GENERAL CONSTRUCTION NOTES

1. CBJ ENGINEERING STANDARD DETAILS BOOK FOR CIVIL ENGINEERING PROJECTS AND SUBDIVISION IMPROVEMENTS DATED AUGUST, 2011 AND CBJ ENGINEERING STANDARD SPECIFICATIONS DATED DECEMBER, 2003 ARE MADE A PART OF THIS CONTRACT, WITH CURRENT REVISIONS AS APPLICABLE.
2. LARGE BOULDERS, HARDPAN, STUMPS, LOGS, ORGANICS AND GROUNDWATER MAY BE ENCOUNTERED AT VARIOUS DEPTHS DURING TRENCHING, DITCHING AND EXCAVATION OPERATIONS. THESE MATERIALS SHALL BE DISPOSED OF AS REQUIRED BY THE ENGINEER.
3. GRADES AND ALIGNMENTS SHOWN ON THESE PLANS ARE SUBJECT TO MINOR REVISIONS AS APPROVED BY THE ENGINEER.
4. LOCATION OF WATER SYSTEM IMPROVEMENTS, SANITARY SEWER, STORM DRAIN, PIPING AND PIPE LENGTHS ARE SUBJECT TO MINOR REVISIONS AS APPROVED BY THE ENGINEER.
5. LOCATIONS OF EXISTING UNDERGROUND SEWER, WATER, TELEPHONE, CABLE TELEVISION, AND POWER UTILITIES SHOWN ON THESE PLANS WERE DERIVED FROM LOCAL KNOWLEDGE, AS-BUILT DRAWINGS AND/OR FIELD LOCATES. ACTUAL LOCATIONS MAY VARY FROM THOSE SHOWN. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING, PROTECTING AND MAINTAINING ALL UTILITIES THROUGHOUT THE CONSTRUCTION OF THIS PROJECT. ANY DAMAGE RESULTING TO THESE UTILITIES DURING CONSTRUCTION SHALL BE PAID FOR BY THE CONTRACTOR AND SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT. CALL "DIAL BEFORE YOU DIG" @ 586-1333 FOR UNDERGROUND UTILITY LOCATES PRIOR TO ANY EXCAVATION ACTIVITIES. ALSO COORDINATE WITH EAGLECREST MAINTENANCE PERSONNEL FOR LOCATING ANY COMMUNICATION AND/OR ABANDONED FUEL LINES PRIOR TO ANY EXCAVATION ACTIVITIES. EVERY ATTEMPT HAS BEEN MADE TO LOCATE AND DENOTE EXISTING UTILITIES DURING THE SURVEY. THERE ARE MANY VARIED AND CONTRADICTED ITEMS IN THIS AREA THAT HAVE NO KNOWN RECORDS. THERE IS A STRONG POSSIBILITY OF UNKNOWN BURIED UTILITIES & OTHER ITEMS WITHIN THE CONSTRUCTION LIMITS AND THE CONTRACTOR MUST EXHAUST EVERY EFFORT TO IDENTIFY, LOCATE AND PROTECT WHATEVER UTILITY MAY BE ENCOUNTERED.
6. CONTRACTOR SHALL ASSURE GARBAGE PICKUP, DAILY MAIL SERVICE, FUEL AND SERVICE DELIVERIES WILL BE UNINTERRUPTED TO ALL PARTIES AFFECTED BY THIS PROJECT.
7. THE CONTRACTOR SHALL DELIVER ALL ASPHALT PAVEMENT REMOVED FROM THIS PROJECT TO A STOCKPILE AREA IN THE CBJ LEMON CREEK PIT. CONTACT THE CBJ PIT MANAGER FOR THE EXACT LOCATION OF THE STOCKPILE AREA.
8. ALL ITEMS DESIGNATED TO BE REMOVED SHALL BE DISPOSED OF AT AN APPROVED DISPOSAL SITE, EXCEPT AS NOTED IN THE CONTRACT DOCUMENTS.
9. PROVIDE KNOCKOUTS IN CATCH BASINS AND MANHOLES FOR ALL PIPES SHOWN ON THE PLANS.
10. ONLY HORIZONTAL ELBOW FITTINGS (BENDS) ARE SHOWN ON THE PLANS. ADDITIONAL FITTINGS MAY BE REQUIRED FOR VERTICAL DEFLECTIONS NEAR CONNECTION TO EXISTING PIPES, AND AT OTHER LOCATIONS REQUIRING GRADE CHANGES TO AVOID CONFLICTS.
11. CONTRACTOR SHALL REFERENCE ALL EXISTING PROPERTY CORNER MONUMENTS (I.E. BRASS CAP MONUMENTS, REBARS OR CHISELED X'S) PRIOR TO CONSTRUCTION THAT WILL BE DISTURBED DURING HIS WORK, AND REMONUMENT AFTER CONSTRUCTION OPERATIONS. ALL WORK SHALL BE DONE BY, OR UNDER THE DIRECTION OF, AN ALASKA REGISTERED LAND SURVEYOR. ALL EXISTING PROPERTY CORNERS ARE NOT NECESSARILY SHOWN ON THE PLANS.
12. THE DRAWINGS DO NOT NECESSARILY SHOW ALL TREES AND/OR SHRUBS THAT MAY BE ENCOUNTERED DURING CONSTRUCTION ACTIVITIES. NO TREES, SHRUBS OR LANDSCAPING SHALL BE REMOVED OR DAMAGED, UNLESS SHOWN ON THE DRAWINGS OR DIRECTED BY THE ENGINEER.
13. AEL&P, ACS AND GCI MAY CONDUCT WORK WITHIN THE PROJECT LIMITS TO RELOCATE UTILITIES AND TO UPGRADE THEIR RESPECTIVE SYSTEMS. THE CONTRACTOR SHALL COORDINATE HIS ACTIVITIES WITH EACH UTILITY COMPANY AND PROVIDE ACCESS AS NECESSARY FOR UTILITY COMPANIES TO COMPLETE THEIR WORK.
14. "JUMPING JACK", OR SIMILAR TYPE COMPACTORS SHALL BE USED FOR COMPACTION WITHIN 18-INCHES OF THE OUTSIDE SURFACE OF ALL WATER VALVE BOXES AND MANHOLES.
15. THE USE OF GROUT AND QUICKSET CEMENT PRODUCTS WITH ADJUSTING RINGS, BRICKS, WOOD, STONES AND OTHER SIMILAR GRADE ADJUSTMENT DEVICES TO SUPPORT CATCH BASIN FRAMES OVER CATCH BASINS AND MANHOLES WILL NOT BE PERMITTED ON THIS PROJECT. SEE SPECIFICATION SECTION 334101 – STORM SEWER MANHOLES, INLETS AND CATCH BASINS AND THE DRAWINGS FOR CATCH BASIN FRAME SUPPORT REQUIREMENTS.
16. THE CONTRACTOR SHALL INSTALL AND MAINTAIN ENGINEER APPROVED EROSION CONTROL DEVICES DURING CONSTRUCTION AS STATED IN THEIR APPROVED EROSION AND SEDIMENT CONTROL PLAN.
17. CONTRACTOR SHALL VERIFY LOCATION AND DEPTH OF EXISTING WATER AND SEWER PIPES, INCLUDING ALL SERVICES ALONG THE STORM DRAIN AND WATER PIPE ALIGNMENTS TO DETERMINE PIPE INSULATION LOCATIONS AND TO ENSURE DAMAGE DOES NOT OCCUR TO THE SERVICE PIPES.
18. THE CONTRACTOR SHALL PROVIDE TOP OF WATER PIPE ELEVATIONS TO THE ENGINEER AT A MAXIMUM SPACING OF 50-FEET AND AT ALL GRADE BREAKS PRIOR TO BACKFILLING OVER THE PIPE. IF THE PIPE IS BACKFILLED PRIOR TO PROVIDING THESE TOP OF PIPE ELEVATIONS, THE PIPE SHALL BE EXPOSED AND THE TOP OF PIPE SURVEYED BY THE CONTRACTOR.

NEW STORM DRAIN STRUCTURE FRAME & GRATE SUMMARY

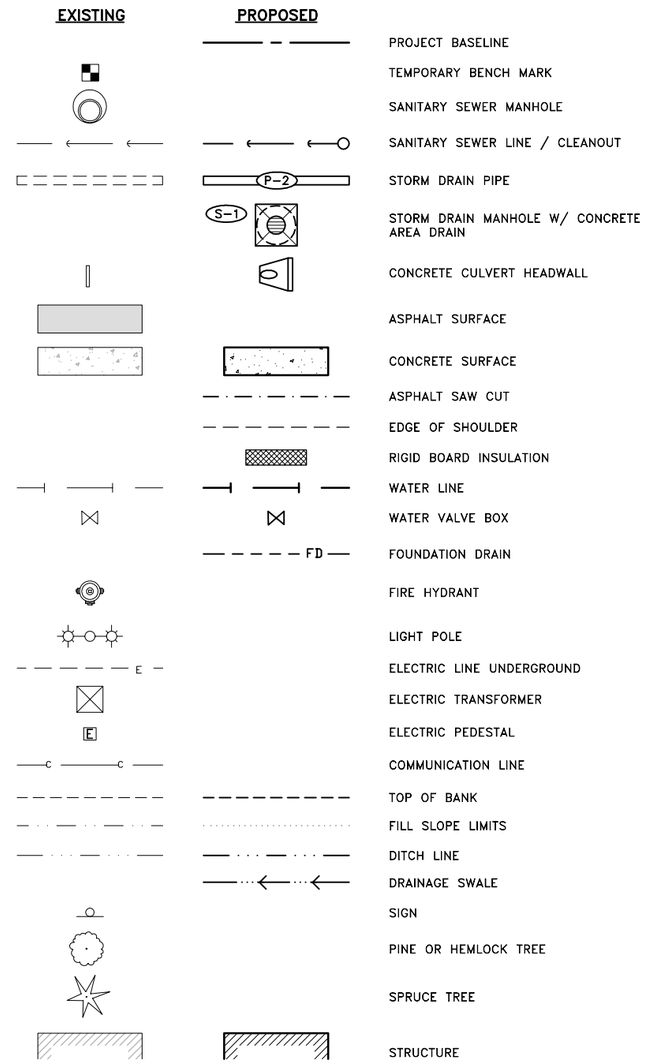
STRUCTURE No.	EAST JORDAN IRON WORKS, OLYMPIC FOUNDRY COMPANY OR APPROVED EQUAL
S-1	FRAME: EJIW 3721Z DI, GRATE: EJIW 3700M DI
S-2	FRAME: EJIW 3721Z DI, GRATE: EJIW 3700M DI
S-3	FRAME: EJIW 3721Z DI, GRATE: EJIW 3700M DI

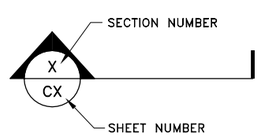
NOTE: CATCH BASIN TOP SLAB OPENINGS SHALL BE DIMENSIONED TO FIT THE FRAME DIMENSIONS. ALL GRATES SHALL BE HEAVY DUTY CONSTRUCTION AND BICYCLE SAFE. ALL FRAMES AND GRATES TO BE DUCTILE IRON.

ABBREVIATIONS

AC	ASBESTOS CEMENT
ACS	ALASKA COMMUNICATIONS SYSTEMS
AEL&P	ALASKA ELECTRIC LIGHT & POWER
AST	ABOVEGROUND STORAGE TANK
BC	BEGINNING OF CURVE
(C)	COMPUTED
CB	CATCH BASIN
CBJ	CITY & BOROUGH OF JUNEAU
CHB	CHORD BEARING
CHL	CHORD LENGTH
C/L	CENTERLINE
CIP	CAST IRON PIPE
CLR	CLEAR
CMP	CORRUGATED METAL PIPE
CONC	CONCRETE
CONT	CONTINUOUS
CPP	CORRUGATED POLYETHYLENE PIPE
CTE	CONNECT TO EXISTING
DI	DUCTILE IRON
DIP	DUCTILE IRON PIPE
DIA	DIAMETER
DOT&PF	STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
E	EASTING
EG	EXISTING GRADE
EJIW	EAST JORDAN IRON WORKS
EL	ELEVATION
EP	EDGE OF PAVEMENT
EQ	EQUAL
EXIST	EXISTING
EXP	EXPANSION
FD	FOUNDATION DRAIN
FG	FINISH GRADE
FH	FIRE HYDRANT
FL	FLOW LINE
FM	FORCE MAIN
GCI	GENERAL COMMUNICATION INC.
GV	GATE VALVE
HDPE	HIGH DENSITY POLYETHYLENE
HP	HIGH POINT
IE	INVERT ELEVATION
L	LENGTH
LP	LOW POINT
LT	LEFT
MAX	MAXIMUM
MIN	MINIMUM
MJ	MECHANICAL JOINT
MTE	MATCH TO EXISTING
N	NORTHING
N/A	NOT APPLICABLE
NF	NEENAH FOUNDRY CO.
NFS	NON-FROST SUSCEPTIBLE
NTS	NOT TO SCALE
NVC	NO VERTICAL CURVE
OC	ON CENTER
OFCO	OLYMPIC FOUNDRY CO.
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PERF	PERFORATED
PI	POINT OF INTERSECTION
P/L	PROPERTY LINE
POC	POINT ON CURVE
POL	POINT ON LINE
PP	POWER POLE
PRC	POINT OF REVERSE CURVATURE
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
R	RADIUS
RP	RADIUS POINT
RT	RIGHT
SDMH	STORM DRAIN MANHOLE
SS	SANITARY SEWER
SSCO	SANITARY SEWER CLEANOUT
SSMH	SANITARY SEWER MANHOLE
STA	STATION
STD	STANDARD
SWPPP	STORM WATER POLLUTION PREVENTION PLAN
T	TANGENT
TBM	TEMPORARY BENCH MARK
TBC	TOP BACK OF CURB
TOB	TOP OF BANK
TOP	TOP OF PIPE
TYP	TYPICAL
UD	UNDERDRAIN
UON	UNLESS OTHERWISE NOTED
UST	UNDERGROUND STORAGE TANK
VC	VERTICAL CURVE
VERT	VERTICAL
VPC	VERTICAL POINT OF CURVATURE
VPI	VERTICAL POINT OF INTERSECTION
VPT	VERTICAL POINT OF TANGENCY
W/	WITH

SYMBOLS





REFERENCE BUBBLE EXPLANATION

N.T.S.

Jensen Yorba Lott Inc.
522 West 10th Street
Juneau, Alaska 99801
phone 907-586-1070
fax 907-586-3959
jensenyorbalott.com

R & M ENGINEERING, INC.
6205 GLACIER HIGHWAY
JUNEAU, AK. 99801
Phone 907-780-6060
Fax 907-780-4611
rmengineering@rmjuneau.com

STATE OF ALASKA 19TH Karen A. Puustinen CE 12474 PROFESSIONAL ENGINEER 10-28-13

CITY & BOROUGH OF JUNEAU
EAGLECREST LEARNING CENTER
CBJ CONTRACT No. E014-076

REVISIONS

SHEET TITLE
GENERAL NOTES
ABBREVIATIONS
& SYMBOLS

DATE: October 28, 2013
FILE: 13031

C001

TH-1 (Elev.=1137')
SOIL DESCRIPTION
CME-55 TRUCK MOUNTED HYDRAULIC DRILL RIG — 7-25-13

DEPTH(FT.) | FROZEN | SOIL GRAPH | LOCATION SAMPLED

0-2" Asphalt Pavement

2"-2.5' Medium dense, grayish brown Gravel fill, mixed with shot rock (cobbles), moist

① Ss, 2.5'-3.5', N-value=22, 14.2%
Med. dense, brownish gray silty Sand with gravel (Fill), moist. (SM). Stiff Glacial Till below 3.5 feet.

② Ss, 4.0'-5.5', N-value=87, 7.9%
4.5'-8.5' Very dense, gray Glacial Till, degrades into slightly plastic clayey-silty Sand with Gravel, mixed with cobbles/boulders, dry. (SC-SM)

③ Ss, 7.0'-8.5', N-value=82

- Auger Refusal at 9.0 feet depth. End of Test Hole.
- Water Table not encountered.
- Light rain, air temperature ~50-55 degF

TH-2 (Elev. 1137')
SOIL DESCRIPTION
CME-55 TRUCK MOUNTED HYDRAULIC DRILL RIG — 7-25-13

FROZEN | SOIL GRAPH | LOCATION SAMPLED

0-6" Grayish brown sandy Gravel fill, moist.

6"-2.0' Gray 6"-8" Shot rock (cobbles) mixed with gravel fill.

2.0'-3.0' Gray gravel embedded in stiff Glacial Till.

① Ss, 3.5'-5.0', N-value=82, 7.7%

3.5'-7.2' Very dense, gray Glacial Till, degrades into slightly plastic clayey-silty Sand with Gravel, mixed with cobbles/boulders, dry. (SC-SM)

② Ss, 7.0'-7.2', N-value=50/2"

- Auger Refusal at 7.0 feet depth. SPT bounced off.
- End of Test Hole at 7.2 feet.
- Water Table not encountered.
- Overcast, air temperature ~50-55 degF

TH-3 (Elev.=1151')
SOIL DESCRIPTION
A-FRAME PORTABLE DRILL — 7-26-13

DEPTH(FT.) | FROZEN | SOIL GRAPH | LOCATION SAMPLED

0'-2.5' Very loose, gray Muskeg mixed with silt and sand, wet.

2.5'-5.0' Soft to Stiff gray, sandy Glacial Till with gravel, few cobbles, wet.

② Ss, 4.0'-5.5', N-value=104, 8.7%

5.0'-10.0' Very dense, gray Glacial Till, degrades into slightly plastic clayey-silty Sand with Gravel, mixed with cobbles/boulders, dry. (SC-SM)

- End of Test Hole at 10.0' on very dense Till with cobbles. Bi-cone refusal.
- Hole full of water from bicon drill bit
- Overcast, air temperature ~55 degF

TH-4 (Elev.=1141')
SOIL DESCRIPTION
A-FRAME PORTABLE DRILL — 7-26-13

DEPTH(FT.) | FROZEN | SOIL GRAPH | LOCATION SAMPLED

0'-3.5' Very loose, gray Muskeg mixed with silt and sand, wet.

3.5'-5.0' Soft to Stiff gray, sandy Glacial Till with gravel, few cobbles, wet.

① Ss, 4.0'-5.5', N-value=104, 8.7%

② Ss, 7.0'-8.5', N-value=43-30/1" (SPT bounced, hit rock)

5.0'-11.0' Very dense, gray Glacial Till, degrades into slightly plastic clayey-silty Sand with Gravel, mixed with cobbles/boulders, dry. (SC-SM)

- End of Test Hole at 11.0 depth. Bicon refusal.
- Hole full of water from Bi-cone drill bit.
- Overcast, air temperature ~55 degF

TH-5 (Elev.=1148')
SOIL DESCRIPTION
CME-55 TRUCK MOUNTED HYDRAULIC DRILL RIG — 7-29-13

DEPTH(FT.) | FROZEN | SOIL GRAPH | LOCATION SAMPLED

0'-3.0' Very loose, gray, Muskeg mixed with silt and sand, wet.

3.0'-8.0' Soft to Stiff gray, sandy Glacial Till with gravel, few cobbles, wet.

① Ss, 8.4'-9.0', N-value=15/1"(SPT bounced, hit cobble in Till)

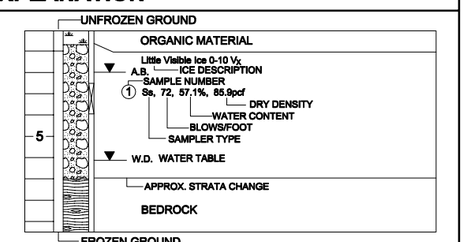
② Ss, 10.8'-12.3', N-value=115, 9.1%

8.5'-17.2' Very dense, gray Glacial Till, degrades into slightly plastic clayey-silty Sand with Gravel, mixed with cobbles/boulders, dry. (SC-SM)

③ Ss, 17.0'-17.2', N-value=60/3"

- End of Test Hole at 17.2' depth.
- Hole full of water from coring operation
- Sunny, partly cloudy, air temperature ~70 degF

EXPLANATION



W.D.-WHILE DRILLING/DIGGING
A.B.-AFTER BORING

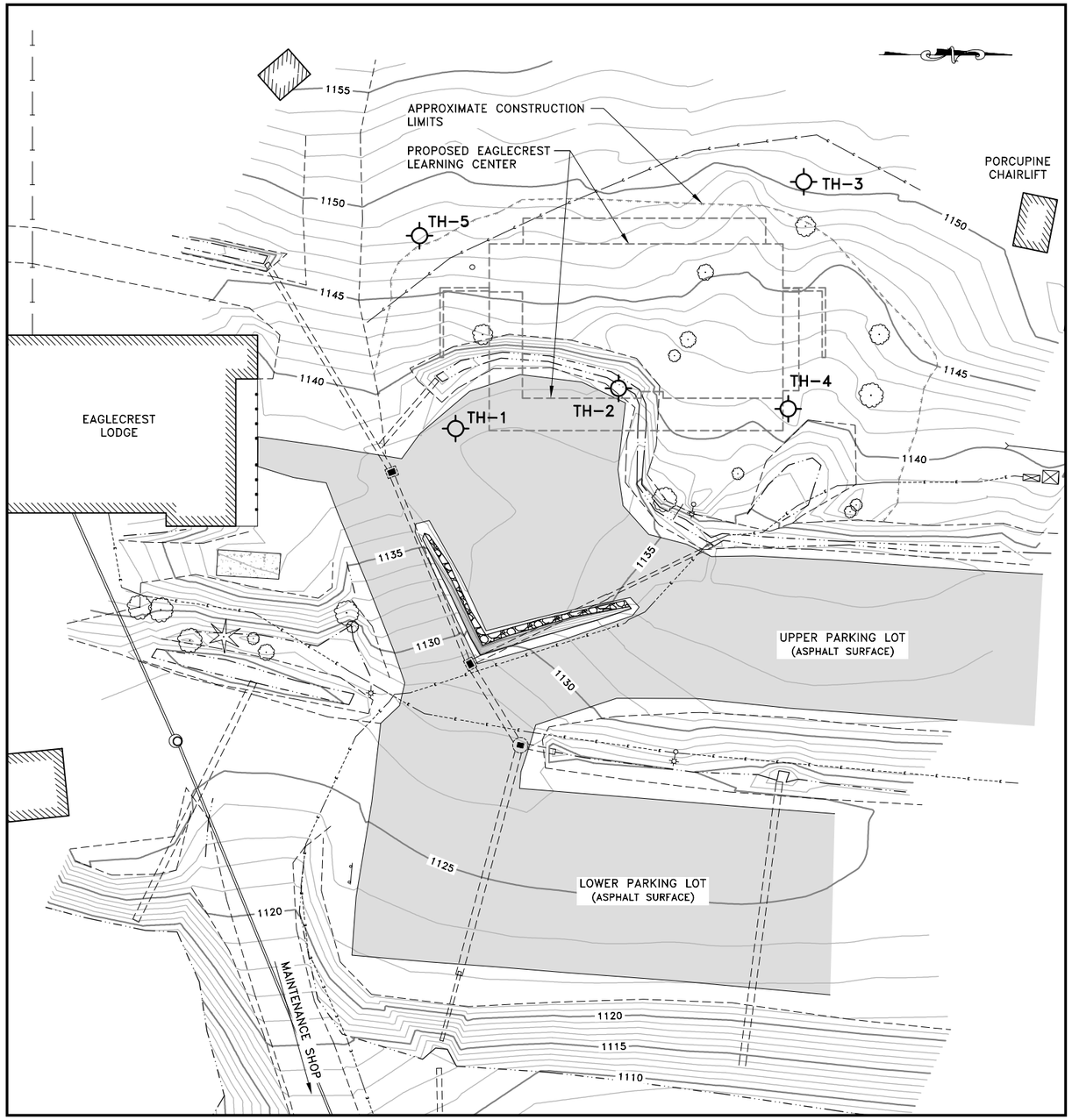
TYPICAL SOILS LOG

Ss	1.4" SPLIT SPOON WITH 140 LB. HAMMER
Sz	1.4" SPLIT SPOON WITH 340 LB. HAMMER
Sh	2.5" SPLIT SPOON WITH 340 LB. HAMMER
Sp	2.5" SPLIT SPOON, PUSHED
A	AUGER SAMPLE
Ts	SHELBY TUBE
Tm	MODIFIED SHELBY TUBE
Bs	BULK SAMPLE

SOIL SYMBOLS

MUSKEG · CLAY/ TILL · SILT · SAND · GRAVEL · COBBLES & BOULDERS · BEDROCK · HARD TILL · SAND & GRAVEL · BEACH SHELLS

SAMPLER TYPE SYMBOLS



TEST HOLE LOCATION MAP

GRAPHIC SCALE
0' 10' 20' 40' 80'
CONTOUR INTERVAL = 1'

Jensen Yorba Lott Inc.
522 West 10th Street
Juneau, Alaska 99801
phone 907-586-1070
fax 907-586-3959
jensenyorbalott.com

R & M ENGINEERING, INC.
6205 GLACIER HIGHWAY
JUNEAU, AK. 99801
Phone 907-780-6060
Fax 907-780-4611
rmengineering@rmjuneau.com

STATE OF ALASKA 49TH — Karen A. Puustinen CE 12474 — REGISTERED PROFESSIONAL ENGINEER — 10-28-13

CITY & BOROUGH OF JUNEAU
EAGLECREST LEARNING CENTER
CBJ CONTRACT No. E014-076

REVISIONS

SHEET TITLE
SOILS TEST HOLE LOCATION MAP & LOGS

DATE: October 28, 2013
FILE: 13031

C002

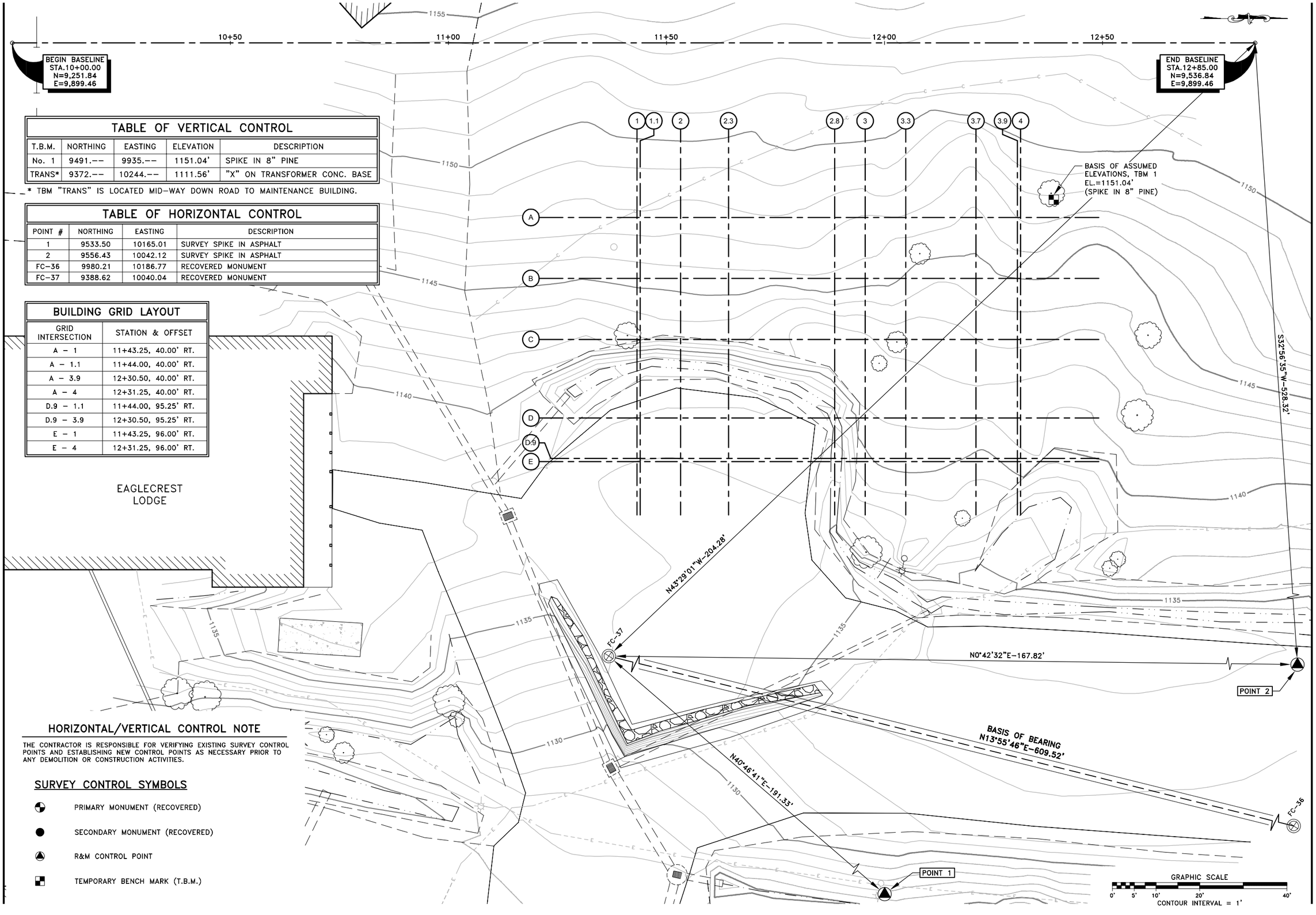


TABLE OF VERTICAL CONTROL

T.B.M.	NORTHING	EASTING	ELEVATION	DESCRIPTION
No. 1	9491.--	9935.--	1151.04'	SPIKE IN 8" PINE
TRANS*	9372.--	10244.--	1111.56'	"X" ON TRANSFORMER CONC. BASE

* TBM "TRANS" IS LOCATED MID-WAY DOWN ROAD TO MAINTENANCE BUILDING.

TABLE OF HORIZONTAL CONTROL

POINT #	NORTHING	EASTING	DESCRIPTION
1	9533.50	10165.01	SURVEY SPIKE IN ASPHALT
2	9556.43	10042.12	SURVEY SPIKE IN ASPHALT
FC-36	9980.21	10186.77	RECOVERED MONUMENT
FC-37	9388.62	10040.04	RECOVERED MONUMENT

BUILDING GRID LAYOUT

GRID INTERSECTION	STATION & OFFSET
A - 1	11+43.25, 40.00' RT.
A - 1.1	11+44.00, 40.00' RT.
A - 3.9	12+30.50, 40.00' RT.
A - 4	12+31.25, 40.00' RT.
D.9 - 1.1	11+44.00, 95.25' RT.
D.9 - 3.9	12+30.50, 95.25' RT.
E - 1	11+43.25, 96.00' RT.
E - 4	12+31.25, 96.00' RT.

HORIZONTAL/VERTICAL CONTROL NOTE

THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING SURVEY CONTROL POINTS AND ESTABLISHING NEW CONTROL POINTS AS NECESSARY PRIOR TO ANY DEMOLITION OR CONSTRUCTION ACTIVITIES.

SURVEY CONTROL SYMBOLS

- PRIMARY MONUMENT (RECOVERED)
- SECONDARY MONUMENT (RECOVERED)
- R&M CONTROL POINT
- TEMPORARY BENCH MARK (T.B.M.)

Jensen Yorba Lott Inc.
522 West 10th Street
Juneau, Alaska 99801
phone 907-586-1070
fax 907-586-3959
jensenyorbalott.com

R&M ENGINEERING, INC.
6205 GLACIER HIGHWAY
JUNEAU, AK. 99801
Phone 907-780-6060
Fax 907-780-4611
rmengineering@rmjuneau.com

STATE OF ALASKA 49TH Kevin A. Puustinen CE 12474 REGISTERED PROFESSIONAL ENGINEER 10-28-13

CITY & BOROUGH OF JUNEAU EAGLECREST LEARNING CENTER

CBJ CONTRACT No. E014-076

REVISIONS

SHEET TITLE
SURVEY CONTROL & BUILDING GRID LAYOUT

DATE: October 28, 2013
FILE: 13031

C003

SURVEY NOTES

1. THE BASIS OF BEARING FOR THIS SURVEY WAS THE LINE-OF-SIGHT BETWEEN RECOVERED EXISTING MONUMENTS FC-37 AND FC-36 HAVING AN ISOLATED PROJECT BEARING OF N13°55'16"E. THIS BEARING WAS ARRIVED AT IN AN ATTEMPT TO MATCH ARCHITECTS ONGOING PROJECT DEVELOPMENT DRAWINGS BUT HAS NO RELATION TO THOSE DRAWINGS AND OR TRUE GEODETIC BEARING.
2. THE BASIS OF VERTICAL CONTROL FOR THIS SURVEY IS AN ASSUMED ELEVATION OF 1151.04 FEET AT TBM No 1. THIS ELEVATION IS ISOLATED AND ASSUMED FOR THIS SURVEY ONLY.

DIAL BEFORE YOU DIG!
586-1333
U/G POWER, TELEPHONE & T.V. SHOWN ON THIS DRAWING INDICATE EXISTENCE ONLY AND DO NOT SUBSTITUTE FOR FIELD LOCATES

APPROXIMATE LOCATION OF 8" DIP ARCTIC WATER PIPE (NOT LOCATED BY SURVEY)

DEMOLITION LEGEND

- REMOVE & DISPOSE ASPHALT
- REMOVE & DISPOSE TREE

REMOVE & DISPOSE EXISTING 18" CPP, INSTALL REPAIR BAND ON EXISTING 18" CPP THAT IS TO REMAIN

EAGLECREST LODGE

F.F.=1138.79'

F.F.=1138.85'

APPROX. JOINT LOCATION

STA.11+06.4
102.8' RT.

EXISTING CATCH BASIN
AVG. GRADE EL.=1137.50'
WEST I.E.=1132.50'
EAST I.E.=1132.40'

STA.11+00.2
127.3' RT.

CONCRETE PAD FOR UNDERGROUND OIL TANK

STA.11+06.8
143.1' RT.

I.E.=1143.04'

I.E.=1135.23'

I.E.=1121.91'(C)

EXISTING SSMH
LID EL.=1125.58'
WEST I.E.=1120.82'
EAST I.E.=1120.71'

EXISTING CUT OFF ELECTRICAL CABLE, UNDERGROUND UNKNOWN

APPROX. LOCATION OF UNDERGROUND COMMUNICATIONS CABLE, EXACT LOCATION UNKNOWN

TH-1
TH-2
TH-3
TH-4
TH-5

BASIS OF ASSUMED ELEVATIONS, TBM 1
EL.=1151.04'
(SPIKE IN 8" PINE)

STA.11+83.3
118.0' RT.

STA.11+30.1
118.0' RT.

STA.11+25.0
123.1' RT.

SAW CUT & REMOVE ASPHALT, TYP.

ROCK RETAINING WALL

STA.11+20.9
124.0' RT.

FC-37

ROCK RETAINING WALL

STA.12+00.9
129.8' RT.

STA.12+08.2
137.1' RT.

EXPOSED CONDUIT, UNDERGROUND UNKNOWN

I.E.=1131.77'

STA.12+41.5
134.7' RT.

LOCATION OF PIPE SIZE CHANGE UNKNOWN

BASIS OF BEARING
N13°55'46"E-609.52'

FC-36

LOCATION OF PIPE SIZE CHANGE UNKNOWN

EXISTING CATCH BASIN
AVG. GRATE EL.=1128.68'
WEST I.E.=1124.05'
NORTH I.E.=1123.99'
EAST I.E.=1123.85'

EXISTING CATCH BASIN
AVG. GRATE EL.=1126.90'
WEST I.E.=1120.82'
NORTH I.E.=1120.84'
EAST I.E.=1120.57'

I.E.=1123.29'

10" PINE
8" PINE
6" PINE
12" PINE
(2) 6" PINE
10" SPRUCE
6" HEMLOCK

18"CPP
13"CPP
12"CPP
24"CMP
24"CPP
8"PVC

1155
1150
1145
1140
1135
1130

GRAPHIC SCALE
0' 5' 10' 20' 40'
CONTOUR INTERVAL = 1'

Jensen Yorba Lott Inc.
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fax 907-586-3959
jensenyorbalott.com

R & M ENGINEERING, INC.
6205 GLACIER HIGHWAY
JUNEAU, AK. 99801
Phone 907-780-6060
Fax 907-780-4611
rmengineering@rmjuneau.com

STATE OF ALASKA 19TH
Karen A. Puustinen
CE 12474
PROFESSIONAL ENGINEER
10-28-13

CITY & BOROUGH OF JUNEAU
EAGLECREST LEARNING CENTER
CBJ CONTRACT No. E014-076

REVISIONS

SHEET TITLE
EXISTING SITE TOPOGRAPHIC SURVEY & DEMO PLAN

DATE: October 28, 2013
FILE: 13031

C100

BEGIN BASELINE
STA.10+00.00
N=9,251.84
E=9,899.46

END BASELINE
STA.12+85.00
N=9,536.84
E=9,899.46

APPROXIMATE LOCATION OF 8" DIP ARCTIC WATER PIPE (NOT LOCATED BY SURVEY)

UTILITY NOTES:

A. PROVIDE ALL ADAPTERS AND FITTINGS NECESSARY TO CONNECT TO 6" WATER SERVICE, COORDINATE CONNECTION WITH MECHANICAL, I.E.=1135.00'.

B. PROVIDE ALL ADAPTERS AND FITTINGS NECESSARY TO CONNECT TO BUILDING 6" SANITARY SEWER WASTE LINE, COORDINATE CONNECTION WITH MECHANICAL, I.E.=1133.00'. INSTALL CLEANOUT, SEE DETAIL 2 ON SHEET C402.

C. PROVIDE ALL ADAPTERS AND FITTINGS NECESSARY TO CONNECT TO 6" STORM DRAIN WASTE LINE, COORDINATE CONNECTION WITH MECHANICAL, I.E.=1134.00'. INSTALL CLEANOUT, SEE DETAIL 2 ON SHEET C402.

D. RELOCATE EXISTING ELECTRICAL CONDUIT AS NECESSARY TO ACCOMMODATE NEW GRADING AND UTILITIES.

E. INSTALL 6x6x6 WYE FITTING FOR CONNECTION TO CANOPY DOWNSPOUT, COORDINATE EXACT LOCATION WITH ARCHITECT.

F. PROTECT & MAINTAIN ALL UTILITIES NOT DESIGNATED FOR REMOVAL.

INSTALL NEW 6" GATE VALVE

ADJUST VERTICAL PROFILE TO AVOID UTILITY CONFLICTS

CONNECT TO EXISTING 6" ARCTIC PIPE WITH 6"x6"x6" DIP TEE. INSULATE FITTING AND NEW SERVICE LINE UNTIL 6' BURIAL DEPTH IS ACHIEVED.

6" HDPE (6' BURIAL)

I.E.=1143.04'

RELOCATE EXISTING UNDERGROUND COMM. CABLE, SEE ELECTRICAL SHEETS FOR DETAILS

EXISTING CUT OFF ELECTRICAL CABLE, UNDERGROUND UNKNOWN

APPROX. LOCATION OF UNDERGROUND COMMUNICATIONS CABLE, EXACT LOCATION UNKNOWN

STA.11+38.3, 39.0' RT
P-4 I.E. = 1142.8'

STA.11+23.0, 54.4' RT
P-4 I.E. = 1139.5'

STA.12+24.6, 39.0' RT
P-4 I.E. = 1144.5'

APPROXIMATE SLOPE/ CONSTRUCTION LIMITS

WOOD FRAMED DECK, SEE STRUCTURAL

EAGLECREST LEARNING CENTER
1ST FLOOR 1138.00' (100'-0")
2ND FLOOR 1150.00' (112'-0")

SOUTH RETAINING WALL, SEE SHEET C203

NORTH RETAINING WALL, SEE SHEET C203

CLEAR AND GRUB AREA, REMOVE ALL SOFT AND UNSUITABLE SOILS, PLACE 6" MINUS SHOT ROCK AS NECESSARY AND CAP WITH 6" OF BASE COURSE GRADING D-1, 95% COMPACTION

SSMH-1	TYPE-I MH
STA.10+72.93,	159.58' RT.
LID EL=	1128.00'
SP-1 I.E.=	1121.83'
SP-2 I.E.=	1122.25'

SSMH-2	TYPE-I MH
STA.10+99.46,	140.04' RT.
LID EL=	1135.30'
SP-2 I.E.=	1128.28'
SP-3 I.E.=	1128.70'

F.F.=1138.79'

EAGLECREST LODGE

F.F.=1138.85'

SANITARY SEWER PIPE SUMMARY				
PIPE	DIA.	LENGTH	TYPE	SLOPE
SP-1	6"	38'	PVC	2.66%
SP-2	6"	33'	PVC	18.27%
SP-3	6"	86'	PVC	5.00%

NOTE: PIPE LENGTHS AND SLOPES ARE MEASURED AND CALCULATED FROM CENTER TO CENTER OF STRUCTURES, UON.

SAW CUT LIMITS

ROCK RETAINING WALL

CONCRETE PAD FOR UNDERGROUND OIL TANK

12" PINE
12" PINE
10" SPRUCE
12" PINE
6" HEMLOCK
12" PINE

SSMH-1
SSMH-2

CONNECT SP-1 TO EXIST. MANHOLE, RECONSTRUCT MANHOLE INVERT TO ACCOMMODATE NEW PIPE. SP-1 I.E.=1120.82'. FIELD VERIFY PRIOR TO CONSTRUCTION

EXISTING SSMH
LID EL.=1125.58'
WEST I.E.=1120.82'
EAST I.E.=1120.71'

8"PVC
8"PVC
24"CMP
I.E.=1121.91'(C)

EXISTING CATCH BASIN
AVG. GRATE EL.=1128.68'
WEST I.E.=1124.05'
NORTH I.E.=1123.99'
EAST I.E.=1123.85'

EXISTING CATCH BASIN
AVG. GRATE EL.=1126.90'
WEST I.E.=1120.82'
NORTH I.E.=1120.84'
EAST I.E.=1120.57'

18"CPP
24"CPP
18"CPP
I.E.=1123.29'

LOCATION OF PIPE SIZE CHANGE UNKNOWN

LOCATION OF PIPE SIZE CHANGE UNKNOWN

12"CPP

STA.12+45.8, 129.8' RT
P-1 I.E. = 1132.75'
INSTALL CONCRETE HEADWALL WITH TRASH RACK PER DETAIL 5/C400

S-1	CB TYPE-III*
STA 12+10.80,	130.22' RT
GRATE EL=	1133.85'
P-1 IE=	1131.85'
EXIST. 12" CPP IE=	1131.77'
SUMP=	16" MIN.
* W/ CONCRETE AREA DRAIN	

S-2	CB TYPE-IV*
STA 11+28.75,	82.50' RT
GRATE EL=	1136.48'
FD IE=	1134.10'
P-2 IE=	1133.10'
P-4 IE=	1134.10'
SUMP=	16" MIN.
* W/ CONCRETE AREA DRAIN	

S-3	SDMH TYPE-I
STA 11+13.72,	108.50' RT
GRATE EL=	1137.50'
EXIST. 18" IN IE=	1132.50'
P-2 IE=	1132.50'
P-3 IE=	1133.10'
EXIST. 18" OUT IE=	1132.40'
SUMP=	16" MIN.

STORM DRAIN PIPE SUMMARY				
PIPE	DIA.	LENGTH	TYPE	SLOPE
P-1	12"	35'	CPP	2.57%
P-2	18"	30'	CPP	2.00%
P-3	6"	60'	PVC	1.50%
P-4	6"	140'	PVC	VARIES

NOTE: PIPE LENGTHS AND SLOPES ARE MEASURED AND CALCULATED FROM CENTER TO CENTER OF STRUCTURES, UON.

GRAPHIC SCALE
0' 5' 10' 20' 40'
CONTOUR INTERVAL = 1'

Jensen Yorba Lott Inc.
522 West 10th Street
Juneau, Alaska 99801
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fax 907-586-3959
jensenyorbalott.com

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6205 GLACIER HIGHWAY
JUNEAU, AK. 99801
Phone 907-780-6060
Fax 907-780-4611
rmengineering@rmjuneau.com

STATE OF ALASKA
KAREN A. PUUSTINEN
CE 12474
PROFESSIONAL ENGINEER
10-28-13

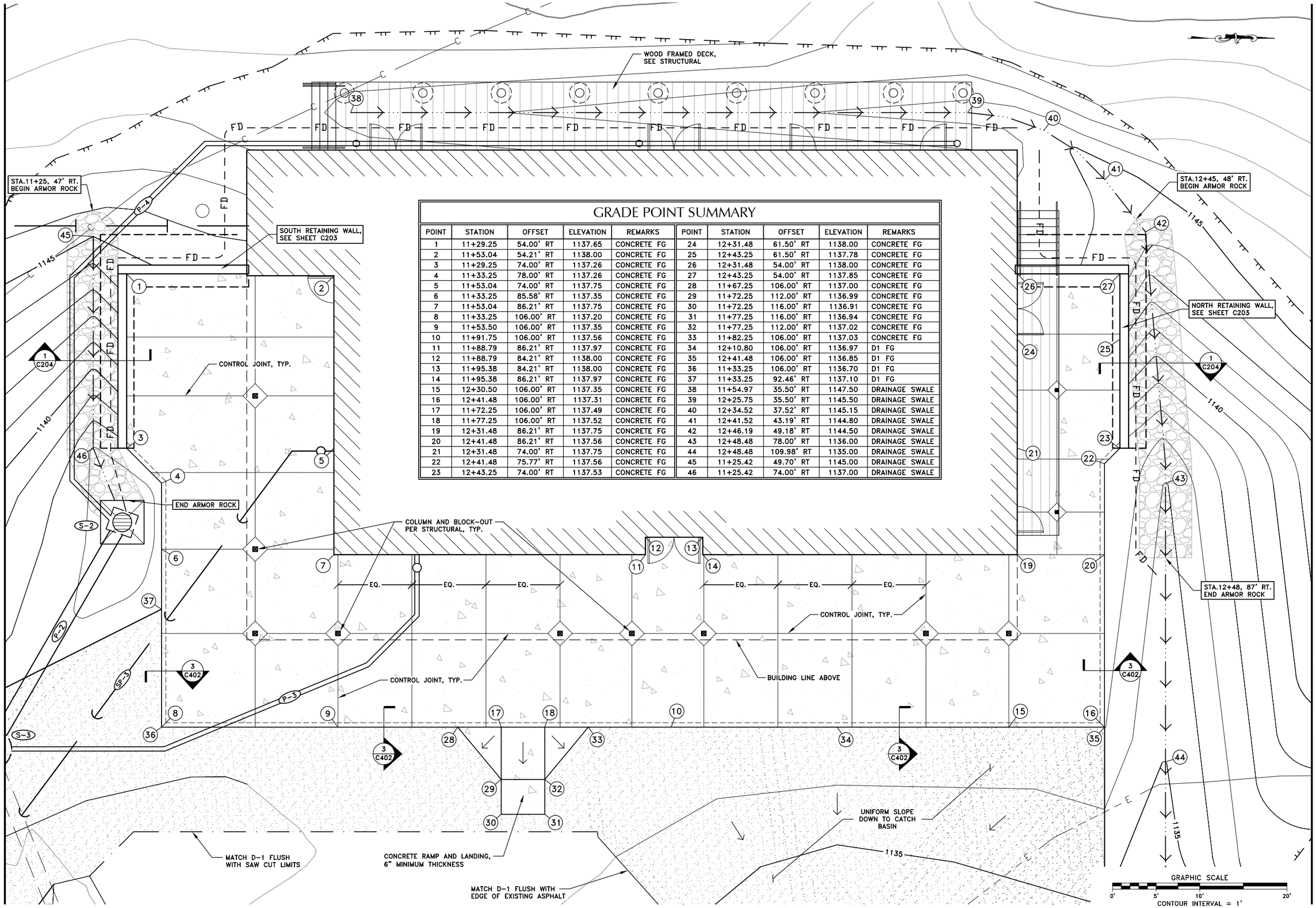
CITY & BOROUGH OF JUNEAU
EAGLECREST LEARNING CENTER
CBJ CONTRACT No. E014-076

REVISIONS

SHEET TITLE
OVERALL SITE & UTILITY PLAN

DATE: October 28, 2013
FILE: 13031

C200



GRADE POINT SUMMARY

POINT	STATION	OFFSET	ELEVATION	REMARKS	POINT	STATION	OFFSET	ELEVATION	REMARKS
1	11+29.25	54.00' RT	1137.65	CONCRETE FG	24	12+31.48	61.50' RT	1138.00	CONCRETE FG
2	11+53.04	54.21' RT	1138.00	CONCRETE FG	25	12+43.25	61.50' RT	1137.78	CONCRETE FG
3	11+29.25	74.00' RT	1137.26	CONCRETE FG	26	12+31.48	54.00' RT	1138.00	CONCRETE FG
4	11+33.25	78.00' RT	1137.26	CONCRETE FG	27	12+43.25	54.00' RT	1137.85	CONCRETE FG
5	11+53.04	74.00' RT	1137.75	CONCRETE FG	28	11+67.25	106.00' RT	1137.00	CONCRETE FG
6	11+33.25	85.58' RT	1137.35	CONCRETE FG	29	11+72.25	112.00' RT	1136.99	CONCRETE FG
7	11+53.04	86.21' RT	1137.75	CONCRETE FG	30	11+72.25	116.00' RT	1136.91	CONCRETE FG
8	11+33.25	106.00' RT	1137.20	CONCRETE FG	31	11+77.25	116.00' RT	1136.94	CONCRETE FG
9	11+53.50	106.00' RT	1137.35	CONCRETE FG	32	11+77.25	112.00' RT	1137.02	CONCRETE FG
10	11+91.75	106.00' RT	1137.56	CONCRETE FG	33	11+82.25	106.00' RT	1137.03	CONCRETE FG
11	11+88.79	86.21' RT	1137.97	CONCRETE FG	34	12+10.80	106.00' RT	1136.97	D1 FG
12	11+88.79	84.21' RT	1138.00	CONCRETE FG	35	12+41.48	106.00' RT	1136.85	D1 FG
13	11+95.38	84.21' RT	1138.00	CONCRETE FG	36	11+33.25	106.00' RT	1136.70	D1 FG
14	11+95.38	86.21' RT	1137.97	CONCRETE FG	37	11+33.25	92.46' RT	1137.10	D1 FG
15	12+30.50	106.00' RT	1137.35	CONCRETE FG	38	11+54.97	35.50' RT	1147.50	DRAINAGE SWALE
16	12+41.48	106.00' RT	1137.31	CONCRETE FG	39	12+25.75	35.50' RT	1145.50	DRAINAGE SWALE
17	11+72.25	106.00' RT	1137.49	CONCRETE FG	40	12+34.52	37.52' RT	1145.15	DRAINAGE SWALE
18	11+77.25	106.00' RT	1137.52	CONCRETE FG	41	12+41.52	43.19' RT	1144.80	DRAINAGE SWALE
19	12+31.48	86.21' RT	1137.75	CONCRETE FG	42	12+46.19	49.18' RT	1144.50	DRAINAGE SWALE
20	12+41.48	86.21' RT	1137.56	CONCRETE FG	43	12+48.48	78.00' RT	1136.00	DRAINAGE SWALE
21	12+31.48	74.00' RT	1137.75	CONCRETE FG	44	12+48.48	109.98' RT	1135.00	DRAINAGE SWALE
22	12+41.48	75.77' RT	1137.56	CONCRETE FG	45	11+25.42	49.70' RT	1145.00	DRAINAGE SWALE
23	12+43.25	74.00' RT	1137.53	CONCRETE FG	46	11+25.42	74.00' RT	1137.00	DRAINAGE SWALE

GRAPHIC SCALE
0' 5' 10' 20'
CONTOUR INTERVAL = 1'

Jensen Yorba Lott Inc.
522 West 10th Street
Juneau, Alaska 99801
phone 907-586-1070
fax 907-586-3959
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R & M ENGINEERING, INC.
6205 GLACIER HIGHWAY
JUNEAU, AK. 99801
Phone 907-780-6060
Fax 907-780-4611
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STATE OF ALASKA 49TH — Karen A. Puustinen CE 12474 — PROFESSIONAL ENGINEER — 10-28-13

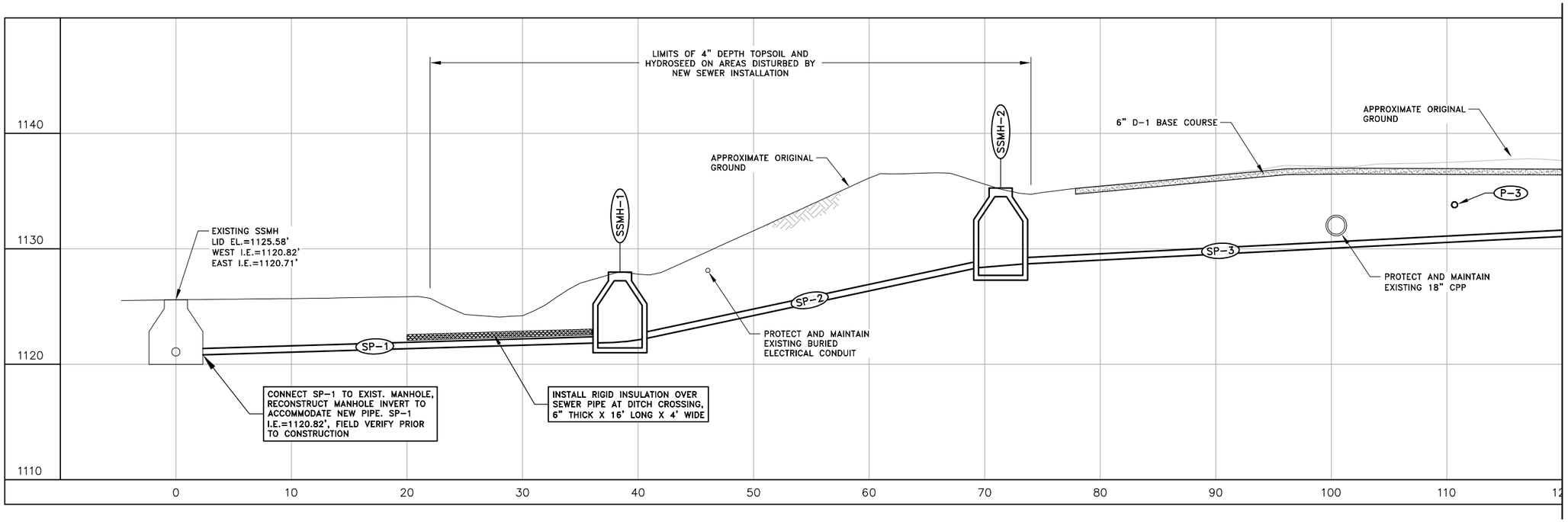
CITY & BOROUGH OF JUNEAU
EAGLECREST LEARNING CENTER
CBJ CONTRACT No. E014-076

REVISIONS

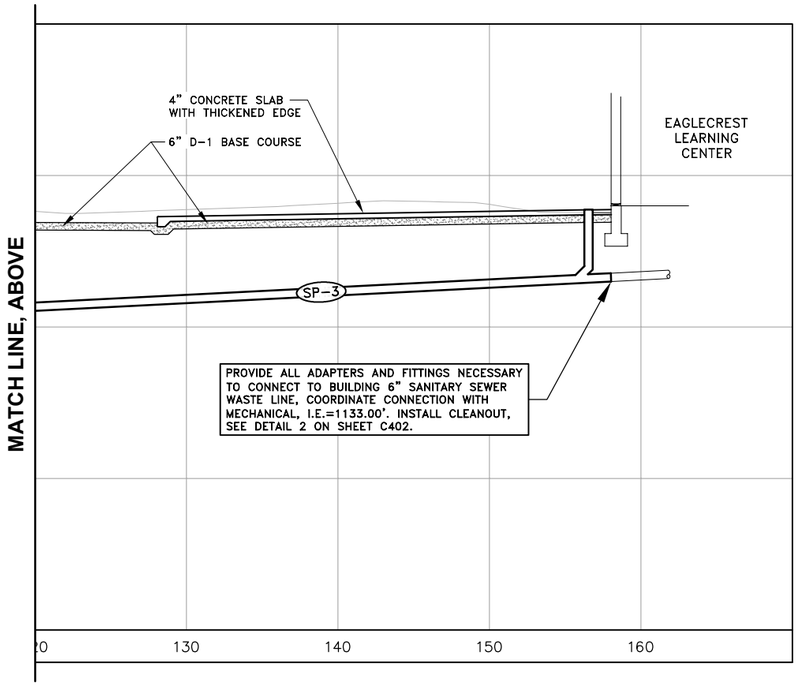
SHEET TITLE
SITE GRADING PLAN

DATE: October 28, 2013
FILE: 13031

C201



MATCH LINE, BELOW



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STA.10+72.93,	159.58' RT.
LID EL=	1128.00'
SP-1 I.E.=	1121.83'
SP-2 I.E.=	1122.25'

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STA.10+99.46,	140.04' RT.
LID EL=	1135.30'
SP-2 I.E.=	1128.28'
SP-3 I.E.=	1128.70'

SANITARY SEWER PIPE SUMMARY

PIPE	DIA.	LENGTH	TYPE	SLOPE
SP-1	6"	38'	PVC	2.66%
SP-2	6"	33'	PVC	18.27%
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NOTE: PIPE LENGTHS AND SLOPES ARE MEASURED AND CALCULATED FROM CENTER TO CENTER OF STRUCTURES, UON.

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6205 GLACIER HIGHWAY
JUNEAU, AK. 99801
Phone 907-780-6060
Fax 907-780-4611
rmengineering@rmjuneau.com

STATE OF ALASKA 19TH Karen A. Puustinen CE 12474 PROFESSIONAL ENGINEER 10-28-13

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EAGLECREST LEARNING CENTER
CBJ CONTRACT No. E014-076

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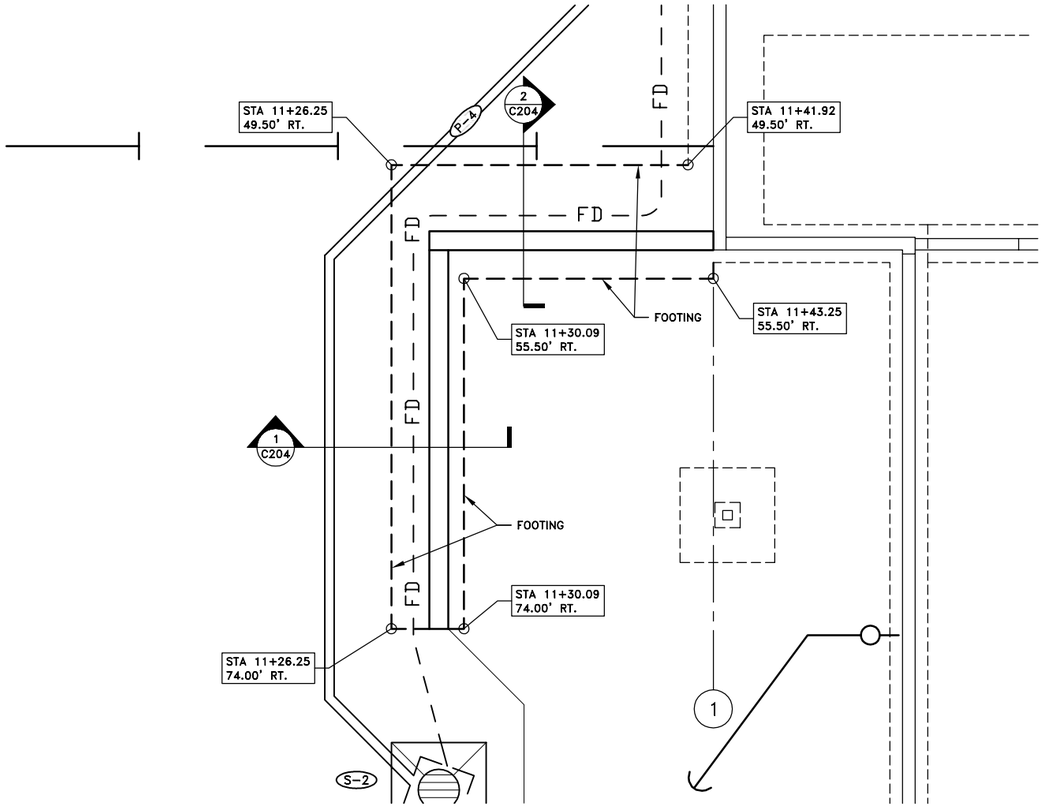
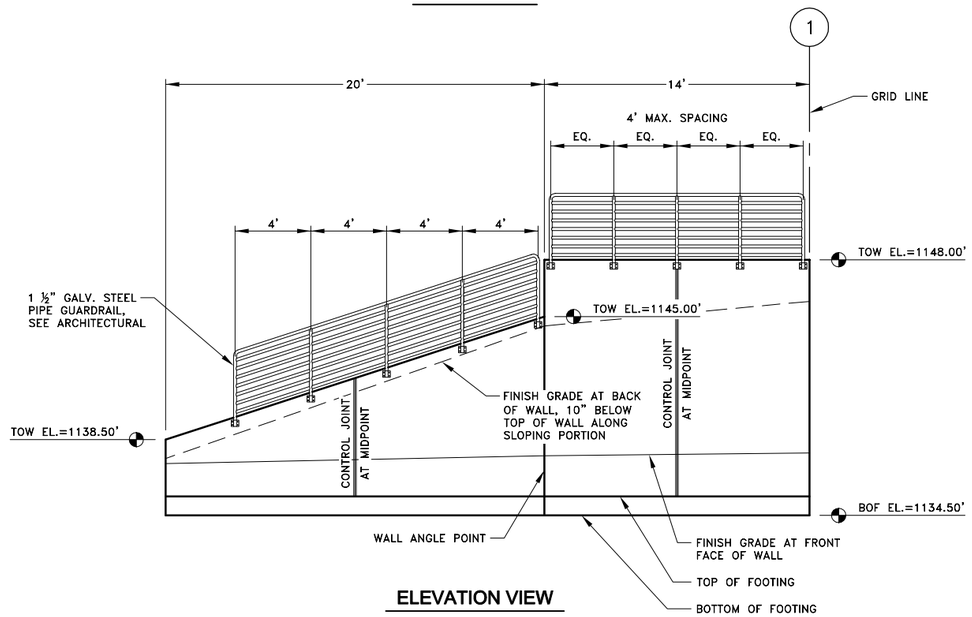
SHEET TITLE
SANITARY SEWER PROFILE

DATE: October 28, 2013
FILE: 13031

C202

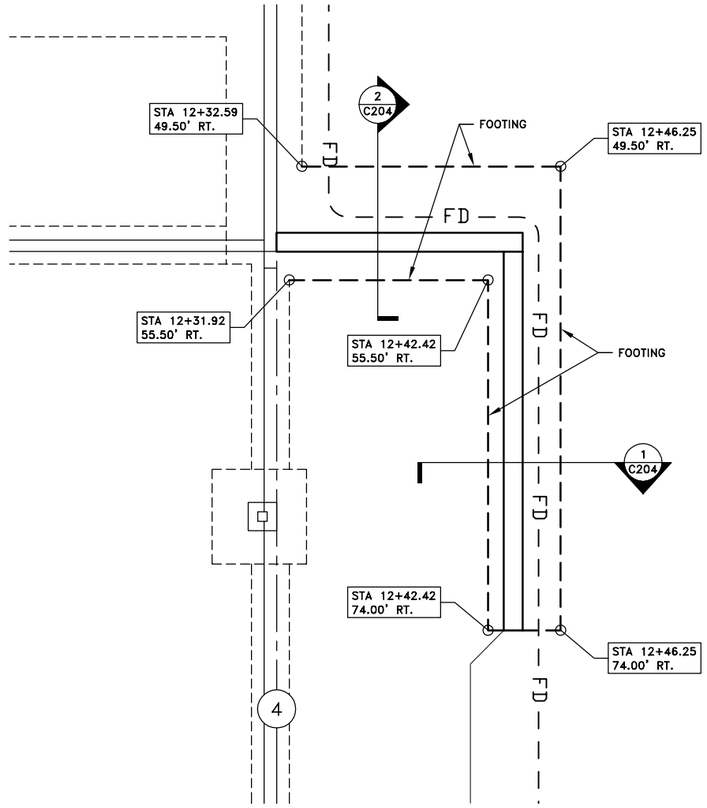


PLAN VIEW

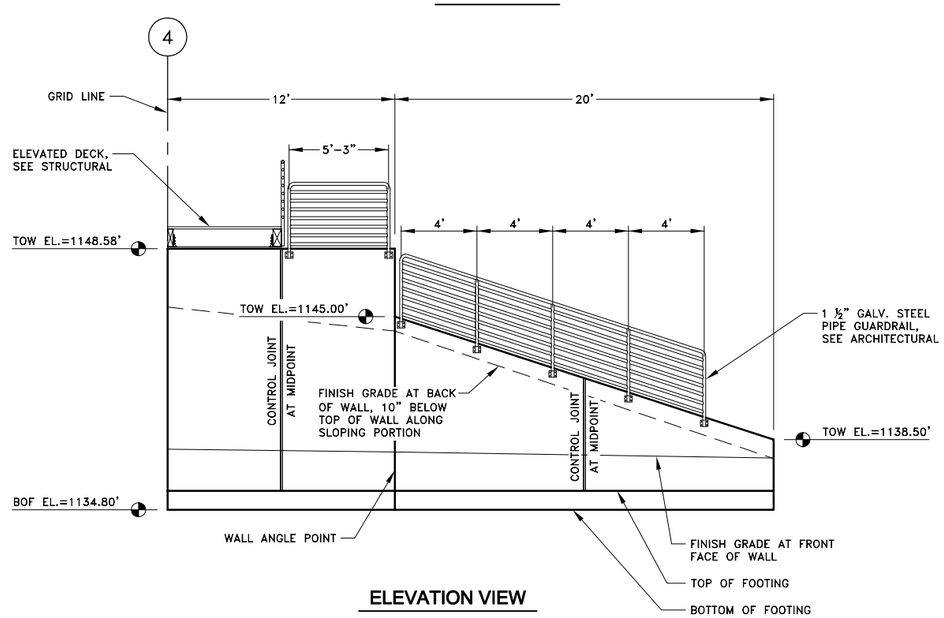


ELEVATION VIEW

1 SOUTH RETAINING WALL



PLAN VIEW



ELEVATION VIEW

2 NORTH RETAINING WALL

Jensen Yorba Lott Inc.
522 West 10th Street
Juneau, Alaska 99801
phone 907-586-1070
fax 907-586-3959
jensenyorbalott.com

R & M ENGINEERING, INC.
6205 GLACIER HIGHWAY
JUNEAU, AK. 99801
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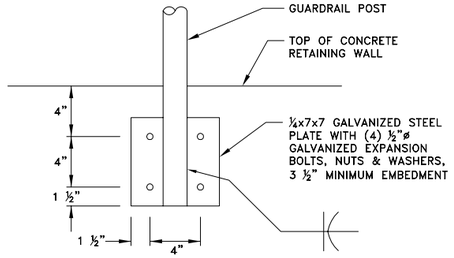
SHEET TITLE
RETAINING WALL DETAILS

DATE: October 28, 2013
FILE: 13031

C203

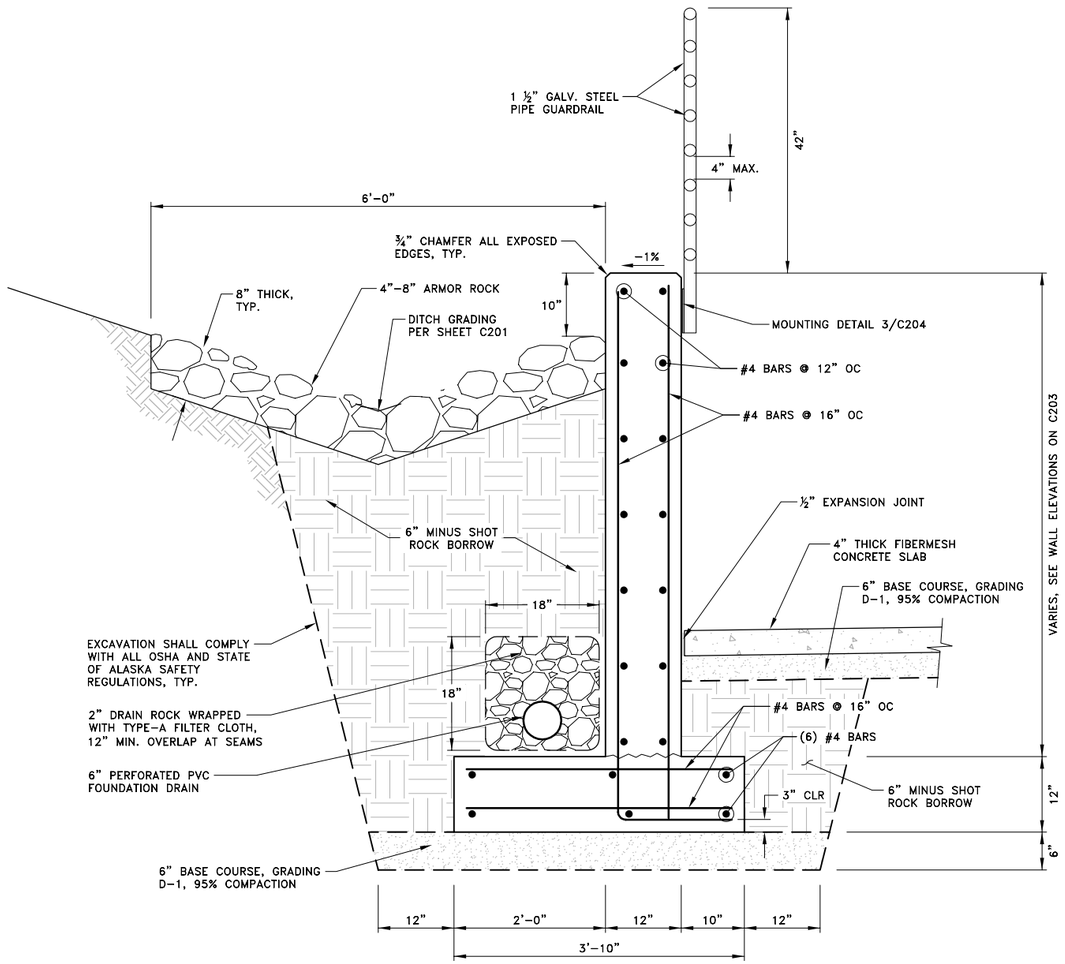
RETAINING WALL NOTES:

1. PAINT BACKFILLED WALL SURFACES WITH TWO COATS OF COLD BITUMINOUS WATERPROOF COATING.
2. APPLY "CONCRETE INTERNATIONAL CORPORATION" ASHFORD FORMULA, OR APPROVED EQUAL TO ALL EXPOSED WALL SURFACES.
3. PROVIDE 2" CLEARANCE ON ALL REINFORCING STEEL UNLESS OTHERWISE NOTED.



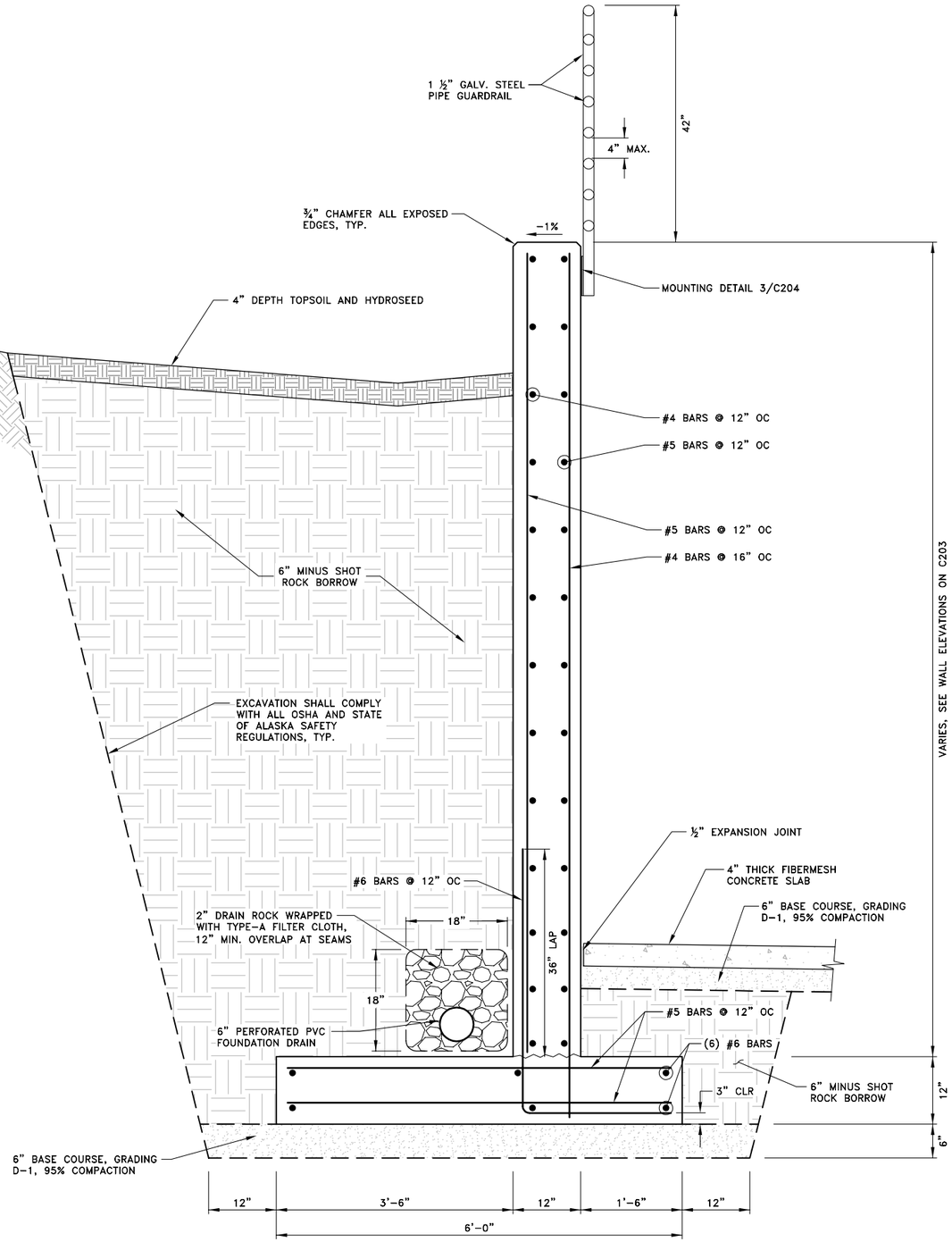
3 GUARDRAIL MOUNTING DETAIL

N.T.S.



1 RETAINING WALL SECTION

N.T.S.



2 RETAINING WALL SECTION

N.T.S.

Jensen Yorba Lott Inc.
522 West 10th Street
Juneau, Alaska 99801
phone 907-586-1070
fax 907-586-3959
jensenyorbalott.com

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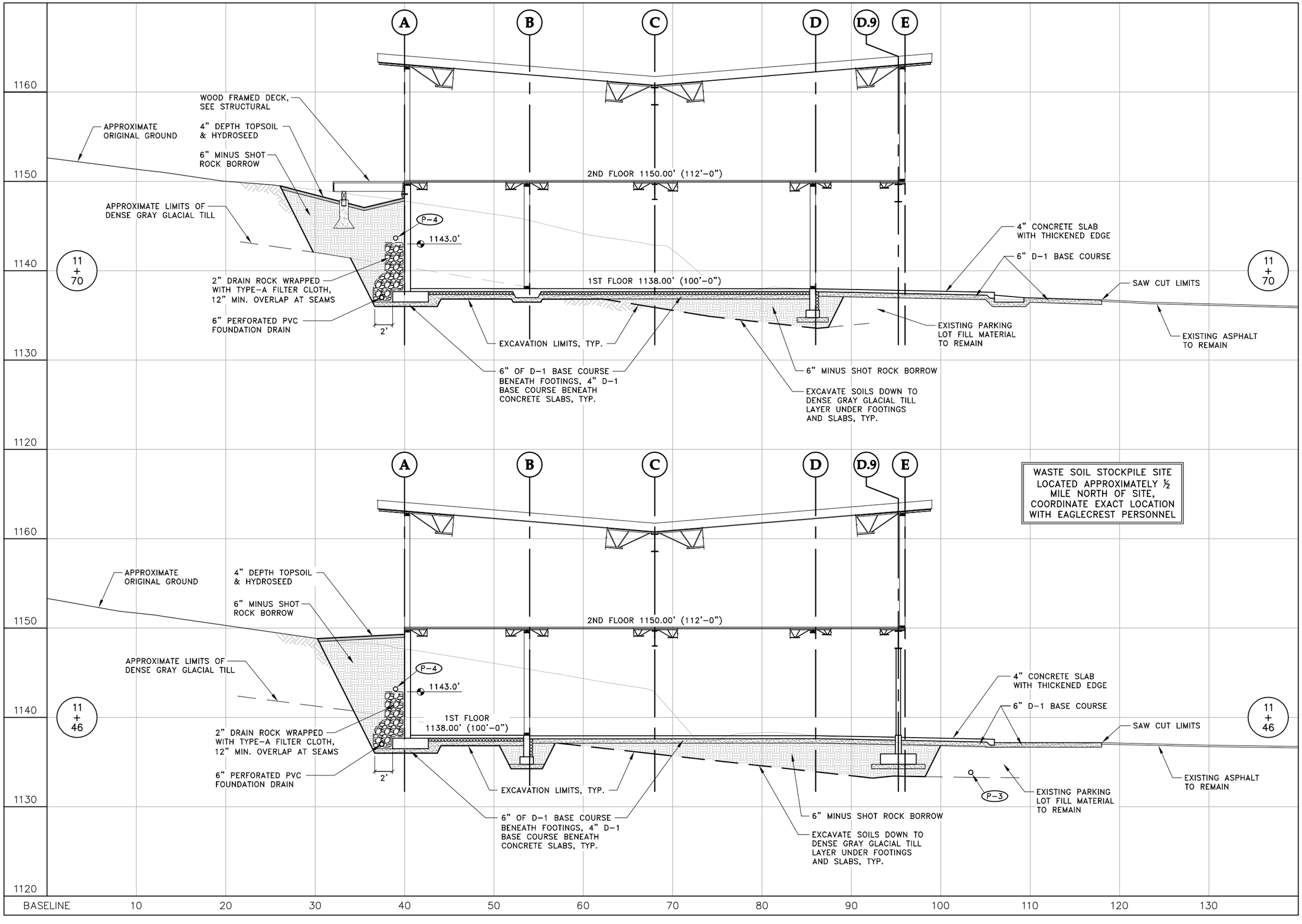
REVISIONS

SHEET TITLE
RETAINING WALL DETAILS

DATE: October 28, 2013
FILE: 13031

C204



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Juneau, Alaska 99801
phone 907-586-1070
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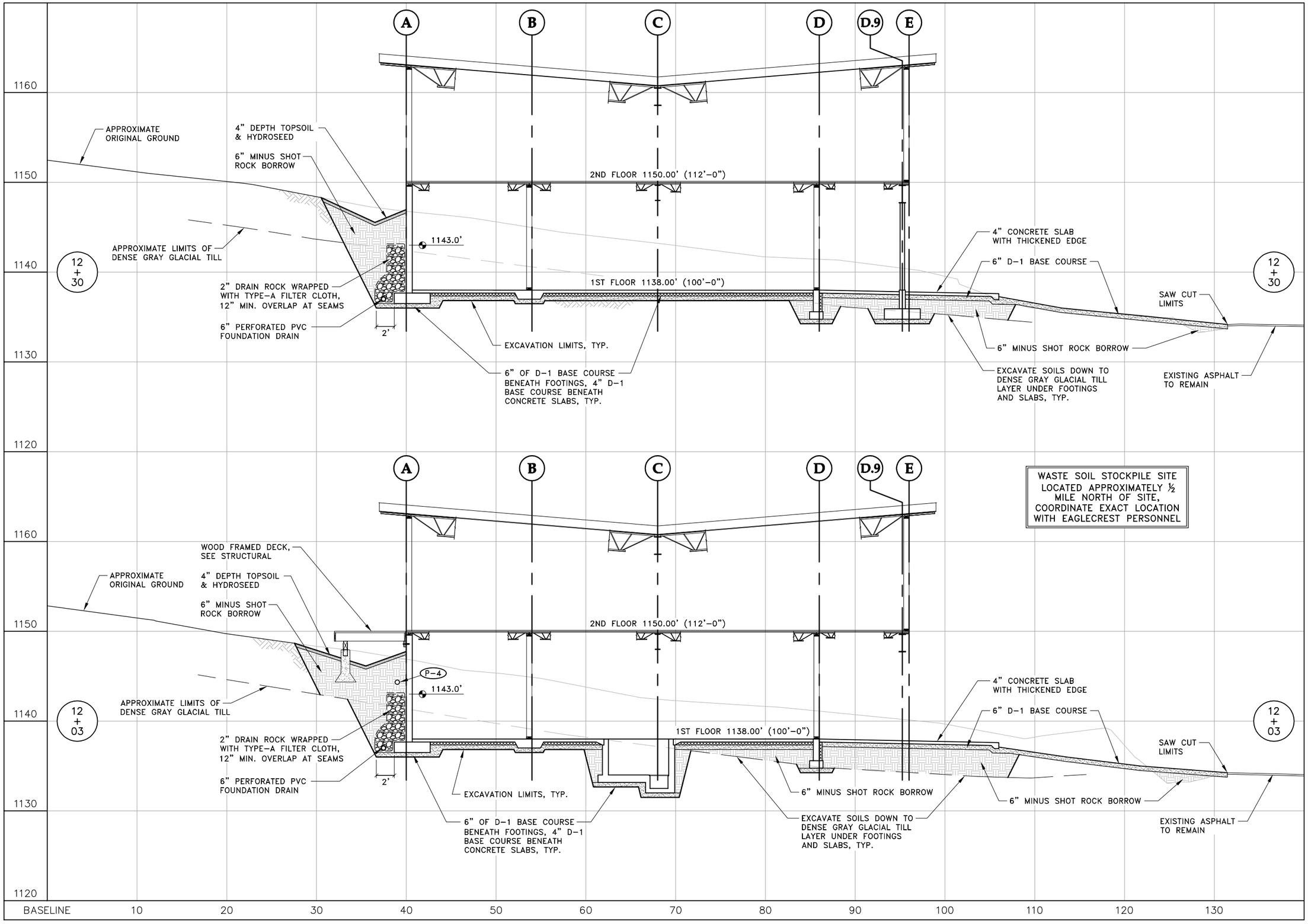
SHEET TITLE
CROSS SECTIONS

DATE: October 28, 2013
FILE: 13031

C300



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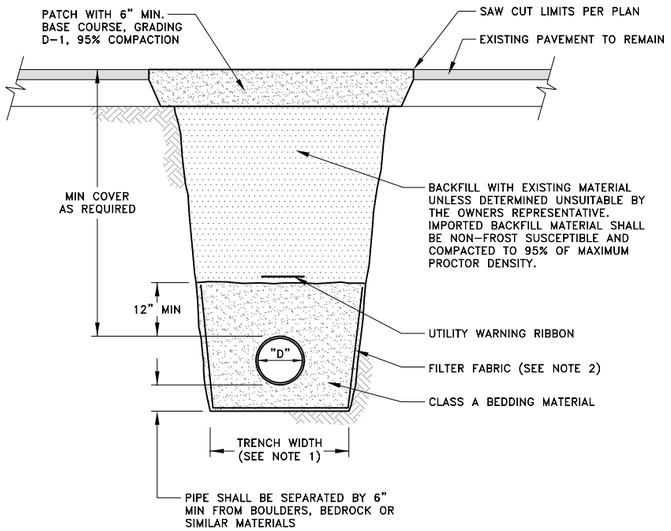
REVISIONS

SHEET TITLE
CROSS SECTIONS

DATE: **October 28, 2013**
FILE: **13031**

C301

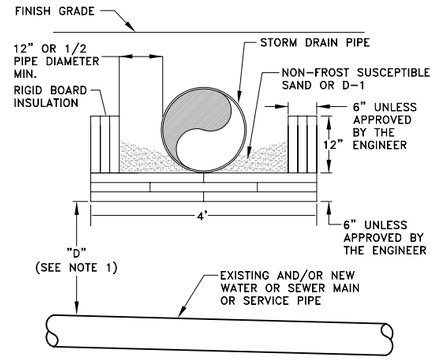


NOTES:

1. MINIMUM TRENCH WIDTH SHALL BE NOMINAL PIPE DIAMETER ("D") PLUS 2'.
2. FILTER FABRIC SHALL BE USED AS DIRECTED BY THE ENGINEER. ATTACH TO TRENCH SIDEWALL A MINIMUM OF 12" ABOVE TOP OF PIPE.
3. BEDDING AND BACKFILL SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY AND THROUGHOUT THE DEPTH OF EACH LIFT. EXISTING MATERIAL FROM THE TRENCH SHALL BE USED UNLESS DETERMINED UNSUITABLE BY THE ENGINEER. LIFT DEPTH SHALL BE 12" MAXIMUM. ADDITIONAL DEPTH UP TO 18" MAXIMUM MAY BE APPROVED BY THE ENGINEER.

1 TYPICAL PIPE TRENCH DETAIL

N.T.S.

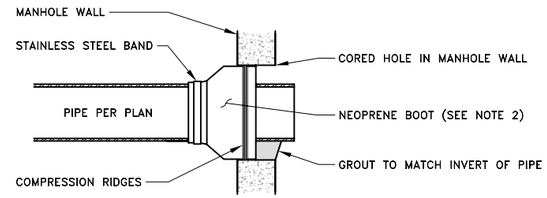


NOTES:

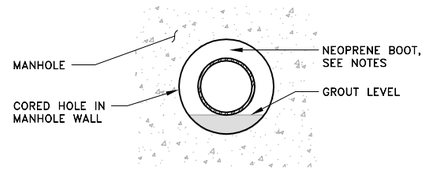
1. INSTALL INSULATION AS SHOWN WHEN "D" IS LESS THAN 5'-0" FOR WATER PIPE OR 3'-8" FOR SEWER PIPE.
2. INSULATION SHALL CONFORM TO SECTION 221116 OF THE SPECIFICATIONS.
3. PIPE INSULATION SHALL BE 8'-0" IN LENGTH, CENTERED OVER EXISTING WATER OR SEWER PIPE.
4. PIPE INSULATION WITH R-FACTOR EQUAL TO RIGID BOARD MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.
5. INSULATION BOARDS SHALL OVERLAP 12" AS SHOWN IN DRAWING.

2 RIGID INSULATION DETAIL

N.T.S.



FLEXIBLE SEAL ADAPTER



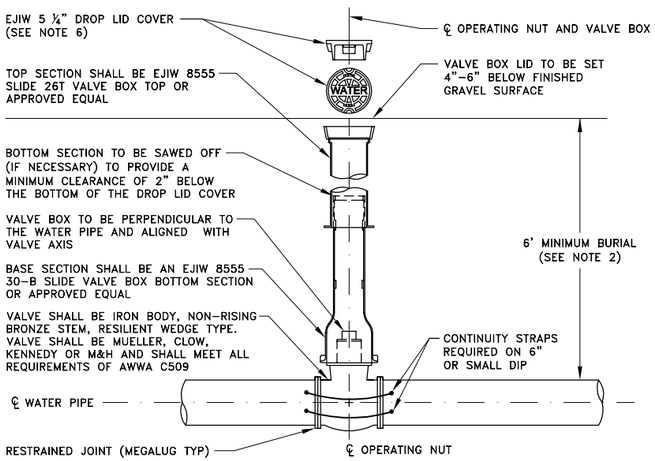
GROUT DETAIL

NOTES:

1. ALL MANHOLE CONNECTIONS SHALL BE 100% WATERTIGHT.
2. 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.
3. ALL PIPE SHALL EXTEND 2" INTO MANHOLE.

3 SANITARY SEWER MANHOLE CONNECTION

N.T.S.

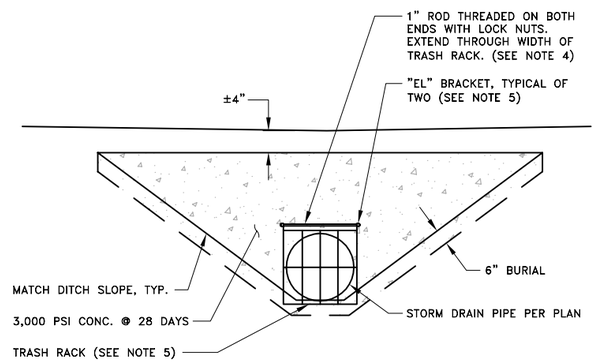


NOTES:

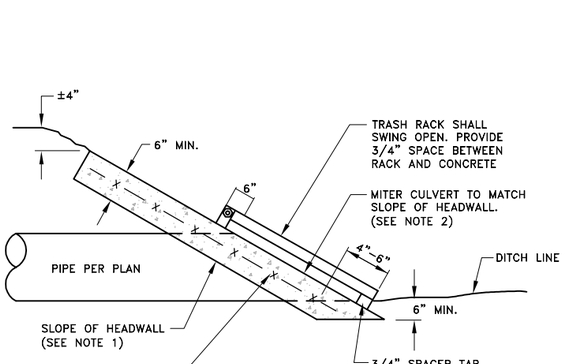
1. MAINLINE VALVES REQUIRE THRUST BLOCKS PER DETAIL ON THIS SHEET.
2. IF WATER MAIN IS MORE THAN 6' DEEP, USE 4" ID CAST IRON SOIL PIPE WITH TOP SECTION EJIW 8555 SLIDE (26T OR 16T) VALVE BOX.
3. THIS DETAIL APPLIES TO ALL MAINLINE VALVES AND WATER VALVES 4" IN DIAMETER OR GREATER.
4. VALVE BOXES ARE TO BE RAISED DURING PAVING OPERATIONS A MINIMUM OF ⅜", MAXIMUM OF ⅝" BELOW FINISHED PAVEMENT. VALVE BOXES THAT DO NOT MEET GRADE SPECIFICATIONS SHALL BE SAW CUT, RAISED TO GRADE WITH 4" AC PAVEMENT (NO CONCRETE).
5. NO MORE THAN (1) VALVE BOX PAVING RISER IS ALLOWED PER VALVE.
6. VALVE BOX COVER SHALL BE 5 ¼" DROP LID TYPE WITH 1" RAISED LETTERING (RECESSED FLUSH) AND (2) CLOSED PICK HOLES.

4 MAINLINE VALVE DETAIL

N.T.S.



END VIEW



SECTION VIEW

NOTES:

1. SLOPE OF HEADWALL SHALL BE 2:1 OR FLATTER.
2. EMPTY WATER FROM CORRUGATIONS ON MITERED ENDS AND THEN COMPLETELY FILL VOIDS WITH CONCRETE GROUT.
3. FIBER MESH MAY BE SUBSTITUTED FOR WELDED WIRE MESH.
4. INSTALL "EL" BRACKETS A MINIMUM OF 2" INTO WET CONCRETE
5. TRASH RACK GRATE, "EL" AND THREADED ROD STEEL SHALL BE CONSTRUCTED OF FLAT BARS OF EITHER 6061 ALUMINUM OR HOT DIPPED GALVANIZED STEEL

5 CONCRETE HEADWALL DETAIL

N.T.S.

Jensen Yorba Lott Inc.
522 West 10th Street
Juneau, Alaska 99801
phone 907-586-1070
fax 907-586-3959
jensenyorbalott.com

R & M ENGINEERING, INC.
6205 GLACIER HIGHWAY
JUNEAU, AK. 99801
Phone 907-780-6060
Fax 907-780-4611
rmengineering@rmjuneau.com

STATE OF ALASKA 49TH — Karen A. Puustinen — CE 12474 — REGISTERED PROFESSIONAL ENGINEER — 10-28-13

CITY & BOROUGH OF JUNEAU
EAGLECREST LEARNING CENTER
CBJ CONTRACT No. E014-076

REVISIONS

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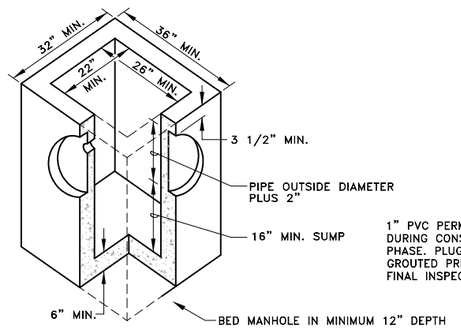
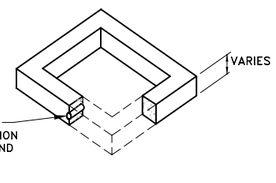


CATCH BASIN



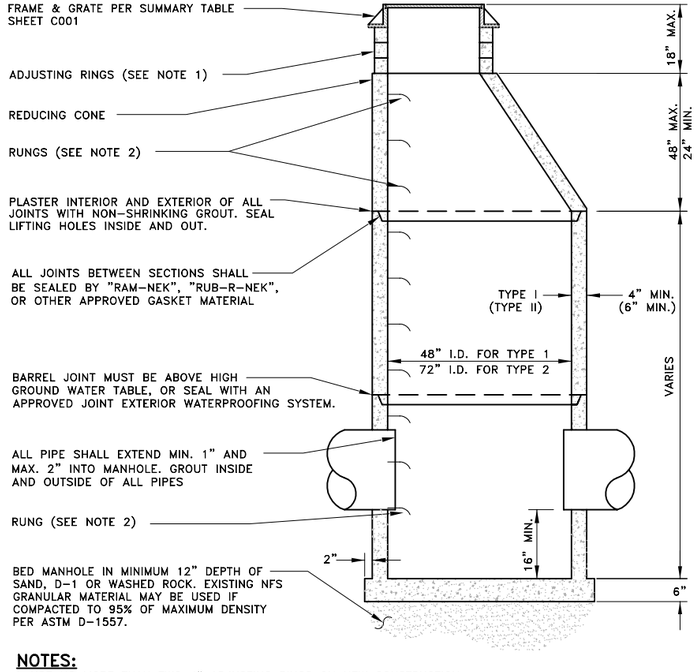
CONCRETE ADJUSTING RING

NOTES:

1. ALL JOINTS BETWEEN SECTIONS AND BETWEEN FRAME AND CONCRETE SECTIONS SHALL BE GROUTED INSIDE AND OUTSIDE.
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.
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 MUST 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. NO BRICKS, WOOD OR OTHER MATERIALS PERMITTED FOR ADJUSTING GRADE, SOLID RISER OR FORMED AND FILLED WITH CONCRETE.

1 CATCH BASIN TYPE-III

N.T.S.

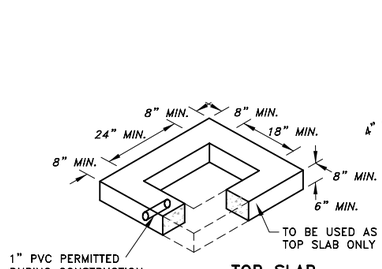


NOTES:

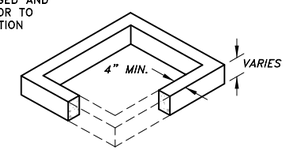
1. USE NO MORE THAN TWO 4" ADJUSTING RINGS ON NEW CONSTRUCTION.
2. RUNGS TO BE PLACED 12" O.C. ON UNOBSTRUCTED SIDE OF MANHOLE. LAST RUNG SHALL BE 18" MAX. FROM BOTTOM OF MANHOLE, AND TOP RUNG SHALL BE 6" MAXIMUM FROM TOP OF CONE. IF UNOBSTRUCTED SIDE NOT AVAILABLE, LAST RUNG SHALL BE PLACED 6" OVER SMALLEST PIPE. RUNGS SHALL BE POLYETHYLENE 14" LADDER STEPS.
3. REFER TO A.S.T.M. C-478 FOR DESIGN REQUIREMENTS AND C-478-69 FOR MINIMUM STEEL FOR BARREL. BARREL SHALL BE IMBEDDED IN BASE SO THAT FIRST BARREL SECTION IS CONNECTED WITH BASE.
4. BLOCK OUTS MUST BE FORMED.

4 STORM DRAIN MANHOLE

N.T.S.



TOP SLAB



CONCRETE ADJUSTING RING

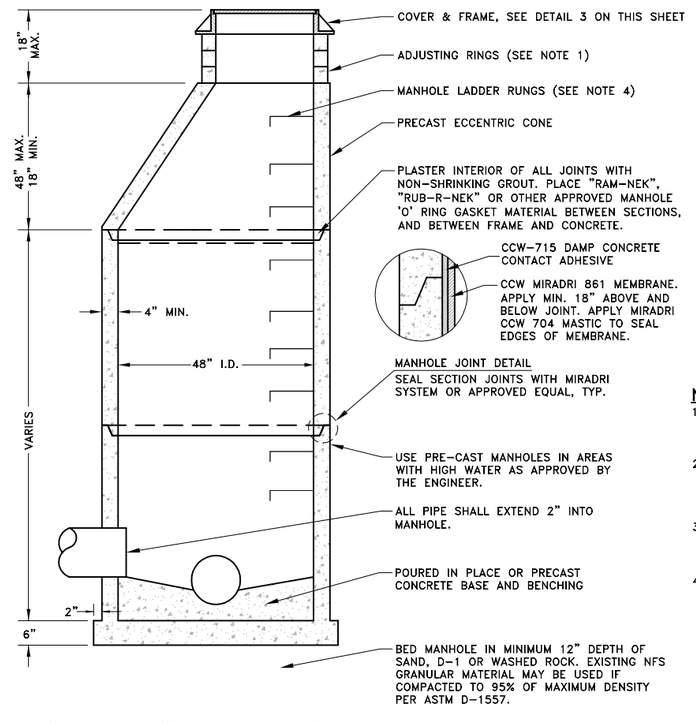
CATCH BASIN

NOTES:

1. ALL JOINTS BETWEEN SECTIONS AND BETWEEN FRAME AND CONCRETE SECTIONS SHALL BE GROUTED INSIDE AND OUTSIDE.
2. ENTIRE KNOCKOUT IS TO BE REMOVED AND SEALED SHUT AROUND PIPE. ALL PIPES ARE TO EXTEND MIN. 1" AND MAX. 2" INTO 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 MUST 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 REQUIRED AS PER ASTM C-478-69.
6. MINIMUM SUMP DEPTH SHALL BE 16".
7. ADJUSTING RING SHALL BE THE SAME SIZE AS THE CATCH BASIN.
8. NO BRICKS, WOOD OR OTHER MATERIALS PERMITTED FOR ADJUSTING GRADE, SOLID RISER OR FORMED AND FILLED WITH CONCRETE.

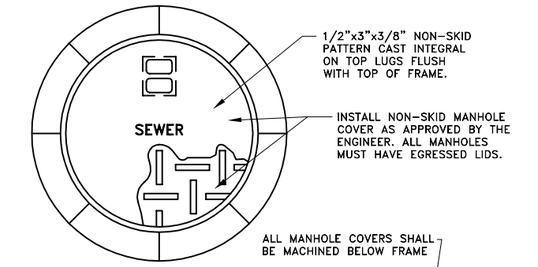
2 CATCH BASIN TYPE-IV

N.T.S.

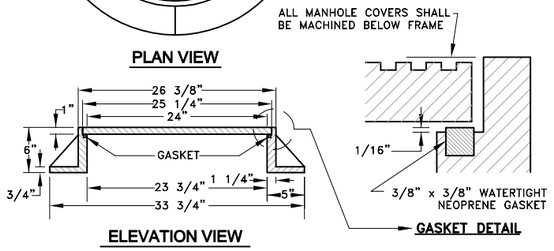


5 SANITARY SEWER MANHOLE DETAIL

N.T.S.



PLAN VIEW



ELEVATION VIEW

NOTES:

1. FRAME MUST BE MACHINED TO FIT WATERTIGHT NEOPRENE GASKET.
2. COVER SHALL BE WATER TIGHT WITH NO HOLES, SHALL HAVE THE WORD "SEWER" CAST IN AND SHALL BE PROVIDED WITH AN INTEGRAL POCKET LIFT HANDLE.
3. FRAME AND COVER DIMENSIONS SHALL BE IN ACCORDANCE WITH OLYMPIC CONSTRUCTION CASTINGS No. MH30A, WITH EGRESSED LID, OR AN APPROVED EQUAL.
4. FRAME AND GRATE SHALL BE DUCTILE IRON.
5. FRAME AND GRATE SHALL BE OF A TYPE THAT WILL NOT CREATE A HAZARD FOR BICYCLE TRAFFIC.

3 SANITARY SEWER MANHOLE COVER & FRAME

N.T.S.

NOTES:

1. USE NO MORE THAN ONE 4" ADJUSTING RING FOR NEW CONSTRUCTION ON UNPAVED ROADS, AND NO MORE THAN THREE 4" RINGS ON RECONSTRUCTIONS.
2. REFER TO A.S.T.M. C-478 FOR DESIGN REQUIREMENTS AND C-478-69 FOR MINIMUM STEEL FOR BARREL. FIRST BARREL SECTION SHALL BE IMBEDDED IN BASE. BLOCK OUTS SHALL BE FORMED.
3. IF MANHOLE IS WITHIN A ROADWAY, COMPACTION TESTS MUST BE TAKEN ON BACKFILL EVERY 3'. DENSITY SHALL BE 95% OF MAXIMUM PROCTOR DENSITY.
4. 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" MAX. FROM TOP OF CONE. IF UNOBSTRUCTED SIDE NOT AVAILABLE, LAST RUNG TO BE PLACED 6" OVER SMALLEST PIPE. RUNGS SHALL BE POLYETHYLENE 14" LADDER STEPS.

Jensen Yorba Lott Inc.
522 West 10th Street
Juneau, Alaska 99801
phone 907-586-1070
fax 907-586-3959
jensenyorbalott.com

R & M ENGINEERING, INC.
6205 GLACIER HIGHWAY
JUNEAU, AK. 99801
Phone 907-780-6060
Fax 907-780-4611
rmengineering@rmjuneau.com



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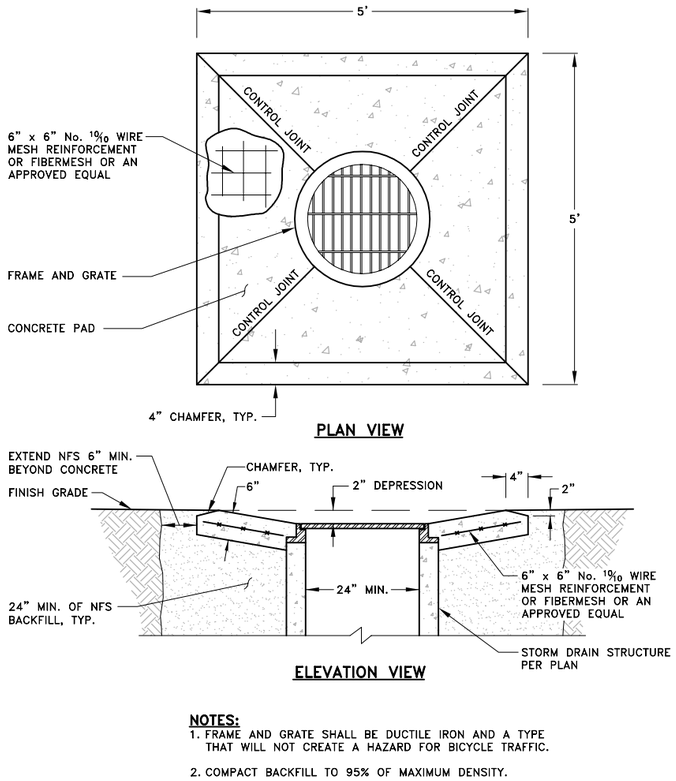
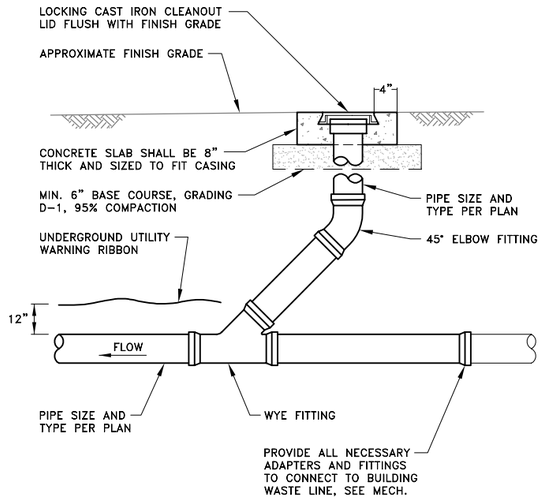
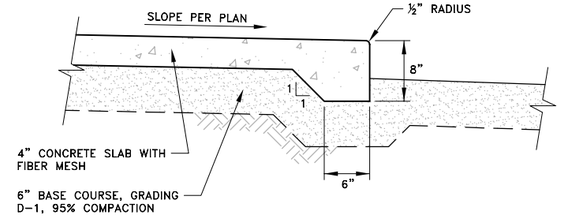


NOTES:
1. FRAME AND GRATE SHALL BE DUCTILE IRON AND A TYPE THAT WILL NOT CREATE A HAZARD FOR BICYCLE TRAFFIC.
2. COMPACT BACKFILL TO 95% OF MAXIMUM DENSITY.

1 CONCRETE AREA DRAIN DETAIL
N.T.S.



2 CLEANOUT AND CONNECTION DETAIL
N.T.S.



NOTES:
1. STEEL TROWEL FINISH REQUIRED PRIOR TO BROOM FINISHING ON ALL SURFACES.
2. CONCRETE INTERNATIONAL CORPORATION ASHFORD FORMULA OR APPROVED EQUAL SHALL BE APPLIED AS A CURING COMPOUND. APPLICATION SHALL CONFORM TO THE MANUFACTURER'S RECOMMENDATIONS.

3 THICKENED EDGE SLAB DETAIL
N.T.S.

Jensen Yorba Lott Inc.
522 West 10th Street
Juneau, Alaska 99801
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fax 907-586-3959
jensenyorbalott.com

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6205 GLACIER HIGHWAY
JUNEAU, AK. 99801
Phone 907-780-6060
Fax 907-780-4611
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STATE OF ALASKA 49TH — Karen A. Puustinen CE 12474 — PROFESSIONAL ENGINEER — 10-28-13

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