDR 35 TO C900 AND C900 TO SDR 35 JOINTS SHALL BE TRANSITION BELL PVC ADAPTER, INSTALLED PER THE MANUFACTURERS RECOMMENDATION.
3. FROM SDR 35 TO HDPE AND HDPE TO SDR 35 JOINTS SHALL BE TRANSITION FITTING OR LSS-1, STAINLESS NON-SHEAR COUPLING, INSTALLED PER THE MANUFACTURERS RECOMMENDATION.
4. A FULL LENGTH OF WATER PIPE SHALL BE CENTERED UNDER OR OVER THE SANITARY SEWER PIPE AT ALL CROSSINGS. THE TEN FOOT MEASUREMENT SHALL BE TAKEN PERPENDICULAR TO THE WATER PIPE JOINT.

2 / D103 SANITARY SEWER CROSSING DETAIL

NOT TO SCALE

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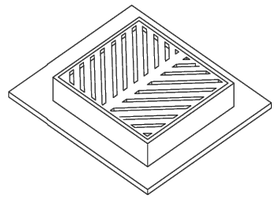
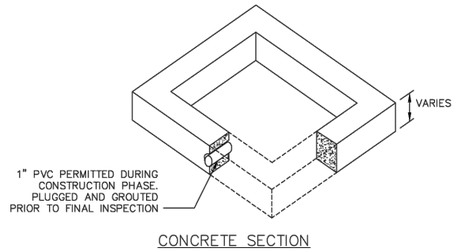
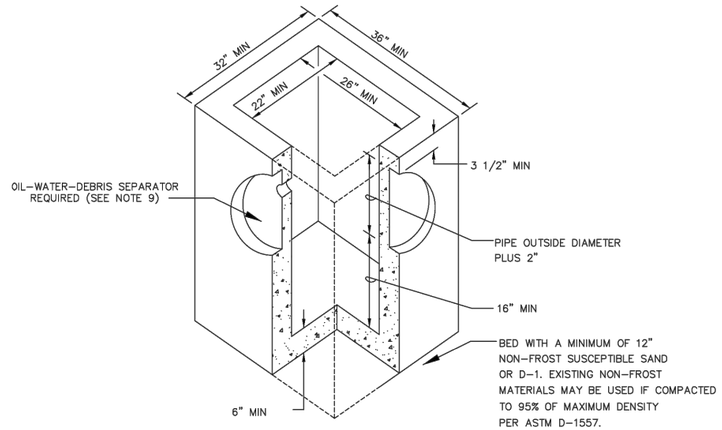


FRAME & GRATE



CONCRETE SECTION



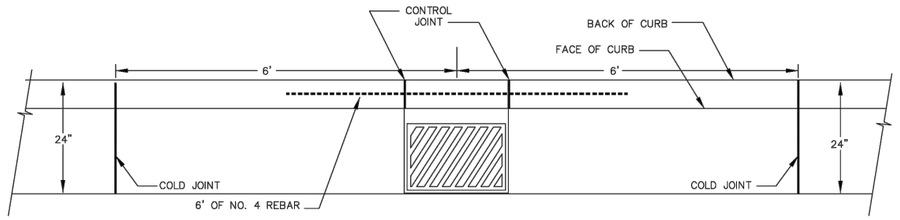
CATCH BASIN

NOTES

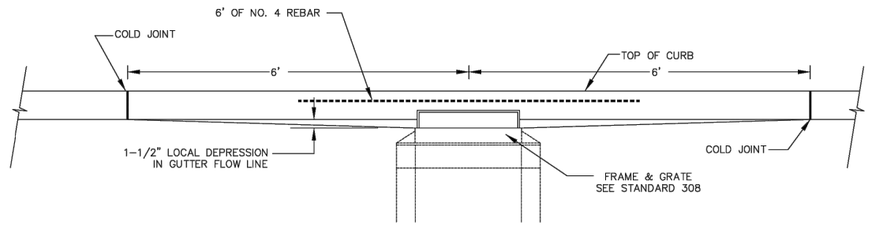
1. FOR USE WITH TWO INLET/OUTLET PIPES OF DIAMETER 12" OR SMALLER. FOR LARGER AND/OR MORE INLET/OUTLET PIPES OR IF CATCH BASIN IS DEEPER THAN 4' FROM FINISH GRADE TO SUMP, INSTALL A TYPE I OR TYPE II STORM DRAIN MANHOLE (SEE STANDARD 303).
2. ENTIRE KNOCKOUT IS TO BE REMOVED AND SEALED SHUT AROUND PIPE. ALL PIPES ARE TO EXTEND MIN 1" AND MAX 3" INTO CATCH BASIN. GROUT INTERIOR AND EXTERIOR BETWEEN FRAME, SECTIONS, AND CATCH BASIN.
3. FRAME AND GRATE SHALL BE DUCTILE IRON. FRAME MAY BE CAST INTO THE TOP UNIT OR PLACED OVER THE OPENING AS APPROVED BY THE ENGINEER. FRAME AND GRATE SHALL BE OF A TYPE THAT WILL NOT CREATE A HAZARD FOR BICYCLE TRAFFIC.
4. CATCH BASIN SHALL MEET HIGHWAY STANDARD–20 LOAD REQUIREMENTS.
5. MINIMUM STEEL SHALL BE SPECIFIED BY ASTM C–478–69.
6. MINIMUM SUMP DEPTH SHALL BE 16".
7. ADJUSTING RING SHALL BE THE SAME SIZE AS THE CATCH BASIN.
8. THE AREA BETWEEN THE TOP OF THE CATCH BASIN AND THE FRAME SHALL BE FORMED AND FILLED WITH CONCRETE MEETING THE REQUIREMENTS OF CBJ SPECIFICATION 03302 – CONCRETE STRUCTURES. NO BRICKS, WOOD OR OTHER MATERIALS PERMITTED FOR ADJUSTING GRADE.
9. ALL CATCH BASINS THAT EMPTY INTO AN OPEN DRAINAGE SHALL BE FITTED WITH AN OIL–WATER–DEBRIS SEPARATOR DEVICE AS DIRECTED BY THE ENGINEER.

1 / D104 TYPE III CATCH BASIN DETAIL

NOT TO SCALE



PLAN VIEW



ELEVATION VIEW

NOTES:

1. INSTALL LEFT OR RIGHT GRATES FOR BICYCLE SAFETY AS DETERMINED BY THE ENGINEER.
2. INSTALL STORM DRAIN MANHOLE TYPE I OR II, OR CATCH BASIN TYPE III OR TYPE IV AS APPROVED BY THE ENGINEER. SEE STANDARDS 303, 304A, AND 304B.
3. FOR DETAILS ON CURB INLET FRAME & GRATE SEE STANDARD 308.
4. CURB & GUTTER SHALL CONFORM WITH STANDARD 111A.

2 / D104 LOCAL DEPRESSION AT CATCH BASIN DETAIL

NOT TO SCALE

REVISIONS:

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SHEET:
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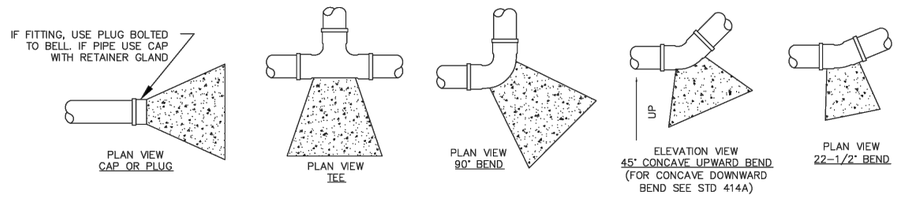


PIPE SIZE	TEES, CAPS, & PLUGS		90° BENDS		ALTERNATIVE RESTRAINED LENGTH IN ALL DIRECTIONS (FEET) – SEE NOTE 5		
	MIN. CONCRETE VOL. (YD;)	MIN. BEARING AREA (FT5)	MIN. CONCRETE VOL. (YD;)	MIN. BEARING AREA (FT5)	TEES	90° BENDS	CAPS & PLUGS
4"	0.1	1.7	0.1	2.4	11	16	33
6"	0.2	3.5	0.4	4.9	15	23	47
8"	0.5	6.0	0.9	8.5	20	30	62
10"	1.0	9.1	1.7	12.8	24	37	74
12"	1.7	12.8	2.9	18.1	29	44	88
14"	2.6	17.2	4.5	24.4	33	50	100
16"	3.9	22.3	6.6	31.5	38	57	113
18"	5.5	28.0	9.2	39.6	42	63	126
20"	7.5	34.4	12.5	48.6	47	70	138
24"	12.7	49.0	21.4	69.3	56	83	162

SMALL ANGLE ADJUSTMENT	
FOR ANGLES LESS THAN 90° MULTIPLY VOLUMES, AREAS, AND LENGTHS FOR 90° ANGLE BY THIS FACTOR	
ANGLE	FACTOR
45°	0.414
22–1/2°	0.199
11–1/4°	0.098

NOTES

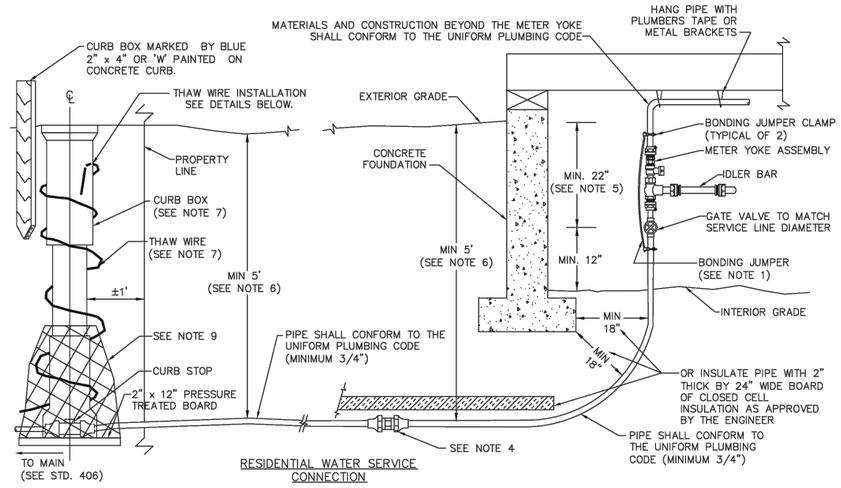
1. CENTER OF MASS OF THRUST BLOCK MUST LAY OPPOSITE TO AND ALIGNED AGAINST THE DIRECTION OF THRUST.
2. THRUST BLOCKS SHALL BE POURED SO THAT JOINTS OF FITTINGS, INCLUDING ALL NUTS AND FOLLOWERS REMAIN ACCESSIBLE.
3. CONCRETE THRUST BLOCKS SHALL BE POURED AGAINST UNDISTURBED EARTH. UNSTABLE OR UNSUITABLE MATERIALS SHALL BE REMOVED, REPLACED AND/OR COMPACTED AS DETERMINED BY THE ENGINEER.
4. VOLUME AND BEARING SURFACE OF 2500 P.S.I. CONCRETE THRUST BLOCKS ARE BASED ON 150 P.S.I. WATER PRESSURE AND SOIL BEARING CAPACITY OF 2000 P.S.F. ALL OTHER PRESSURE AND/OR SOIL CONDITIONS ARE SUBJECT TO THE ENGINEER'S REVIEW AND APPROVAL.
5. THRUST BLOCKS MAY BE OMITTED IF ALL JOINTS WITHIN MINIMUM DISTANCE GIVEN BY ABOVE TABLE ARE RESTRAINED AND PIPE IS BEDDED IN SAND. THE DISTANCES APPEARING IN THE TABLE ASSUME THAT THE PIPE IS BURIED AT LEAST 5' DEEP AND THAT SOIL CONDITIONS ARE AS LISTED IN NOTE 4. THE INFORMATION IN THE TABLE IS BASED ON DIPRA'S "THRUST RESTRAINT FOR DUCTILE IRON PIPE" WHICH SHOULD BE CONSULTED IF THESE ASSUMPTIONS ARE NOT MET. SUBJECT TO THE CONDITIONS LISTED IN NOTE 4, A COMBINATION OF A SMALLER THRUST BLOCK AND A REDUCED LENGTH OF RESTRAINED PIPE IS ALLOWED PER THE FOLLOWING FORMULA:

$$\frac{\text{ACTUAL BEARING AREA OF BLOCK}}{\text{BEARING AREA REQUIRED BY TABLE}} + \frac{\text{ACTUAL RESTRAINED LENGTH OF PIPE}}{\text{RESTRAINED LENGTH REQUIRED BY TABLE}} \geq 1.1$$

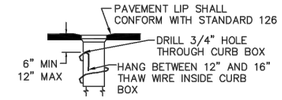
6. THRUST BLOCKS ARE REQUIRED FOR ALL BENDS, TEES, PLUGS, AND CAPS IN PIPE 4" AND LARGER EXCEPT AS LISTED IN NOTE 5.
7. REGARDLESS OF SIZE OF THRUST BLOCKS ALL JOINTS AT CAPS, PLUGS, BENDS, AND TEES MUST BE RESTRAINED.
8. RESTRAINED LENGTHS USED IN PLACE OF THRUST BLOCKS IN STANDARDS 414A AND 414B MAY NOT OVERLAP.
9. FIELD–LOCK GASKETS, MEGA–LUG AND UNIFLANGE COUPLINGS ARE THE ONLY APPROVED MEANS OF RESTRAINING PIPE.

1 / D105 THRUST BLOCK DETAIL

NOT TO SCALE



RESIDENTIAL WATER SERVICE CONNECTION



THAW WIRE INSTALLATION DETAIL

NOTES:

1. BONDING JUMPER MUST MATCH ELECTRICAL COLD WATER GROUND WIRE. (EXAMPLE: NO. 4 WIRE FOR UP TO 200 AMP SERVICE.) BONDING JUMPER CLAMP MUST BE COMPATIBLE WITH COPPER PIPE.
2. ALL JOINTS OR VALVES ON SERVICE SIDE OF METER YOKE MUST BE MECHANICAL FITTINGS.
3. ALL COMMERCIAL FACILITIES AND RESIDENTIAL BUILDINGS WITH TWO OR MORE UNITS MUST INSTALL A WATER METER (OBTAINABLE FROM CBJ WATER UTILITY). SEE STANDARD 420.
4. ALL UNDERGROUND COPPER TUBE CONNECTIONS (IF ANY) SHALL BE EITHER MUELLER OR FORD FLARED UNIONS, FORD GRIP JOINT COMPRESSION FITTINGS OR APPROVED EQUAL. NIBCO BRAND IS NOT AN APPROVED EQUAL.
5. AFTER INSTALLATION, CONTINUE TO MAINTAIN A MINIMUM OF 22" UNOBSTRUCTED CLEARANCE FOR THE METER YOKE.
6. BURIAL DEPTHS GREATER THAN 5' MAY BE REQUIRED BY THE ENGINEER.
7. CURB BOX MUST BE RESET SO THAT IT IS PLUMB, AND THAW WIRE SHALL BE WOUND AROUND OUTSIDE OF CURB BOX.
8. UNDERGROUND SERVICE LINE SHALL NOT BE WITHIN 1" OF ANY OTHER SERVICE LINE.
9. WRAP BOTTOM OF CURB BOX WITH FABRIC OR PLASTIC PRIOR TO BACKFILLING TO KEEP MATERIAL FROM INFILTRATING THE BOX.

1 / D105 RESIDENTIAL WATER SERVICE CONNECTION DETAIL

NOT TO SCALE

REVISIONS:

THRHA
Single Family Dwelling
PHASE I

STATUS:
CONSTRUCTION DOCUMENTS

DRAWN BY: JPT
CHECKED BY: TSS
DATE: 8/31/2023
PROJECT #: 222321.10

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8/31/2023
REGISTERED PROFESSIONAL ENGINEER

SHEET DESCRIPTION:
DETAILS

D105

SHEET:
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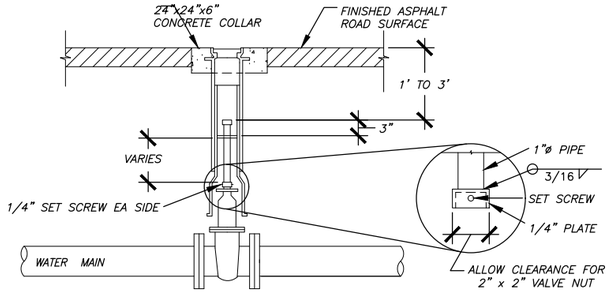


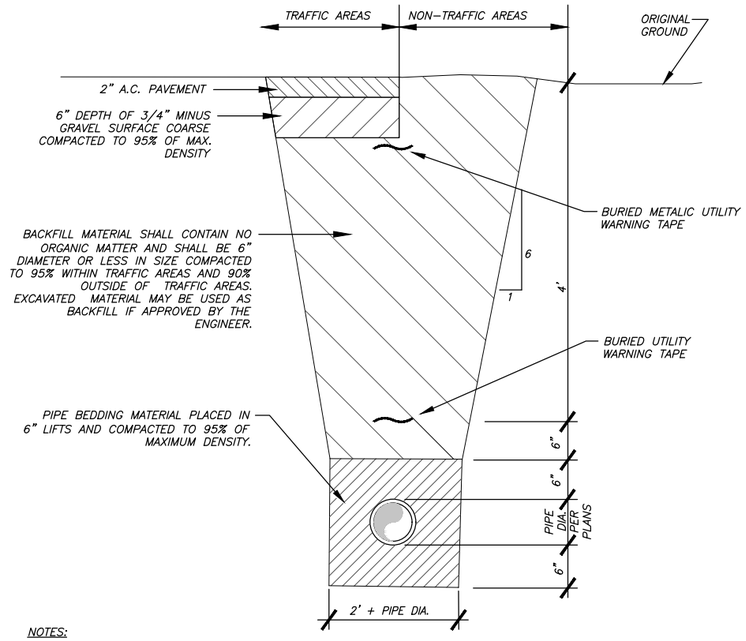
NOTE: EXTENSION IS REQUIRED ON ALL VALVES WHERE OPERATING NUT IS 6 FT OR MORE BELOW FINISHED SURFACE.

NOTES:

1. NEW VALVE BOX TO ALLOW FOR 12" MINIMUM VERTICAL ADJUSTMENT
2. THREADED VALVE BOX SECTIONS ARE NOT ALLOWED. CONTRACTOR SHALL REMOVE THREADED PORTIONS OF THE VALVE BOX WITH CUT-OFF SAW
3. CONTRACTOR SHALL APPLY GREASE TO ALL INTERFACES BETWEEN VALVE BOX SECTIONS.
4. COMPACTION AROUND VALVE BOX INSTALLATION IS CRITICAL. CONTRACTOR SHALL EMPLOY MECHANICAL TAMPING METHODS TO ENSURE THAT MATERIAL AROUND VALVE BOX REACHES 95% OF MAXIMUM COMPACTION.
5. CONTRACTOR SHALL INSTALL A 6" MINIMUM THICKNESS OF D-1 BEDDING AROUND VALVE BOX DURING BACKFILL.
6. EXTENSION IS REQUIRED ON ALL VALVES WHERE OPERATING NUT IS 4.5' OR MORE BELOW FINISHED SURFACE.

1 / D106 TYPICAL MAIN LINE VALVE W/OPERATING ROD DETAIL

NOT TO SCALE



NOTES:

1. BACKFILL MATERIAL SHALL BE PLACED IN 12" MAXIMUM LIFTS.
2. TRENCH EXCAVATION AND SHORING SHALL COMPLY WITH LOCAL, STATE, AND OSHA REGULATIONS AND REQUIREMENTS.
3. INDICATED SLOPE IS FOR PAY QUANTITY DETERMINATION ONLY FOR IMPORTED BACKFILL GRAVEL AND RESURFACING REQUIREMENTS.
4. IF UNSUITABLE PIPE FOUNDATION MATERIAL IS ENCOUNTERED DURING EXCAVATION, ENGINEER MAY DIRECT THE CONTRACTOR TO OVER-EXCAVATE AND BACKFILL WITH SUITABLE MATERIAL.
5. THE DITCH LINE, IF ONE EXISTS, SHALL BE RESHAPED IN SUCH A MANNER TO ALLOW POSITIVE DRAINAGE TO MATCH PRE-CONSTRUCTION CONDITIONS.

1 / D106 TYPICAL TRENCH DETAIL

NOT TO SCALE

REVISIONS:

THRHA
Single Family Dwelling
PHASE I

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8/31/2023
REGISTERED PROFESSIONAL ENGINEER

SHEET DESCRIPTION:
DETAILS

D106

SHEET:
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