

BMP CONSTRUCTION NOTES:

(A) CONTRACTOR SHALL CONSTRUCT AND MAINTAIN A STABILIZED CONSTRUCTION ENTRANCE PER BMP 5 OF VOLUME 2 OF THE IDEQ STORMWATER BEST MANAGEMENT PRACTICES CATALOG (LATEST EDITION).

(B) CONTRACTOR TO CONSTRUCT AND MAINTAIN A CONSTRUCTION STAGING AREA IN THIS LOCATION PER BMP 2 OF VOLUME 2 OF THE IDEQ STORMWATER BEST MANAGEMENT PRACTICES CATALOG (LATEST EDITION).

(C) CONTRACTOR TO KEEP EXISTING ROAD CLEAR AND FREE FROM DIRT, MUD AND OTHER DEBRIS. ROAD SHALL BE SWEEPED AND WATERED AS REQUIRED.

(D) INSTALL SILT FENCE PER BMP 36 OF VOLUME 2 OF THE IDEQ STORMWATER BEST MANAGEMENT PRACTICES CATALOG (LATEST EDITION).

(E) CONTRACTOR TO CONSTRUCT AND MAINTAIN DESIGNATED WASHOUT FACILITY PER BMP 13 OF VOLUME 2 OF THE IDEQ STORMWATER BEST MANAGEMENT PRACTICES CATALOG (LATEST EDITION) AS SHOWN. COORDINATE LOCATION WITH ENGINEER.

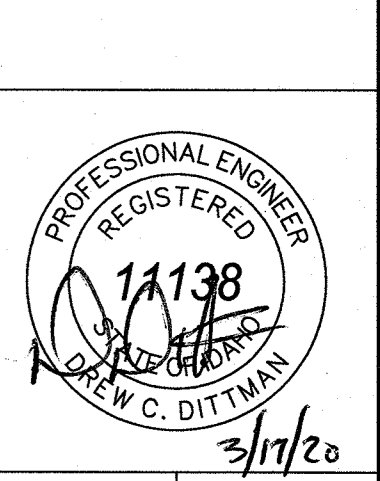
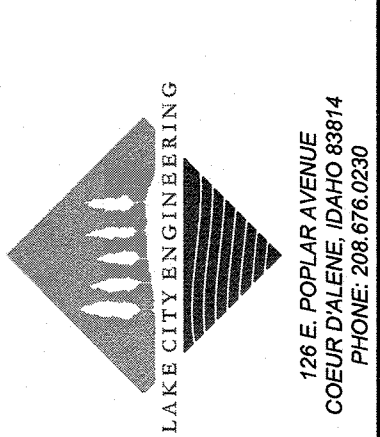
CONSTRUCTION NOTE:

(F) EXISTING SURVEY MONUMENT. RETAIN AND PROTECT. CONTRACTOR RESPONSIBLE FOR REPLACEMENT OF ANY SURVEY MONUMENTS DISTURBED OR DESTROYED DURING CONSTRUCTION.

GENERAL PROJECT & EROSION CONTROL NOTES:

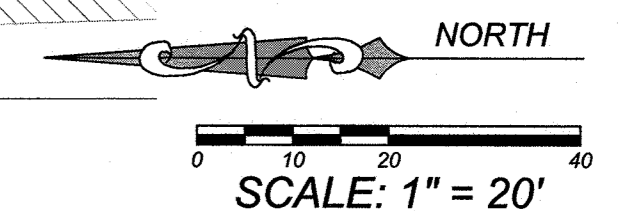
- UNLESS SPECIFIED OTHERWISE, THE CONTRACTOR SHALL FOLLOW THE CONSTRUCTION SCHEDULING AND SEQUENCING GUIDELINES PER THE REQUIREMENTS OF THE CATALOG OF STORMWATER BEST MANAGEMENT PRACTICES FOR IDAHO CITIES AND COUNTIES.
- CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PRESERVE THE EXISTING VEGETATION ALONG THE SPECIFIED PROJECT LIMITS PER REQUIREMENTS OF THE CATALOG OF STORMWATER BEST MANAGEMENT PRACTICES FOR IDAHO CITIES AND COUNTIES.
- CONTRACTOR SHALL CONFINE CLEARING LIMITS TO WITHIN THE SPECIFIED PROJECT LIMITS PER REQUIREMENTS OF THE CATALOG OF STORMWATER BEST MANAGEMENT PRACTICES FOR IDAHO CITIES AND COUNTIES.
- CONTRACTOR SHALL IMPLEMENT AND MAINTAIN A DUST CONTROL PROGRAM ON A DAILY BASIS, INCLUDING WEEKEND AND HOLIDAYS PER THE REQUIREMENTS OF THE CATALOG OF STORMWATER BEST MANAGEMENT PRACTICES FOR IDAHO CITIES AND COUNTIES.
- UNLESS OTHERWISE SPECIFIED, THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO COVER ALL ONSITE MATERIALS AND EQUIPMENT PER THE REQUIREMENTS OF THE CATALOG OF STORMWATER BEST MANAGEMENT PRACTICES FOR IDAHO CITIES AND COUNTIES.
- NO WASHOUT FACILITIES, INCLUDING CONCRETE MATERIAL WASHOUT, SHOWN WITHIN THE SPECIFIED PROJECT LIMITS. THE CONTRACTOR SHALL DIRECT ALL WASHOUT ACTIVITIES TO BE CONDUCTED WITHIN DESIGNATED WASHOUT AREAS TO BE APPROVED BY THE OWNER. WASHOUT WILL NOT BE ALLOWED WITHIN A PUBLIC RIGHT-OF-WAY.
- BASED ON THE GRADING AND BMP'S SHOWN HEREON, A SWPPP IS NOT REQUIRED AS STORMWATER GENERATED FROM THIS PROJECT SHALL NOT REACH ANY SURFACE WATERS OF THE UNITED STATES.
- AT COMPLETION OF THE PROJECT AND PER THE DIRECTION OF THE ENGINEER OF RECORD, THE CONTRACTOR SHALL REMOVE AND DISPOSE OF TEMPORARY EROSION CONTROL.
- THE CONTOURS SHOWN HEREON ARE BASED ON A FIELD TOPOGRAPHIC SURVEY PERFORMED BY LAKE CITY ENGINEERING. CONTRACTOR IS REQUIRED TO VERIFY EXISTING CONTOURS AT HIS OWN EXPENSE. CONTOURS ONLY SHOWN FOR THE LOTS TO BE DEVELOPED AS A PART OF THIS PROJECT.
- THE FOLLOWING BMP'S FROM THE IDEQ CATALOG OF STORMWATER BEST MANAGEMENT PRACTICES FOR IDAHO CITIES AND COUNTIES, VOLUME 2: EROSION AND SEDIMENT CONTROLS ARE HEREBY MADE A PART OF THIS PLAN:
 - BMP 2: STAGING AREAS
 - BMP 5: STABILIZATION OF CONSTRUCTION ENTRANCE/EXIT
 - BMP 12: WASTE MANAGEMENT
 - BMP 13: CONCRETE WASTE MANAGEMENT
 - BMP 31: INLET PROTECTION
 - BMP 36: SILT FENCE
- THE BMP'S PROPOSED HEREON ARE DESIGNED TO PREVENT AND/OR MITIGATE THE POTENTIAL FOR STORMWATER TO BE CONVEYED TO WATERWAYS OF THE UNITED STATES. THE CONTRACTOR IS REQUIRED TO FILE A NOTICE OF INTENT WITH THE EPA AND PROCESS A CONSTRUCTION GENERAL PERMIT. THE CONTRACTOR SHALL POST APPROVED SWPPP, IF REQUIRED, AND NOI DOCUMENTS ONSITE IN A PUBLICLY VISIBLE LOCATION.

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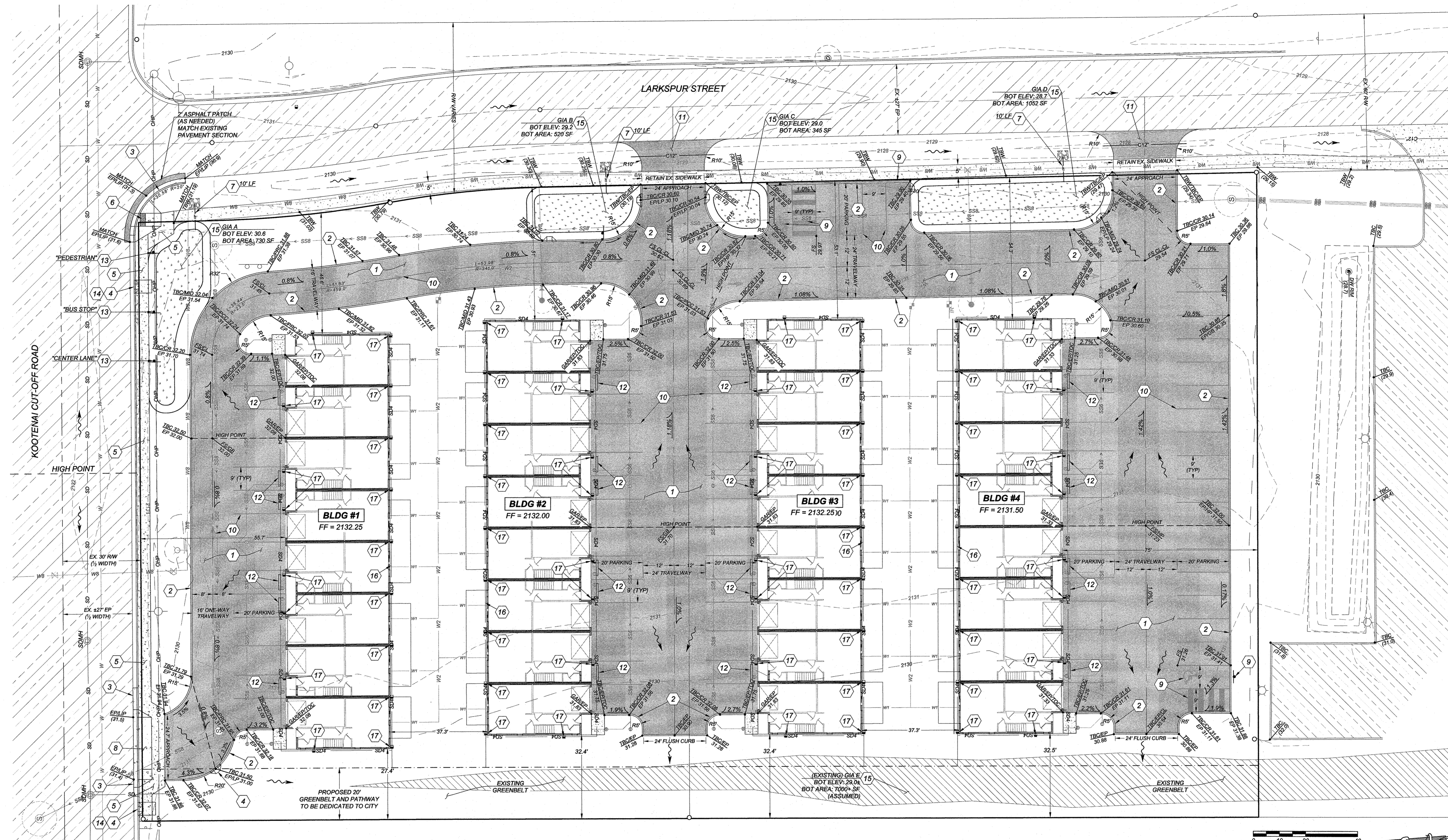


ALDER CREEK TOWNHOMES

EXISTING CONDITIONS, DEMOLITION AND ESC PLAN
PONDERAY, IDAHO



DESIGNED BY:	DCD
DRAFTED BY:	GDH/ISMA
DATE:	03/16/2020
JOB NO.:	LCE 19-007



STREET AND SITE CONSTRUCTION NOTES:

- 1 CONSTRUCT 2" ASPHALT / 4" BASE ROADWAY PER THE TYPICAL PAVEMENT SECTION DETAIL SHOWN ON SHEET 7.
- 2 CONSTRUCT STANDARD CURB PER THE DETAIL SHOWN ON SHEET 7.
- 3 CONSTRUCT STANDARD CURB AND GUTTER PER THE DETAIL SHOWN ON SHEET 7.
- 4 CONSTRUCT DRAINAGE CURB CUT PER THE DETAIL SHOWN ON SHEET 7.
- 5 CONSTRUCT 5' WIDE SIDEWALK PER THE DETAIL SHOWN ON SHEET 7.
- 6 CONSTRUCT PEDESTRIAN RAMP PER THE DETAIL SHOWN ON SHEET 7.
- 7 INSTALL 8" CULVERT UNDER EXISTING SIDEWALK AND ARMOR AT OUTFALL WITH 6" ANGULAR ROCK PER MANUFACTURER'S SPECIFICATIONS AND CITY OF PONDERAY REQUIREMENTS.
- 8 CONSTRUCT DRIVEWAY APPROACH PER THE DETAIL SHOWN ON SHEET 7.
- 9 INSTALL ADA VAN ACCESSIBLE PARKING STALL STRIPING WITH APPROVED SIGNAGE PER DETAIL SHOWN ON SHEET 7.

- 10 INSTALL PAVEMENT MARKINGS AS SHOWN; ENGINEER TO APPROVE STRIPING PLAN.
- 11 CONSTRUCT DRIVEWAY APPROACH WITH CULVERT PER THE DETAIL SHOWN ON SHEET 7.
- 12 INSTALL WHEEL STOP, AS SHOWN AND PER THE DIRECTION OF THE OWNER, PER DETAIL SHOWN ON SHEET 7.
- 13 INSTALL RELOCATED SIGN PER CITY OF PONDERAY REQUIREMENTS.
- 14 CONSTRUCT SIDEWALK UNDERDRAIN PER THE DETAIL SHOWN ON SHEET 7.
- 15 CONSTRUCT GRASSY INFILTRATION AREA PER THE DETAIL SHOWN ON SHEET 7.
- 16 INSTALL 4" STORM DRAIN LINE PER MANUFACTURER'S SPECIFICATIONS. COORDINATE WITH ARCHITECTURAL PLANS. GRADE TO DRAIN AND DAYLIGHT IN GREENBELT AREA.
- 17 RAIN GUTTER DOWNSPOUTS PER APPROVED ARCHITECTURAL PLANS BY OTHERS. CONNECT TO DRAIN PIPE AS REQUIRED. CONTRACTOR TO SUBMIT SPECIFICATIONS.

PROJECT MATRIX

PARCEL #S	RPP37880010010A RPP37890010020A
LEGAL DESCRIPTION	LOTS 1 & 2, BLOCK 1 OF ALDER CREEK (BK 8 / PG 41)
TOTAL AREA	2.39 ACRES
# OF UNITS	32
DENSITY	13.4 du/ac
OPEN SPACE	30,915 SF
IMPERVIOUS AREA	26,668 SF (ROOF) 36,354 SF (PAVEMENT) 34.9% OF SITE
BUILDING FLOOR AREA	MAIN FLOOR 4,072 SF UPPER FLOOR 6,148 SF TOTAL AREA 10,220 SF
(EACH BUILDING)	TOTAL AREA 40,880 SF
(ALL BUILDINGS)	

PARKING CALCULATIONS

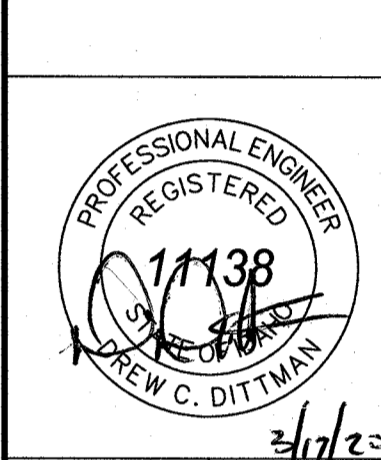
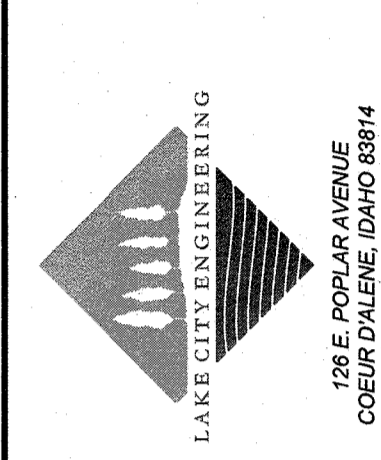
REQUIRED	1 SPACE / 600 SF OF BUILDING 40,880 SF / 600 SF = 69 SPACES
PROVIDED	32 GARAGES 32 IN-FRONT GARAGE 46 STANDARD 2 ADA (VAN ACCESSIBLE) 112 TOTAL

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ALDER CREEK TOWNHOMES
STORMWATER, GRADING AND SITE PLAN
PONDERAY, IDAHO

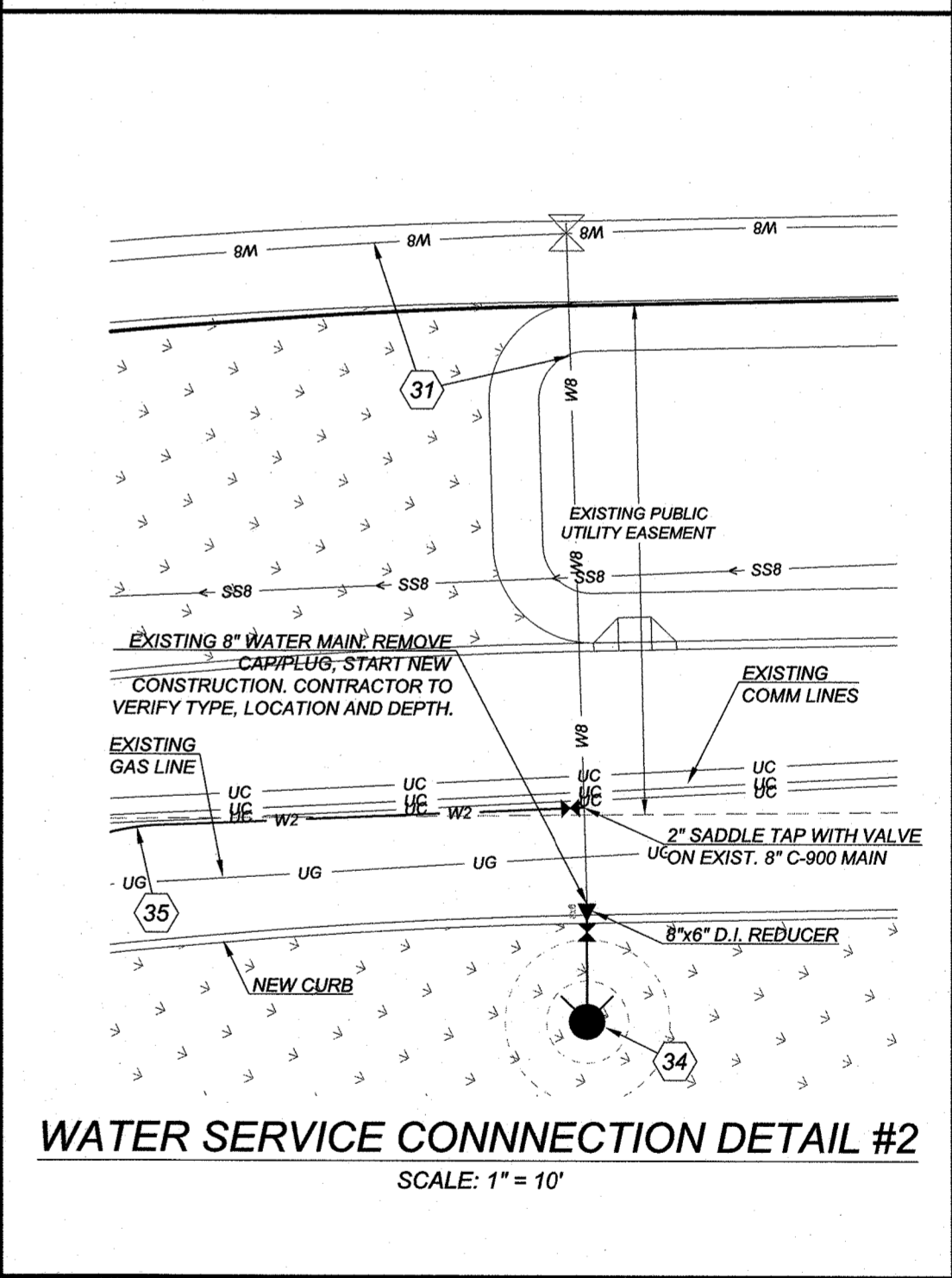
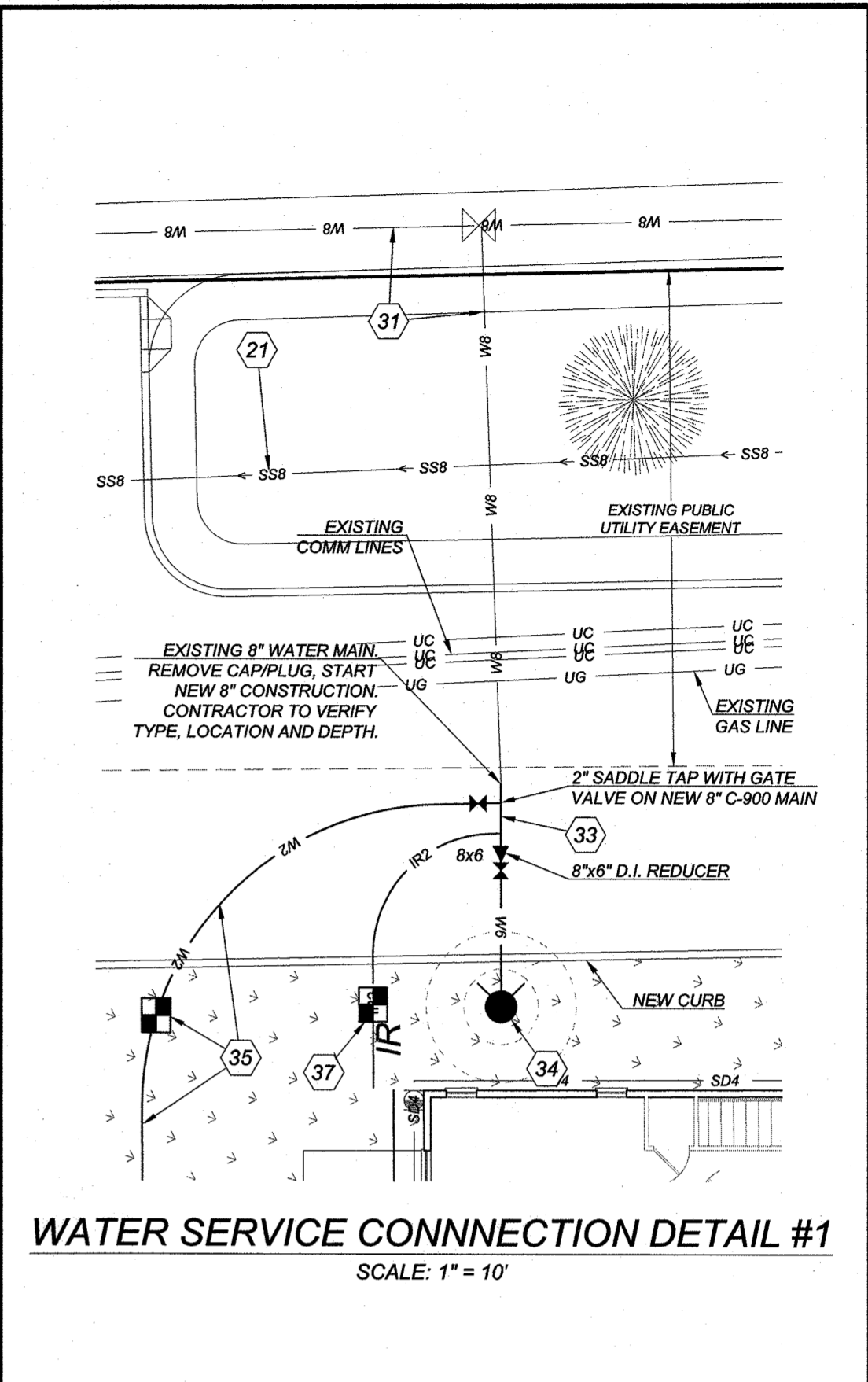
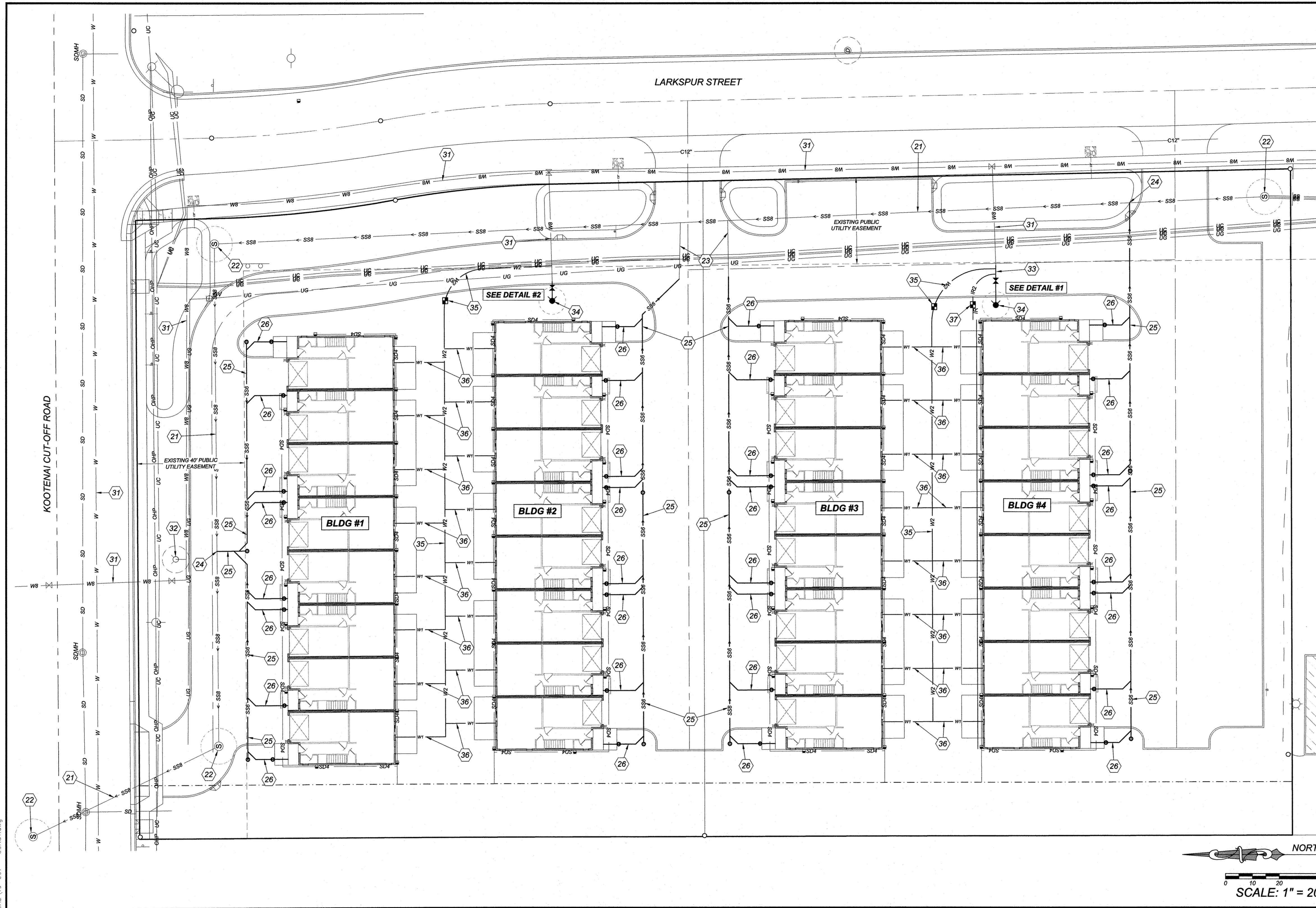
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- SANITARY SEWER CONSTRUCTION NOTES:**
- (21) EXISTING SANITARY SEWER MAIN, PIPE DIAMETER AS SHOWN. RETAIN AND PROTECT IN PLACE.
 - (22) EXISTING SANITARY SEWER MANHOLE. RETAIN AND PROTECT IN PLACE.
 - (23) EXISTING 6" SANITARY SEWER SERVICE, END INVERT UNKNOWN. CONTRACTOR TO VERIFY LOCATION AND DEPTH.
 - (24) INSTALL 6" SANITARY SEWER SADDLE TAP TO EXISTING 8" SANITARY SEWER MAIN PER THE KOOTENAI-PONDERAY SEWER DISTRICT STANDARDS. GPK TAPPING SADDLE, OR EQUIVALENT.
 - (25) INSTALL 6" SDR 35 SANITARY SEWER LINE AT MINIMUM 1% GRADE WITH 6" CLEANOUT, AS SHOWN, PER THE KOOTENAI-PONDERAY SEWER DISTRICT STANDARDS AND IDAHO STATE PLUMBING CODE.
 - (26) INSTALL 4" SDR 35 SANITARY SEWER SERVICE AT MINIMUM 2% GRADE WITH 4" CLEANOUT, AS SHOWN, PER THE KOOTENAI-PONDERAY SEWER DISTRICT STANDARDS AND IDAHO STATE PLUMBING CODE.

- DOMESTIC WATER CONSTRUCTION NOTES:**
- (31) EXISTING DOMESTIC WATER MAIN, PIPE DIAMETER AS SHOWN. RETAIN AND PROTECT.
 - (32) EXISTING FIRE HYDRANT. RETAIN AND PROTECT.
 - (33) INSTALL 8" DR18 C900 PVC WATER MAIN PER MANUFACTURER'S SPECIFICATIONS AND THE CITY OF SANDPOINT SPECIFICATIONS.
 - (34) INSTALL FIRE HYDRANT ASSEMBLY PER MANUFACTURER'S SPECIFICATIONS AND THE THE CITY OF SANDPOINT SPECIFICATIONS AND DETAIL SHOWN ON SHEET 6.
 - (35) INSTALL 2" WATER METER AND SERVICE LINE PER THE THE CITY OF SANDPOINT SPECIFICATIONS AND DETAIL SHOWN ON SHEET 6.
 - (36) INSTALL 1" POLY WATER SERVICE LINE PER IDAHO STATE PLUMBING CODE.
 - (37) INSTALL 2" IRRIGATION SERVICE PER THE CITY OF SANDPOINT SPECIFICATIONS.

WATER NOTE:

- THRUST BLOCKING NOT SHOWN FOR CLARITY. THRUST BLOCKING SHALL BE INSTALLED IN ACCORDANCE WITH CITY OF SANDPOINT WATER DEPARTMENT STANDARDS AND REQUIREMENTS.

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PROFESSIONAL ENGINEER
REGISTERED
11138
DREW C. DITTMAN
3/17/20

ALDER CREEK TOWNHOMES

UTILITY PLAN
PONDERAY, IDAHO

ONE INCH

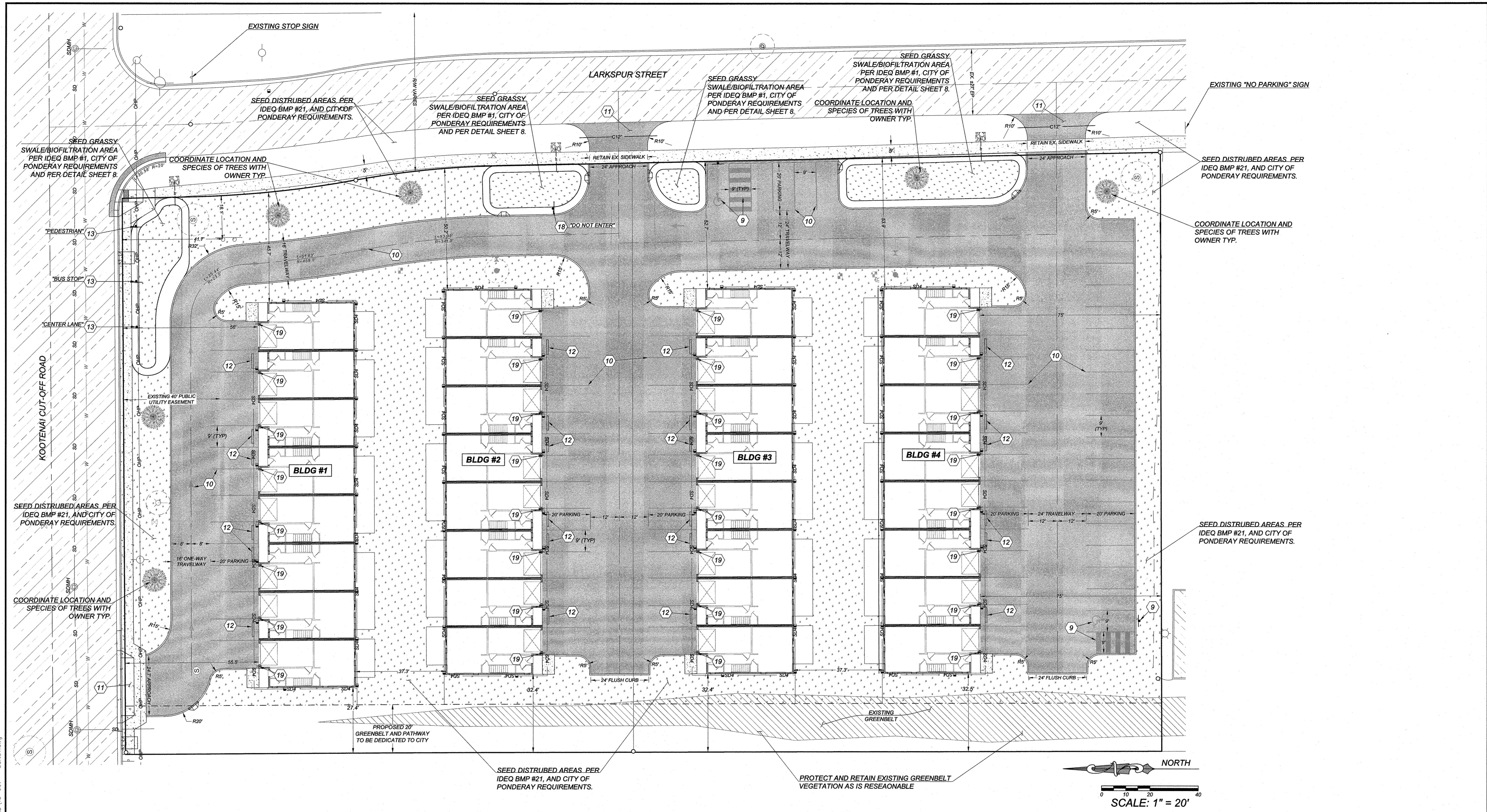
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SIGNAGE / MARKINGS CONSTRUCTION NOTES:

- 9 INSTALL ADA VAN ACCESSIBLE PARKING STALL STRIPING WITH APPROVED SIGNAGE PER DETAIL SHOWN ON SHEET 7.
- 10 INSTALL PAVEMENT MARKINGS AS SHOWN; ENGINEER TO APPROVE STRIPING PLAN.
- 11 CONSTRUCT DRIVEWAY APPROACH WITH CULVERT PER THE DETAIL SHOWN ON SHEET 7.
- 12 INSTALL WHEEL STOP, AS SHOWN AND PER THE DIRECTION OF THE OWNER, PER DETAIL SHOWN ON SHEET 7.
- 13 INSTALL RELOCATED SIGN PER CITY OF PONDERAY REQUIREMENTS.
- 18 INSTALL "DO NOT ENTER" SIGN PER CITY OF PONDERAY REQUIREMENTS.
- 19 INSTALL SURFACE MOUNTED LIGHTING ON BUILDINGS. COORDINATE LIGHTING WITH ELECTRICAL PLAN BY OTHERS.

SIGNAGE NOTE:

- NO NEW ON-SITE OR BUILDING SIGNAGE IS PROPOSED AT THIS TIME. ANY FUTURE SIGNS SHALL BE INSTALLED PER CITY OF PONDERAY REQUIREMENTS.

ADA NOTE

- ADA ACCESSIBLE ROUTE SHOWN HEREON FOR INFORMATIONAL PURPOSES ONLY. NOT REQUIRED TO BE STRIPED. MAX 2% CROSS SLOPE PER THE REQUIREMENTS OF ADAAG.

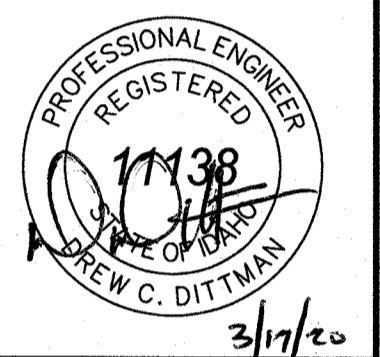
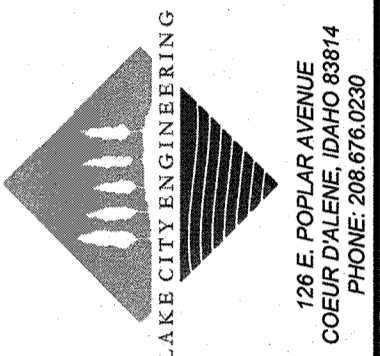
TRASH COLLECTION:

- EACH UNIT SHALL BE REQUIRED TO MAINTAIN THEIR OWN TRASH COLLECTION RECEPTACLE WITHIN THE CONFINES OF THEIR OWN FACILITY SPACE. COLLECTION SHALL BE COORDINATED WITH LOCAL TRASH COLLECTION PROVIDER.

LANDSCAPE NOTE:

- LANDSCAPING TO MATCH THEME AND CHARACTER OF ADJOINING BUILDINGS AND NEIGHBORHOOD.

NO.	DESCRIPTION	INITIAL	DATE



ALDER CREEK TOWNHOMES
 LANDSCAPE, SIGNAGE, AND STRIPING PLAN
 PONDERAY, IDAHO

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PRESSURE TESTING, FLUSHING AND DISINFECTION NOTES (ISPCW 2015 EDITION)

3.6 PRESSURE TESTING

- PERFORM TESTING IN THE PRESENCE OF THE ENGINEER.
- ASSURE THAT TRENCH IS PROPERLY BACKFILLED AND THRUST BLOCKING HAS CURED TO A DEGREE THAT WILL ALLOW PRESSURE TESTING WITHOUT DAMAGE, OR PIPEFITTING MOVEMENT.
- GRADUALLY FILL PIPE WITH WATER. FOR PIPE WORKING PRESSURES LESS THAN OR EQUAL TO 100 PSI, SUSTAIN A TEST PRESSURE OF 150 PSI. FOR PIPE WORKING PRESSURES GREATER THAN 100 PSI, SUSTAIN A TEST PRESSURE AT LEAST 1.5 TIMES THE WORKING PRESSURE OR AS DETERMINED BY THE ENGINEER.
- EXPEL ALL AIR.
- VERIFY THAT, IN A TWO-HOUR TEST, THE PIPE DOES NOT LEAK IN EXCESS OF THE ALLOWABLE LEAKAGE AS DEFINED BY THE FOLLOWING FORMULA IN WHICH Q IS THE ALLOWABLE LEAKAGE IN GALLONS/HOUR.

$$Q = \frac{LD \cdot P}{148,000}$$

WHERE: Q = ALLOWABLE LEAKAGE IN GALLONS PER HOUR
 L = LENGTH OF PIPE SECTION BEING TESTED, IN FEET
 D = NOMINAL DIAMETER OF PIPE, IN INCHES
 P = AVERAGE TEST PRESSURE DURING THE HYDROSTATIC TEST, IN POUNDS PER SQUARE INCH (GAUGE)

- PRESSURE TEST HDPE PIPE PER ASTM 2164 FIELD LEAK TESTING OF POLYETHYLENE (PE) PRESSURE PIPE SYSTEMS USING HYDROSTATIC PRESSURE.

3.9 FLUSHING AND DISINFECTION

- FLUSHING PRIOR TO DISINFECTION.

- BEFORE CHLORINATION, FLUSH THE MAINS THOROUGHLY AFTER THE PRESSURE AND LEAKAGE TEST ARE COMPLETED.
- USE A MINIMUM FLUSHING VELOCITY IN THE MAIN OF 2.5 FEET/SECOND.
- IF NO HYDRANT IS INSTALLED AT THE END OF THE MAIN, PROVIDE A TAP OF THE SIZE SUFFICIENT TO PRODUCE A VELOCITY IN THE MAIN OF AT LEAST 2.5 FEET/SECOND.
- TABLE 1 SHOWS THE RATES OF FLOW REQUIRED TO PRODUCE A VELOCITY OF 2.5 FEET/SECOND IN VARIOUS SIZE PIPES.

TABLE 1
REQUIRED FLOW AND OPENINGS TO FLUSH PIPELINES
40 PSI RESIDUAL PRESSURE IN WATER MAIN (1)

PIPE DIAM. (INCH)	Velocity in Main, (GPM)	SIZE OF PIPE (INCH)		HYDRANT OUTLETS	
		(1) (1-1/2)	(2)	NUMBER	SIZE IN (INCH)
4	100	1		1	2 1/2
6	220	1	1	1	2 1/2
8	400	2	1	1	2 1/2
10	600	3	2	1	2 1/2
12	900	2	2	2	2 1/2
16	1600		4	2	2 1/2

1) WITH A 40 PSI PRESSURE IN THE MAIN WITH THE HYDRANT FLOWING TO ATMOSPHERE, A 2-1/2 INCH OUTLET WILL DISCHARGE APPROXIMATELY 1,000 GPM AND A 4-1/2 INCH HYDRANT NOZZLE WILL DISCHARGE APPROXIMATELY 2500 GPM.
 2) NUMBER OF TAPS ON PIPE BASED ON DISCHARGE THROUGH 5 FEET OF GALVANIZED IRON (GI) PIPE WITH ONE 90° ELBOW.

- EXERCISE EXTREME CARE AND CONDUCT A THOROUGH INSPECTION DURING THE WATER MAIN LAYING TO PREVENT ALL TEST FIT SMALL STONES, PIECES OF CONCRETE, PARTICLES OF MATERIAL, OR OTHER FOREIGN MATERIAL THAT MAY HAVE ENTERED THE MAINS.
- CLEAN LARGE MATERIAL BY FLUSHING AND INSPECTING ALL HYDRANTS ON THE LINES TO ENSURE THAT THE ENTIRE VALVE OPERATING MECHANISM OF EACH HYDRANT IS IN GOOD CONDITION.
- DISINFECTION OF WATER PIPES.

- GENERAL.

- COMPLY WITH ANSI/AWWA C 651: DISINFECTING WATER MAINS, THESE SPECIFICATIONS, AND ENGINEER'S DIRECTION.
- KEEP THE INTERIOR OF ALL PIPE, FITTINGS AND APPURTENANCES FREE FROM DIRT, HEAVY AND FOREIGN PARTICLES.
- DISINFECT ALL WATER PIPES AND APPURTENANCES PRIOR TO PLACING IN SERVICE.

- FORM OF CHLORINE USED TO BE PRE-APPROVED BY THE ENGINEER.

- LIQUID CHLORINE.

- FORM: LIQUID CONTAINING 100% AVAILABLE CHLORINE UNDER PRESSURE IN STEEL CONTAINERS.
- STANDARD: ANSI/AWWA B 301.
- EXECUTION: USED ONLY BY TRAINED PERSONNEL WITH APPROPRIATE GAS-FLOW CHLORINATORS AND EJECTORS.
- AUTHORIZATION: ONLY WITH WRITTEN AUTHORIZATION OF THE ENGINEER.

- SODIUM HYPOCHLORITE.

- FORM: LIQUID CONTAINING APPROXIMATELY 5 TO 15% AVAILABLE CHLORINE.
- STANDARD: ANSI/AWWA B 300.

- CALCIUM HYPOCHLORITE.

- FORM: GRANULAR OR IN 5G TABLETS CONTAINING APPROXIMATELY 65% AVAILABLE CHLORINE BY WEIGHT.
- STANDARD: ANSI/AWWA B 300.

- METHODS OF CHLORINATION USED TO BE PRE-APPROVED BY THE ENGINEER.

- TABLET OR GRANULE METHOD.

- SOLUTION STRENGTH: 25 MG/L MINIMUM.
- USE: ONLY IF THE PIPES AND APPURTENANCES ARE KEPT CLEAN AND DRY DURING CONSTRUCTION. DO NOT USE ON SOLVENT WELDED PLASTIC OR SCREWED JOINT STEEL PIPE.
- PLACEMENT WHEN USING GRANULES: DURING CONSTRUCTION, PLACE CALCIUM HYPOCHLORITE GRANULES AT THE UPSTREAM END OF THE FIRST SECTION OF PIPE, AT THE UPSTREAM END OF EACH BRANCH MAIN, AND AT 500-FOOT INTERVALS.
- GRANULAR QUANTITY: REFER TO TABLE 2.

TABLE 2
OUNCES OF GRANULES

PIPE DIAMETER (INCHES)	AMOUNT (OUNCES)
4	1.7
6	3.8
8	6.7
10	10.5
12	15.1
16	26.8
18	34.0
20	41.9
24	60.4

- PLACEMENT WHEN USING TABLETS: DURING CONSTRUCTION, PLACE 5G CALCIUM HYPOCHLORITE TABLETS IN EACH SECTION OF PIPE AND ALSO PLACE ONE TABLET IN EACH HYDRANT, HYDRANT BRANCH AND OTHER APPURTENANCE. ATTACH TABLETS TO THE INSIDE OF THE PIPE USING AN ADHESIVE SUCH AS PERMATEX NO. 2 OR APPROVED SUBSTITUTION. ASSURE NO ADHESIVE IS ON THE TABLET EXCEPT ON THE BROAD SIDE ATTACHED TO THE SURFACE OF THE PIPE. ATTACH ALL THE TABLETS AT THE INSIDE TIP OF THE MAIN, WITH APPROXIMATELY EQUAL NUMBERS OF TABLETS AT EACH END OF A GIVEN PIPE LENGTH. IF THE TABLETS ARE ATTACHED BEFORE THE PIPE SECTION IS PLACED IN THE TRENCH, MARK THEIR POSITION ON THE SECTION SO IT CAN BE READILY DETERMINED THAT THE PIPE IS INSTALLED WITH THE TABLETS AT THE TOP.

- TABLET QUANTITY: REFER TO TABLE 3.

TABLE 3
NUMBER OF TABLETS (1)

PIPE DIAMETER (INCHES)	NUMBER OF 5g TABLETS (2)
4	1
6	1
8	2
10	3
12	4
16	6
18	7
20	9
24	13

- ADJUST FOR PIPE LENGTH OTHER THAN 18 FEET.
- BASED ON 3.25G AVAILABLE CHLORINE PER TABLET.

- FILLING PROCEDURE: WHEN GRANULE OR TABLET INSTALLATION HAS BEEN COMPLETED, FILL THE MAIN WITH CLEAN WATER AT A VELOCITY NOT EXCEEDING 1 FPS. TAKE PRECAUTIONS TO ASSURE THAT AIR POCKETS ARE ELIMINATED. LEAVE THIS WATER IN THE PIPE FOR AT LEAST 24 HOURS. IF THE WATER TEMPERATURE IS LESS THAN 41°F, LEAVE THE WATER IN THE PIPE FOR AT LEAST 48 HOURS. POSITION VALVE SO THAT THE CHLORINE SOLUTION IN THE MAIN BEING TREATED WILL NOT FLOW INTO WATER MAINS IN ACTIVE SERVICE.

- CONTINUOUS FEED METHOD.

- SOLUTION STRENGTH: DOSE AT 25MG/L FOR 4 HOURS.
- RESIDUAL: 10 MG/L AT 24 HOURS.

- DOSING METHODS:

- LIQUID CHLORINE: SOLUTION FEED VACUUM-OPERATED CHLORINATOR IN COMBINATION WITH A BOOSTER PUMP.
- DIRECT FEED: NOT ALLOWED.
- HYPOCHLORITE SOLUTION: CHEMICAL FEED PUMP DESIGNED FOR FEEDING CHLORINE SOLUTIONS.
- CALCIUM HYPOCHLORITE GRANULES: REFER TO PVIOUS SECTION.

- FILLING PROCEDURE: USE APPROVED SOURCE TO FLOW CLEAN WATER AT A CONSTANT, MEASURED RATE INTO THE NEWLY LAID WATER MAIN. FILL AT A POINT NOT MORE THAN 10 FEET DOWNSTREAM FROM THE BEGINNING OF THE NEW MAIN. MEASURE THE CHLORINE CONCENTRATION AT REGULAR INTERVALS AND ENSURE A 25MG/L DOSE. POSITION VALVES SO THAT THE CHLORINE SOLUTION IN THE MAIN BEING TREATED DOES NOT FLOW INTO WATER MAINS IN ACTIVE SERVICE. DO NOT STOP CHLORINE APPLICATION UNTIL THE ENTIRE MAIN IS FILLED WITH CHLORINATED WATER. RETAIN THE CHLORINATED WATER IN THE MAIN FOR AT LEAST 4 HOURS. OPERATE ALL VALVES AND HYDRANTS IN THE SECTION TREATED. AT THE END OF THE 24-HOUR PERIOD, VERIFY THE TREATED WATER IN ALL PORTIONS OF THE MAIN HAS A RESIDUAL OF 10 MG/L FREE CHLORINE.

- SLUG METHOD.

- SOLUTION STRENGTH: 100 MG/L.
- DOSING METHODS: PER ENGINEER'S DIRECTION.

- FILLING PROCEDURE: USE APPROVED SOURCE TO FLOW CLEAN WATER AT A CONSTANT, MEASURED RATE INTO THE NEWLY LAID WATER MAIN. FILL AT A POINT NOT MORE THAN 10 FEET DOWNSTREAM FROM THE BEGINNING OF THE NEW MAIN. MEASURE CHLORINE CONCENTRATION AT REGULAR INTERVALS TO ENSURE 100MG/L DOSE. APPLY THE CHLORINE CONTINUOUSLY AND FOR THE TIME REQUIRED TO DEVELOP A SOLID COLUMN OR "SLUG" OF CHLORINATED WATER THAT WILL, AS IT MOVES THROUGH THE MAIN, EXPOSE ALL INTERIOR SURFACES TO A 100 MG/L FOR AT LEAST 3 HOURS. MEASURE THE CHLORINE RESIDUAL IN THE SLUG AS IT MOVES THROUGH THE MAIN. IF AT ANY TIME IT DROPS BELOW 50 MG/L, STOP FLOW AND RELOCATE CHLORINATION EQUIPMENT AT THE HEAD OF THE SLUG. AND AS FLOW IS RESUMED, ADD CHLORINE TO RESTORE THE FREE CHLORINE IN THE SLUG TO NOT LESS THAN 100 MG/L. AS THE CHLORINATED WATER FLOWS PAST FITTINGS AND VALVES, OPERATE VALVES AND HYDRANTS TO DISINFECT APPURTENANCES AND PIPE BRANCHES.

- FINAL FLUSHING.

- AFTER THE RETENTION PERIOD, FLUSH THE CHLORINATED WATER FROM THE MAIN UNTIL CHLORINE MEASUREMENTS SHOW THAT THE CONCENTRATION IN THE WATER LEAVING THE MAIN IS NO HIGHER THAN THAT IN THE SYSTEM, OR IS ACCEPTABLE FOR DOMESTIC USE.
- DISPOSE OF FLUSHING WATER TO A LOCATION APPROVED BY THE ENGINEER.

- BACTERIOLOGICAL TESTS.

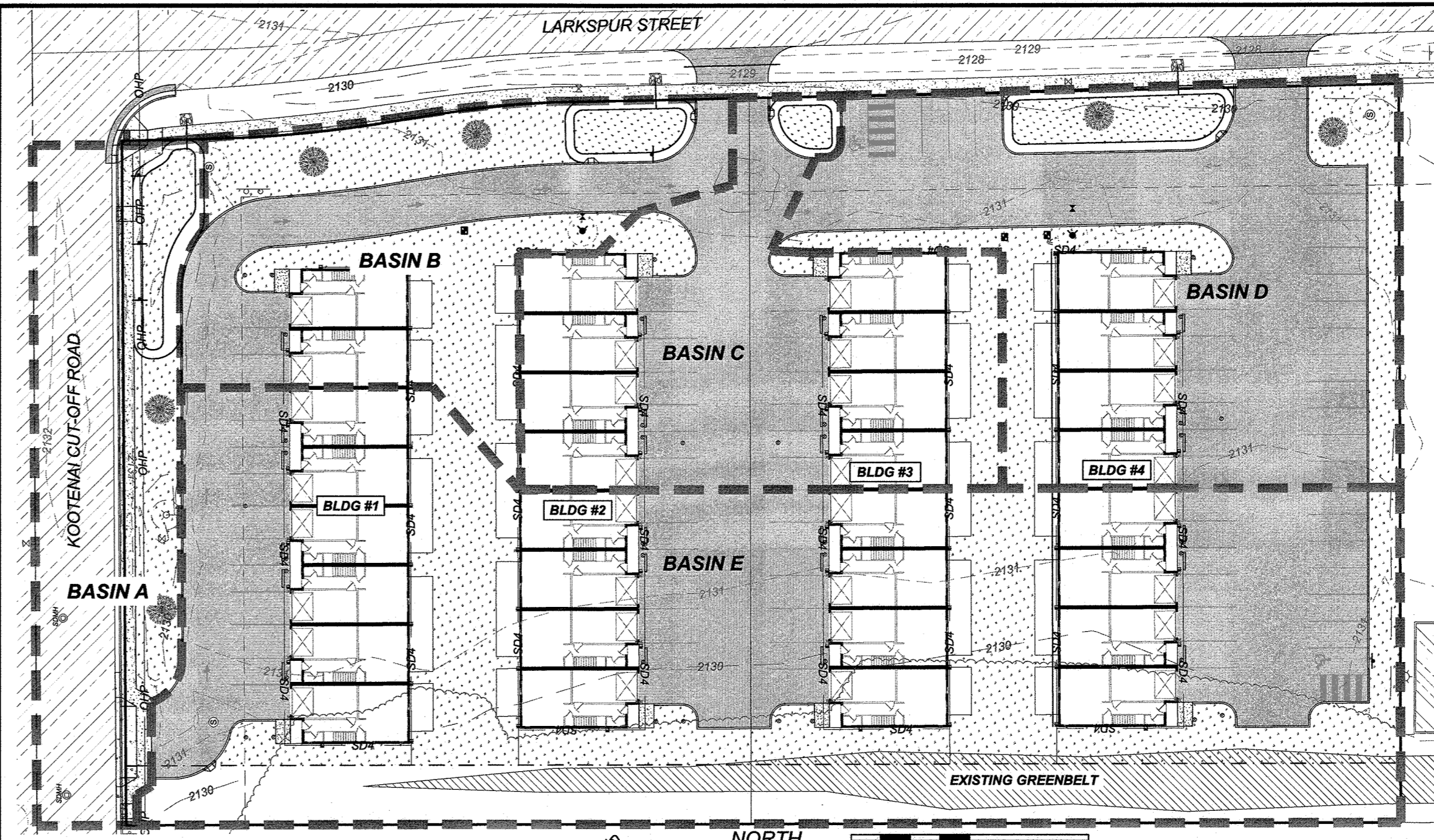
- AFTER FINAL FLUSHING AND BEFORE THE WATER MAIN IS PLACED IN SERVICE, TEST SAMPLES COLLECTED FROM THE MAIN(S) FOR COLIFORM BACTERIA. TAKE 2 SAMPLES FROM EACH LOCATION AT LEAST 24 HOURS APART.
- UNLESS OTHERWISE DIRECTED BY THE ENGINEER, COLLECT SAMPLES FROM EACH 1,200 FEET OF THE NEW MAIN AND ONE FROM EACH BRANCH.

- REDISINFECTION.

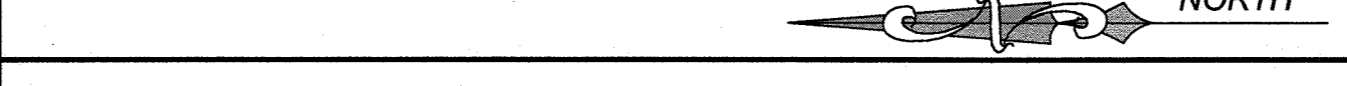
- IF THE INITIAL DISINFECTION FAILS TO PRODUCE APPROVED BACTERIOLOGICAL SAMPLES, REFRESH AND RESAMPLE THE MAIN.
- IF CHECK SAMPLES SHOW BACTERIAL CONTAMINATION, RE-CHLORINATE THE MAIN UNTIL APPROVED RESULTS ARE OBTAINED.

- SWABBING.

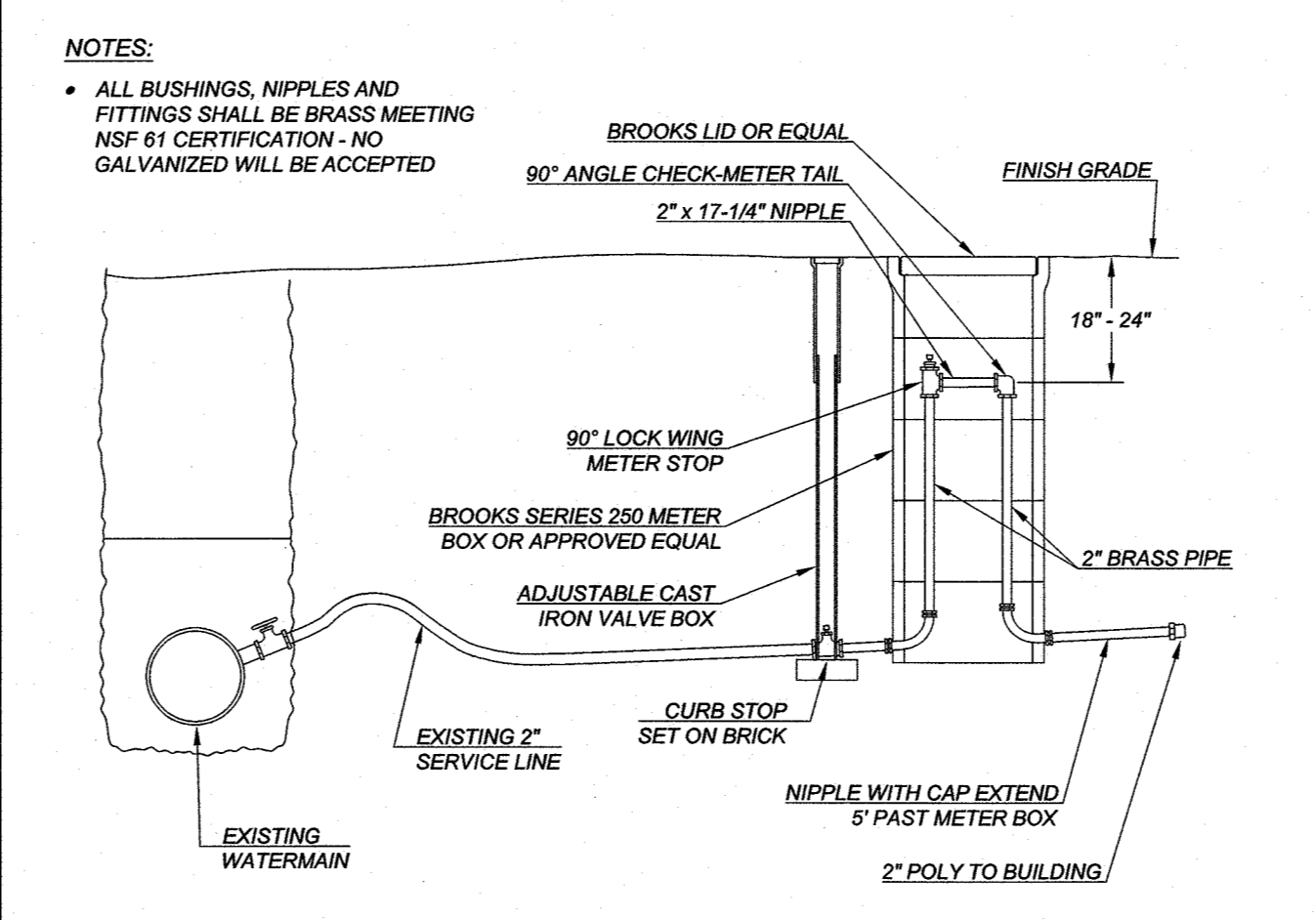
- IF CONNECTIONS ARE NOT DISINFECTED ALONG WITH THE NEWLY INSTALLED MAIN, SWAB OR SPRAY THE INTERIOR OF ALL PIPE AND FITTINGS USED IN MAKING THE CONNECTIONS WITH A 1% HYPOCHLORITE SOLUTION BEFORE INSTALLATION.



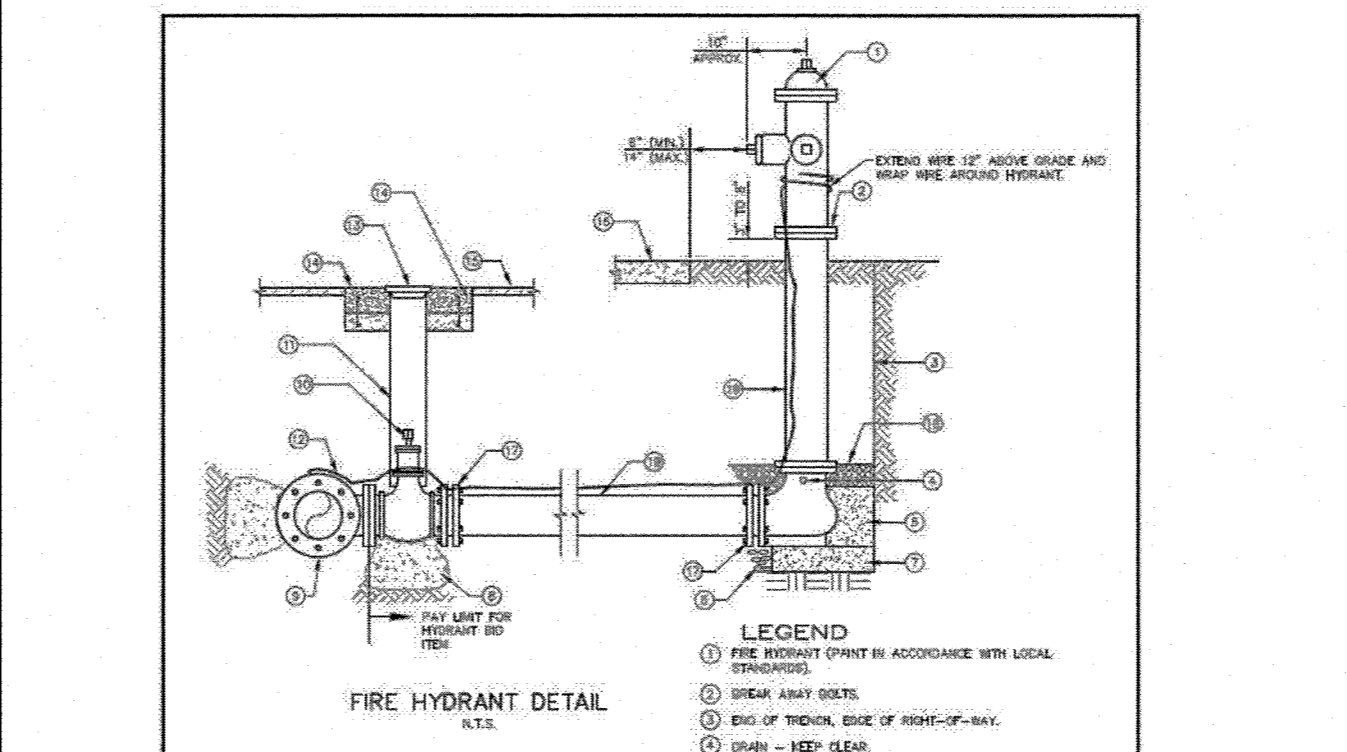
STORMWATER BASIN MAP



SCALE: 1" = 40'



2" DOMESTIC WATER METER SETTING
N.T.S.



FIRE HYDRANT DETAIL
IDaho STANDARDS FOR PUBLIC WORKS CONSTRUCTION
STANDARD DRAWING NO. SD-404

STORMWATER CALCULATIONS

$Q_{25} = CIA$ (RATIONAL METHOD)
 $C_{imp} = 0.9$; $C_{grass} = 0.4$
 $i = 2.8 \text{ in/hr}$ ($T_r < 5 \text{ min.}$)
 $A = \text{BASIN AREA}$

PREDEVELOPMENT - LOTS 1 & 2
 $Q_{25} = (0.4)(2.8 \text{ in/hr})(2.39 \text{ acres})$
 $Q_{25} = 2.68 \text{ cfs}$

BASIN A
 $C_{imp} = 0.9$; $C_{grass} = 0.4$
 $C = (0.9)(0.182 \text{ ac}) + (0.4)(0.072 \text{ ac}) / 0.254 \text{ ac} = 0.76$
 $A = 11080 \text{ sf} = 0.254 \text{ acres}$
 $Q_{25} = (0.76)(2.8 \text{ in/hr})(0.254 \text{ acres})$
 $Q_{25} = 0.54 \text{ cfs}$
 TREATMENT VOLUME REQUIRED = $(7,928) (1/2") / 12" = 330 \text{ cf}$
 TREATMENT AREA PROVIDED = 730 sf (@ 6" = 365 cf)

BASIN B
 $C_{imp} = 0.9$; $C_{grass} = 0.4$
 $C = (0.9)(0.101 \text{ ac}) + (0.4)(0.167 \text{ ac}) / 0.269 \text{ acres} = 0.59$
 $A = 11722 \text{ sf} = 0.269 \text{ acres}$
 $Q_{25} = (0.59)(2.8 \text{ in/hr})(0.269 \text{ acres})$
 $Q_{25} = 0.44 \text{ cfs}$
 TREATMENT VOLUME REQUIRED = $(4,418) (1/2") / 12" = 181 \text{ cf}$
 TREATMENT AREA PROVIDED = 520 sf (@ 6" = 260 cf)

BASIN C
 $C_{imp} = 0.9$; $C_{grass} = 0.4$
 $C = (0.9)(0.140 \text{ ac}) + (0.4)(0.053 \text{ ac}) / 0.193 \text{ acres} = 0.76$
 $A = 8407 \text{ sf} = 0.193 \text{ acres}$
 $Q_{25} = (0.76)(2.8 \text{ in/hr})(0.193 \text{ acres})$
 $Q_{25} = 0.41 \text{ cfs}$
 TREATMENT VOLUME REQUIRED = $(8,407) (1/2") / 12" = 344 \text{ cf}$
 TREATMENT AREA PROVIDED = 345 sf (@ 12" = 345 cf)

BASIN D
 $C_{imp} = 0.9$; $C_{grass} = 0.4$
 $C = (0.9)(0.267 \text{ ac}) + (0.4)(0.075 \text{ ac}) / 0.342 \text{ acres} = 0.79$
 $A = 14886 \text{ sf} = 0.342 \text{ acres}$
 $Q_{25} = (0.79)(2.8 \text{ in/hr})(0.342 \text{ acres})$
 $Q_{25} = 0.75 \text{ cfs}$
 TREATMENT VOLUME REQUIRED = $(11,638) (1/2") / 12" = 477 \text{ cf}$
 TREATMENT AREA PROVIDED = $1,052 \text{ sf}$ (@ 6" = 526 cf)

BASIN E
 $C_{imp} = 0.9$; $C_{grass} = 0.4$
 $C = (0.9)(0.326 \text{ ac}) + (0.4)(0.481 \text{ ac}) / 0.807 \text{ acres} = 0.80$
 $A = 35152 \text{ sf} = 0.807 \text{ acres}$
 $Q_{25} = (0.80)(2.8 \text{ in/hr})(0.807 \text{ acres})$
 $Q_{25} = 1.35 \text{ cfs}$
 TREATMENT VOLUME REQUIRED = $(14,197) (1/2") / 12" = 582 \text{ cf}$
 ASSUMED TREATMENT AREA PROVIDED = $7,000+ \text{ sf}$ (@ 6" = 3,500+ cf)
 BASIN E TO DRAIN TO EXISTING GREENBELT DRAINAGE AREA

*STORM RAINAGE RUNOFF COLLECTED FROM ALL BUILDINGS IS TO BE COLLECTED VIA ROOF GUTTERS AND DOWNSPOUTS AND PIPED AND DAYLIGHTED IN THE EXISTING GREENBELT DRAINAGE AREA.

STORMWATER NOTE
 STORMWATER CALCULATIONS SHOWN HEREON FOR REFERENCE ONLY. THIS LOT IS PART OF A MASTER STORMWATER PLAN FOR THE ALDER CREEK SUBDIVISION THAT HAS BEEN PREVIOUSLY APPROVED BY THE CITY OF PONDERAY.

UNDERGROUND SERVICE ALERT
 ONE-CALL NUMBER
 811
 CALL TWO BUSINESS DAYS BEFORE YOU DIG

REVISION BLOCK

NO.	DESCRIPTION	INITIAL	DATE

LAKE CITY ENGINEERING
 126 E. POPLAR AVENUE
 COEUR D'ALENE, IDAHO 83814
 PHONE: 208.676.0230

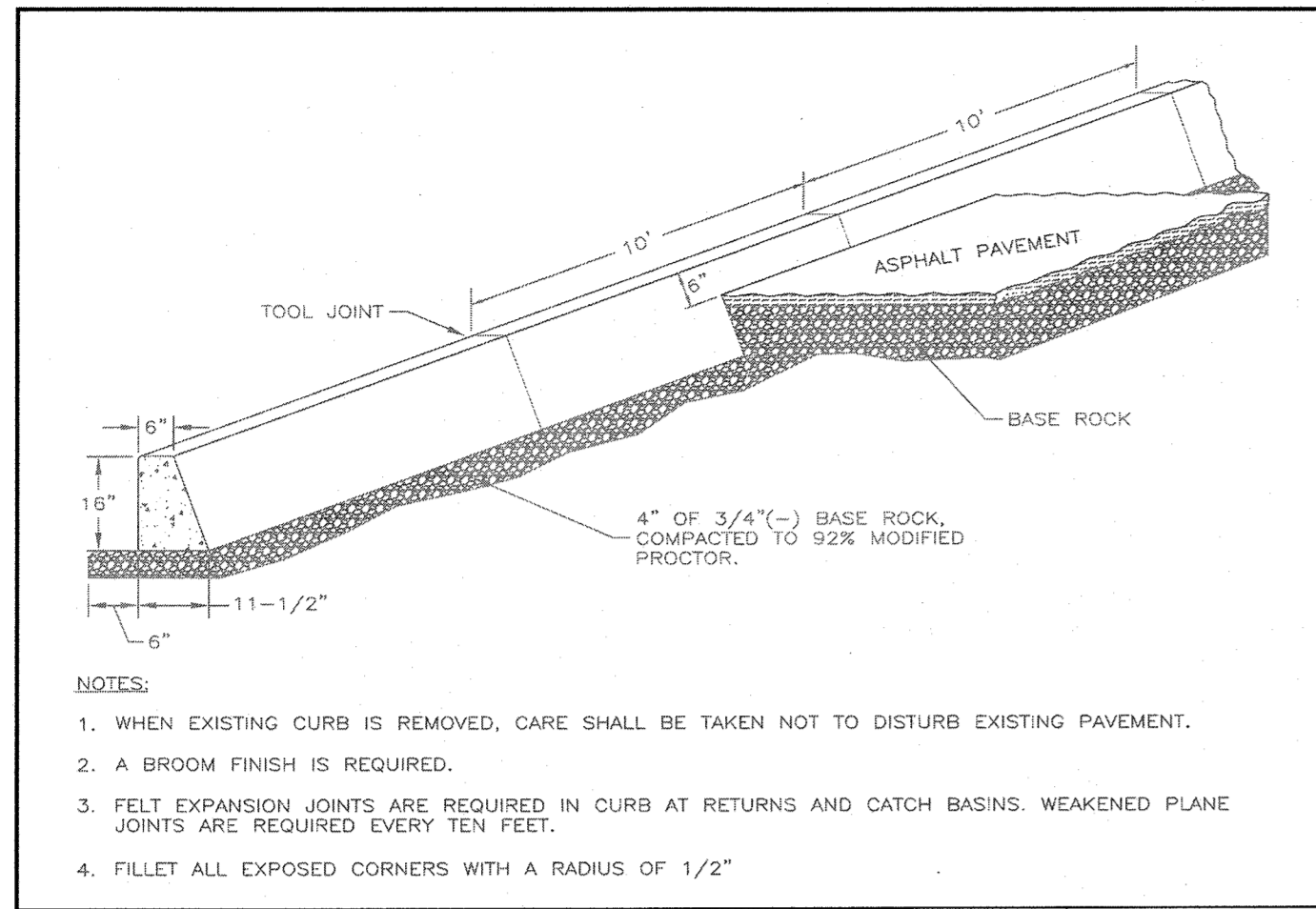
PROFESSIONAL ENGINEER
 REGISTERED
 11138
 BREW C. DITTMAN
 3/17/20

ALDER CREEK TOWNHOMES
 WATER DETAILS AND NOTES, STORMWATER CALCULATIONS
 PONDERAY, IDAHO

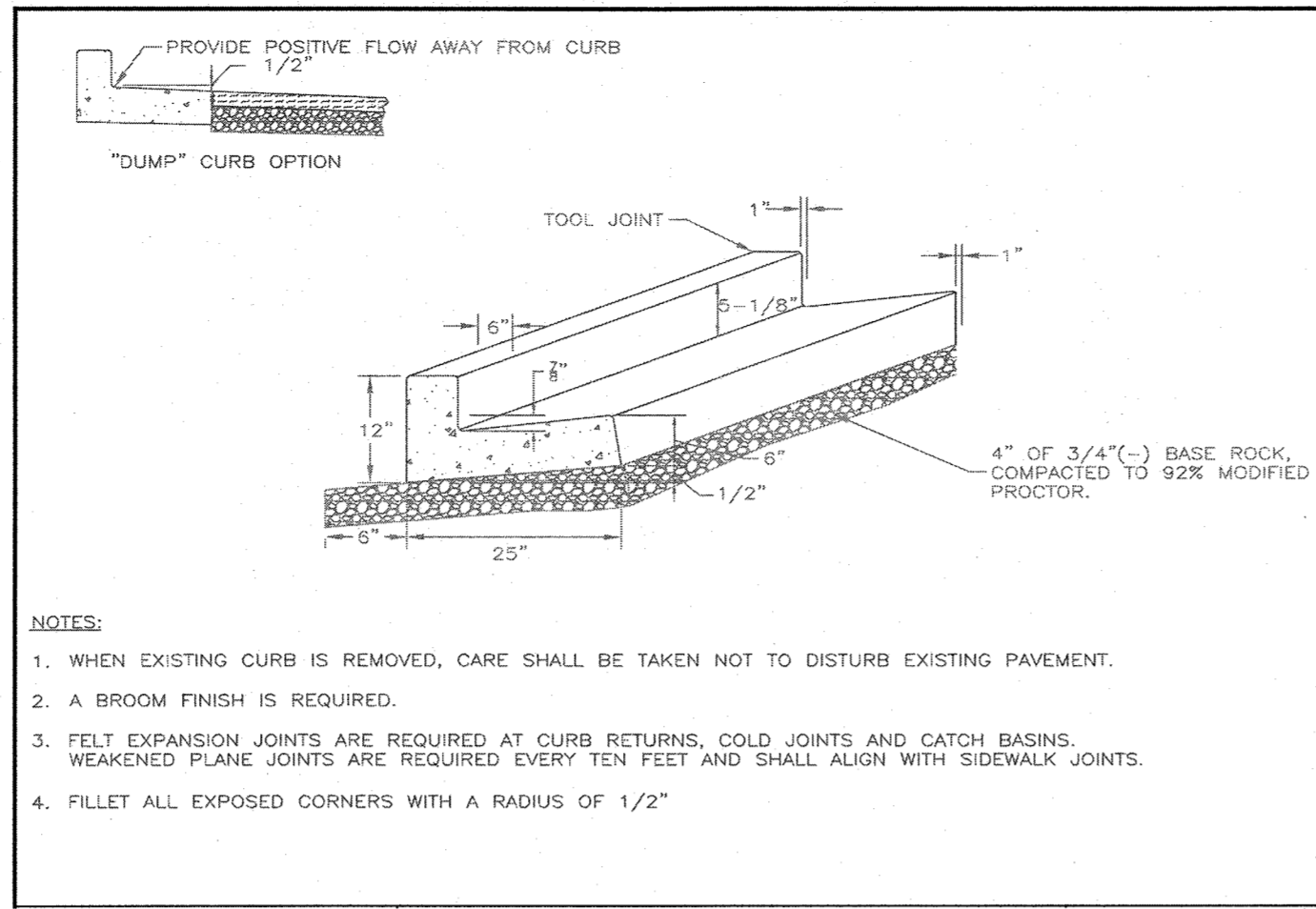
DESIGNED BY: DCD
 DRAFTED BY: GDH/SM
 DATE: 03/16/2020
 JOB NO: LCE 19-007

ONE INCH
 AT FULL SIZE IF NOT ONE INCH SCALE ACCORDINGLY

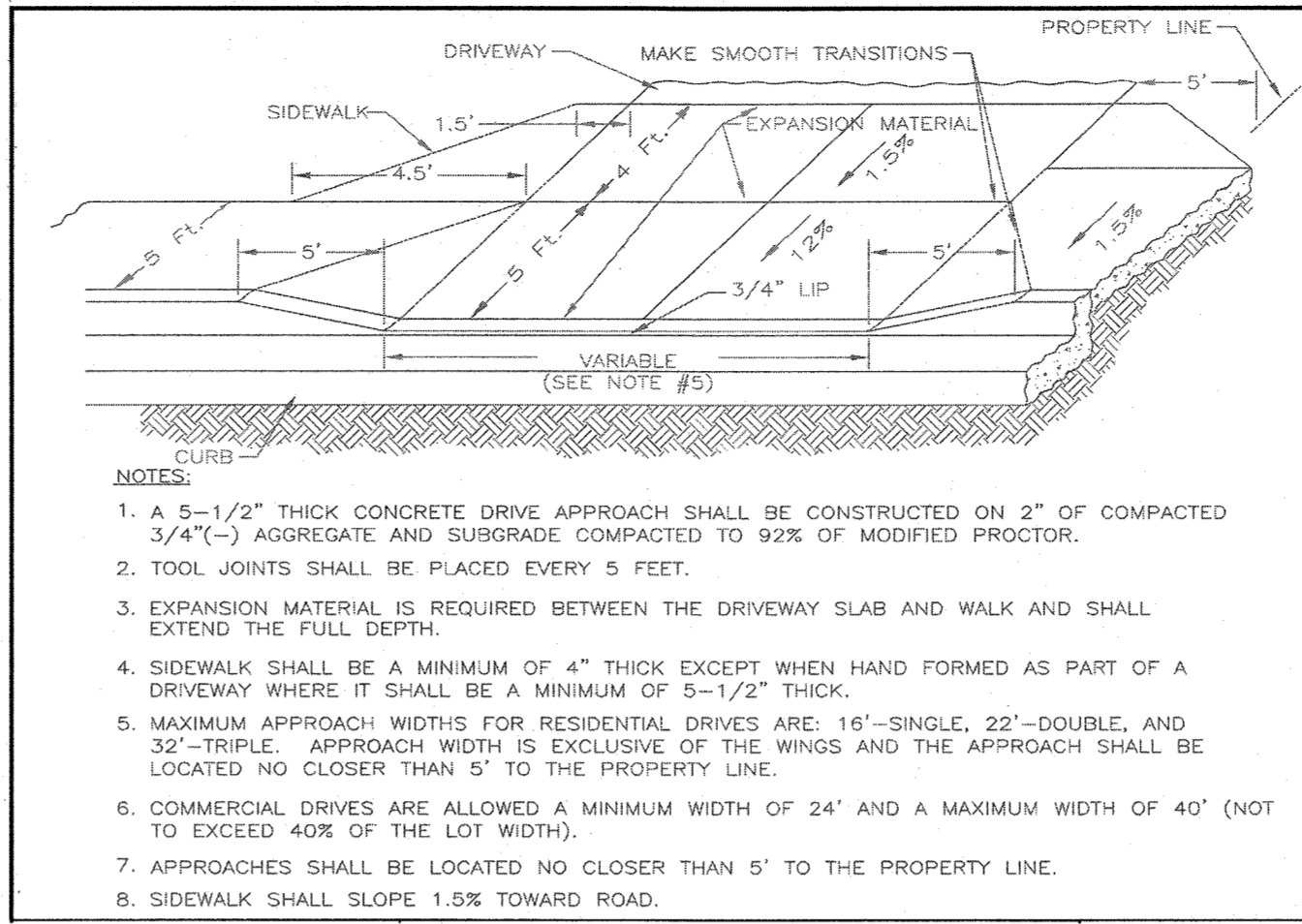
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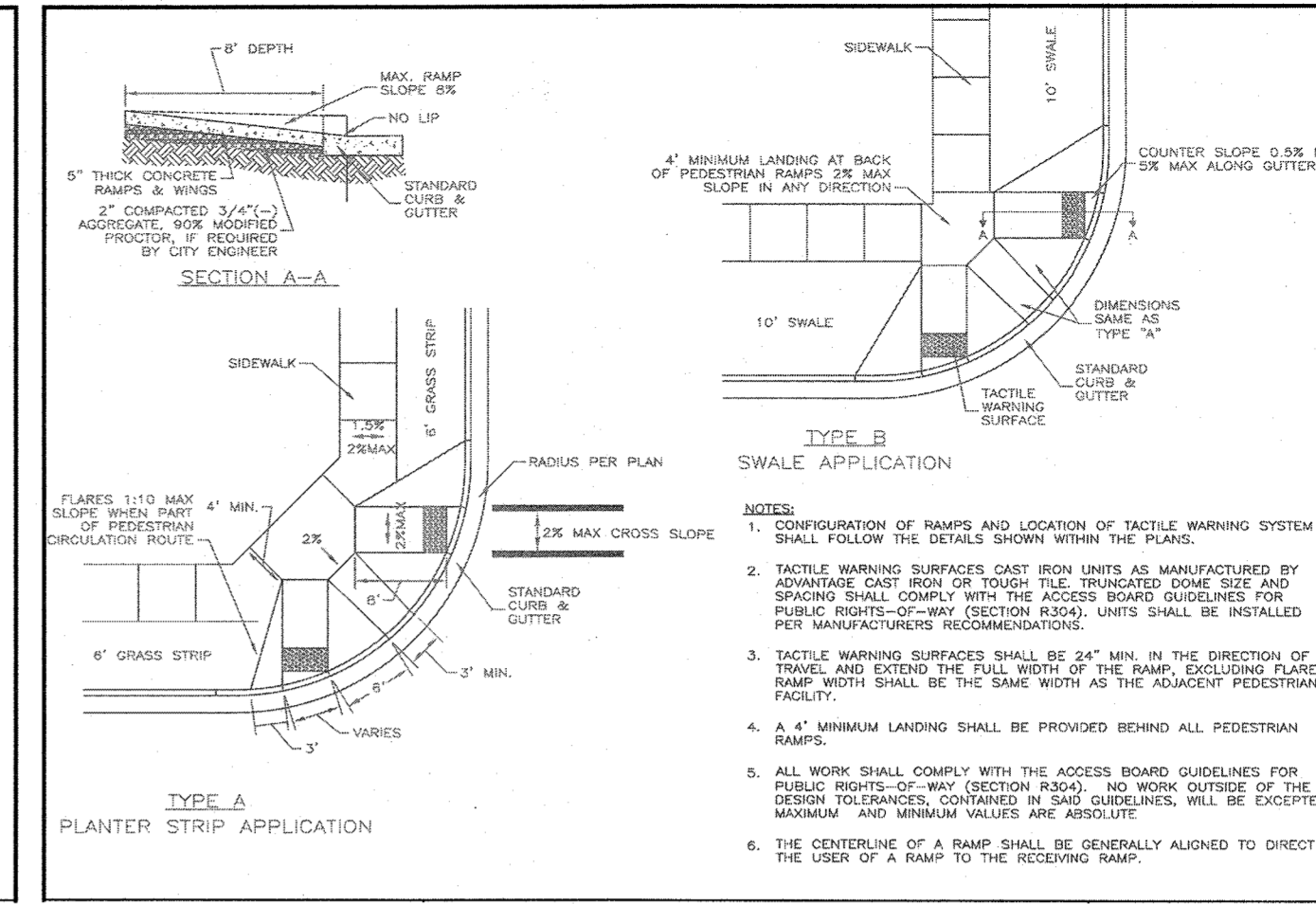
STANDARD STRAIGHT CURB DETAIL
NO SCALE



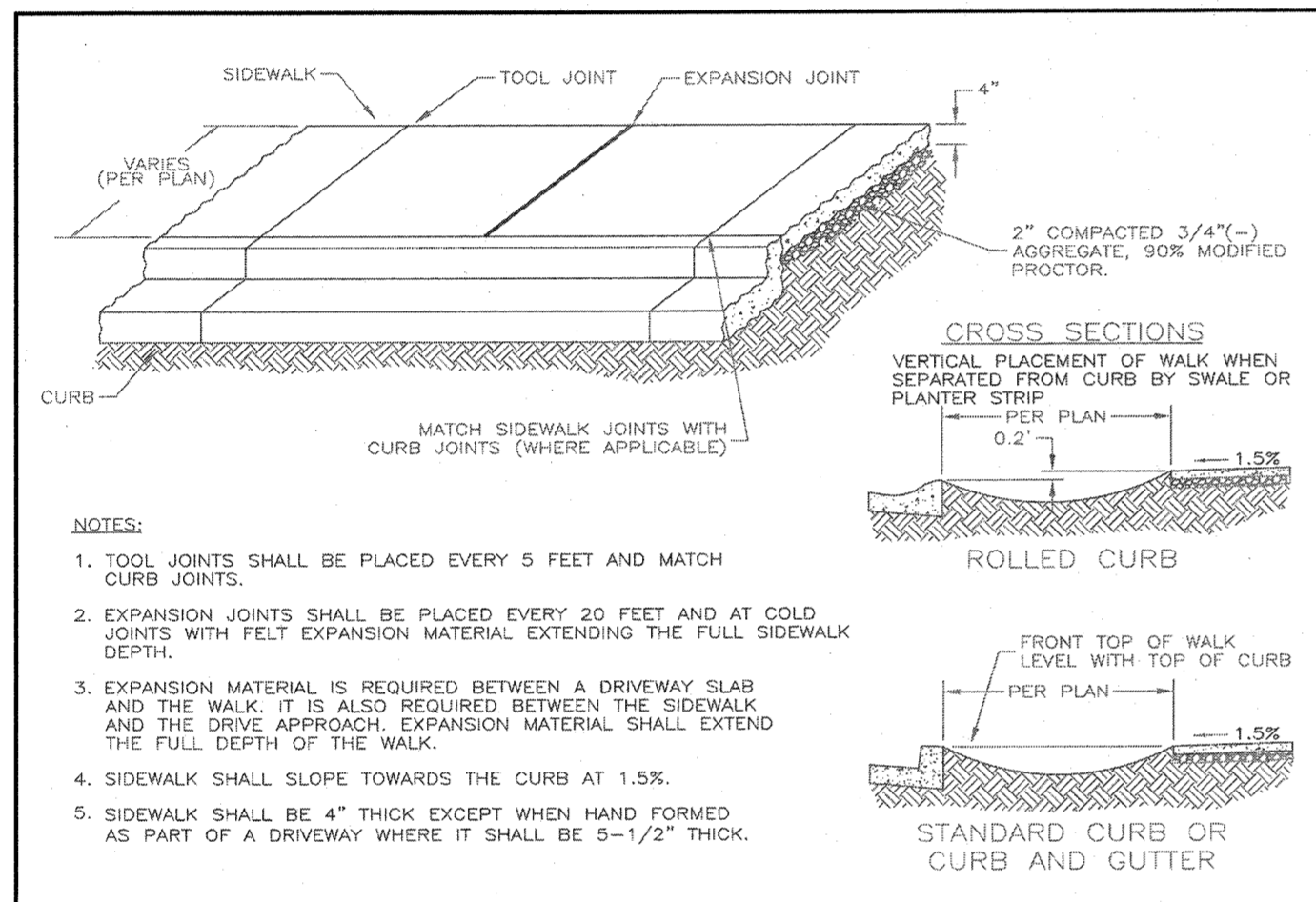
STANDARD CURB & GUTTER DETAIL
NO SCALE



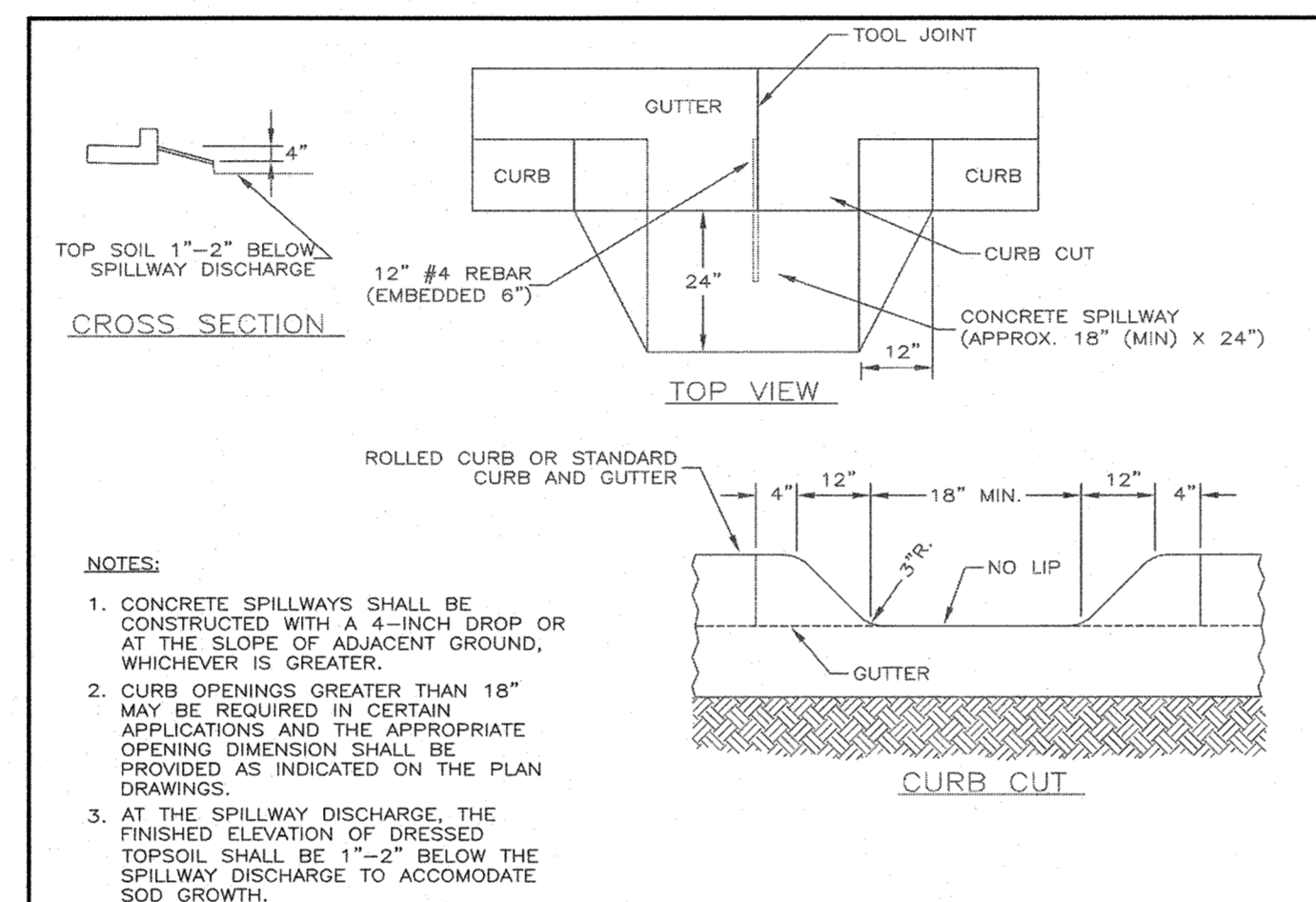
DRIVEWAY APPROACH DETAIL
NO SCALE



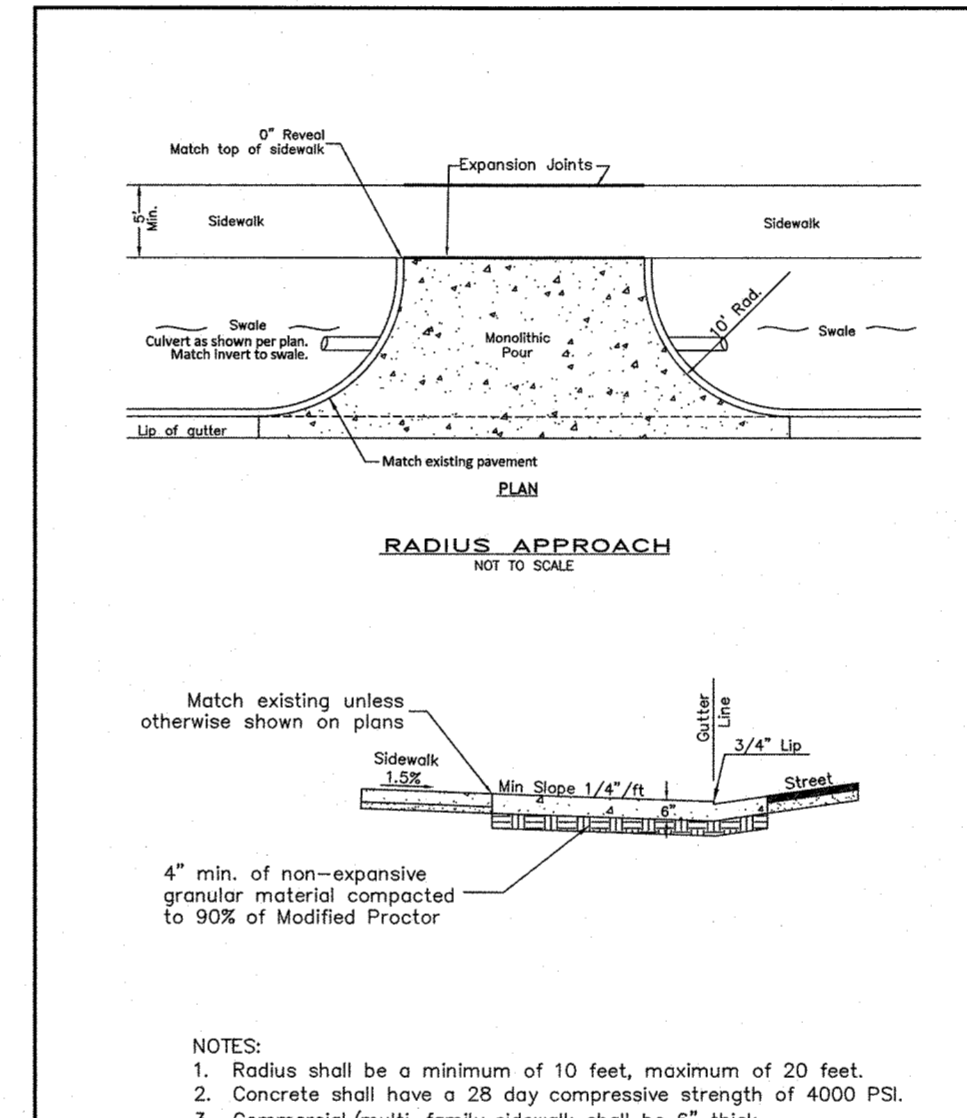
PEDESTRIAN RAMP DETAIL
NO SCALE



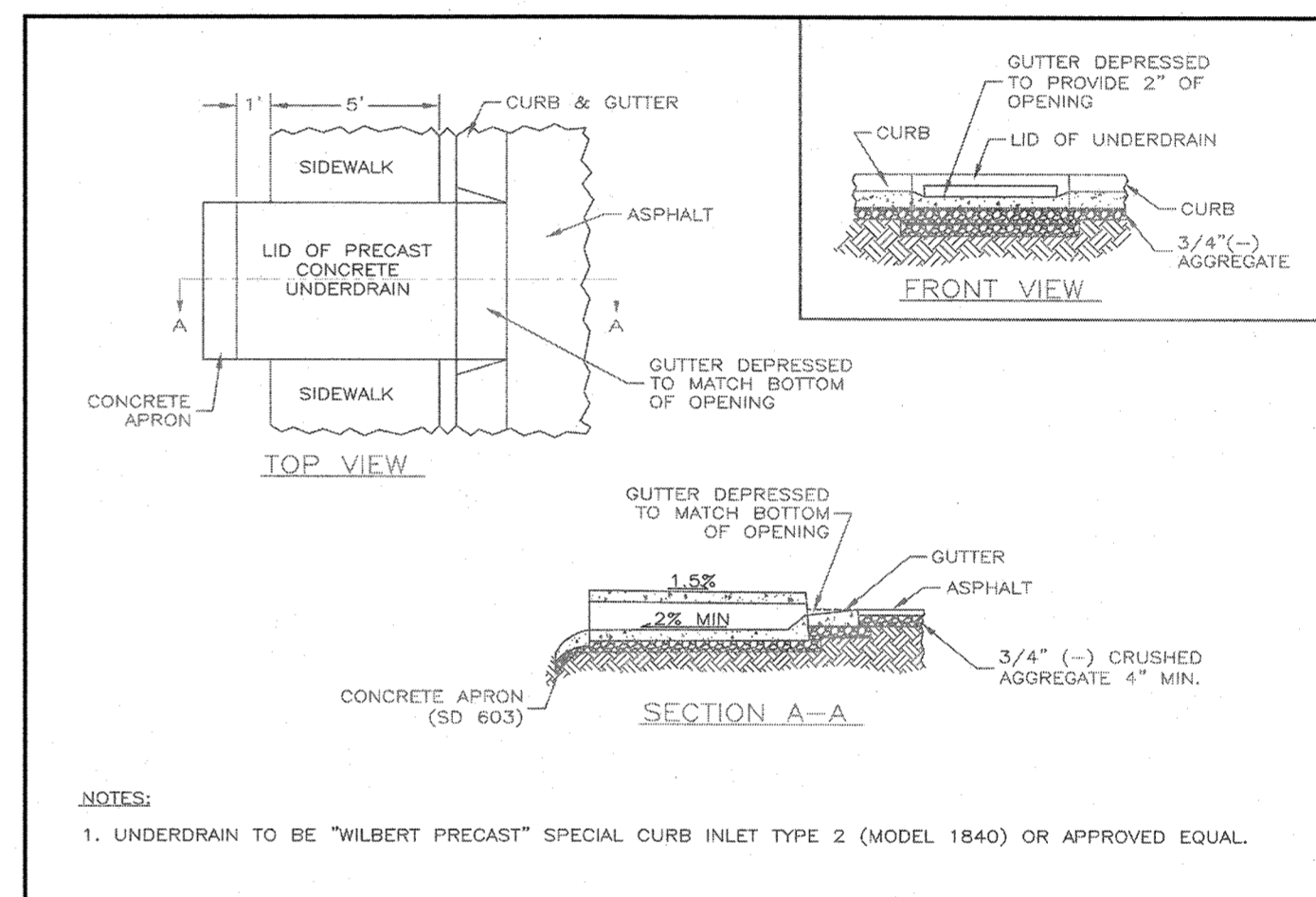
SIDEWALK DETAIL
NO SCALE



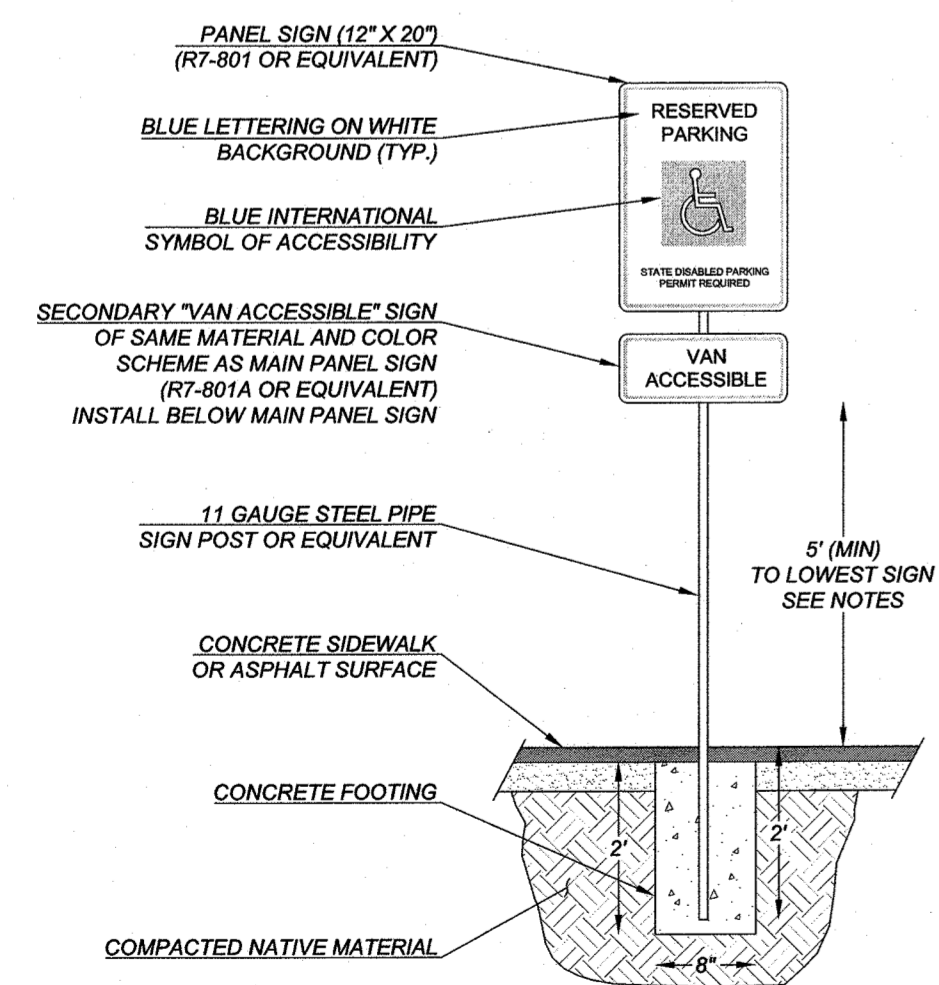
DRAINAGE CURB CUT DETAIL
NO SCALE



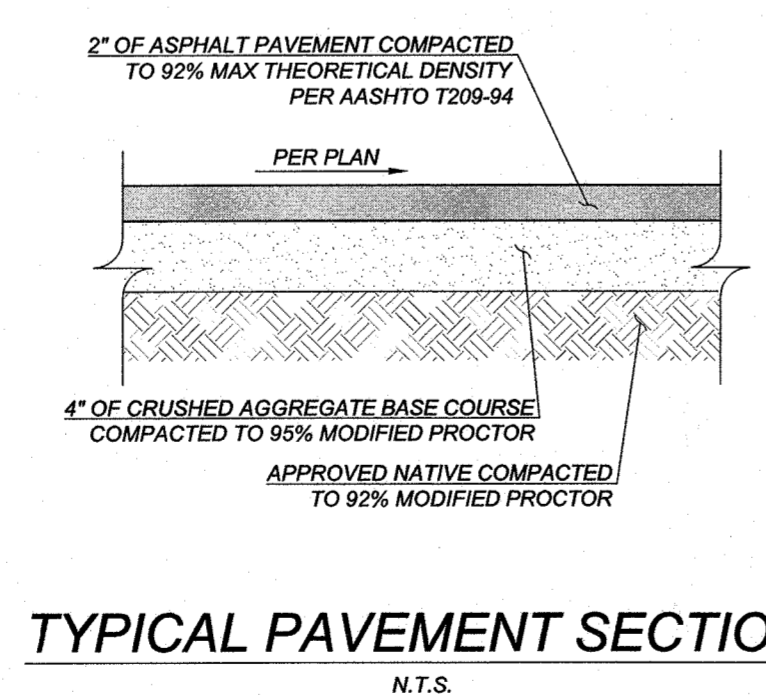
DRIVEWAY WITH CULVERT DETAIL
NO SCALE



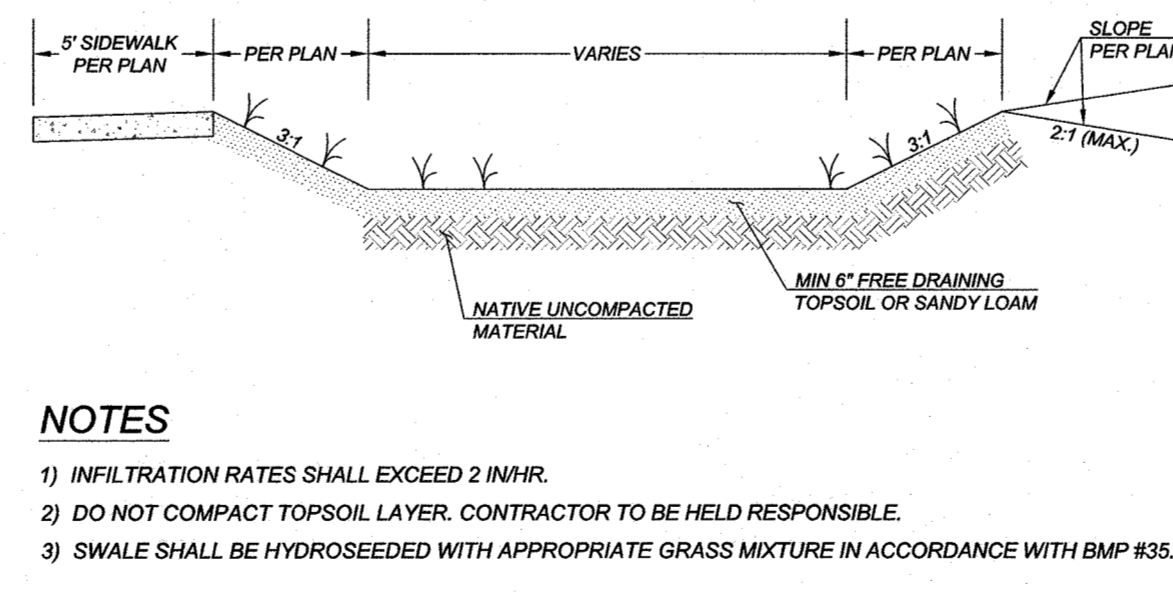
SIDEWALK UNDERDRAIN DETAIL
NO SCALE



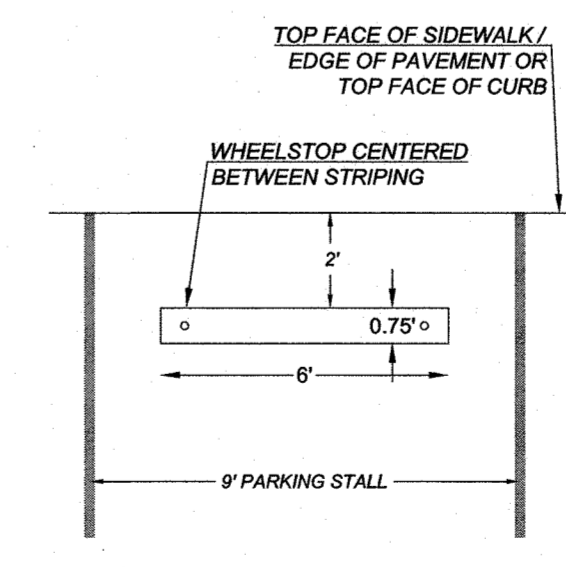
ADA SIGNAGE DETAIL
N.T.S.



TYPICAL PAVEMENT SECTION
N.T.S.

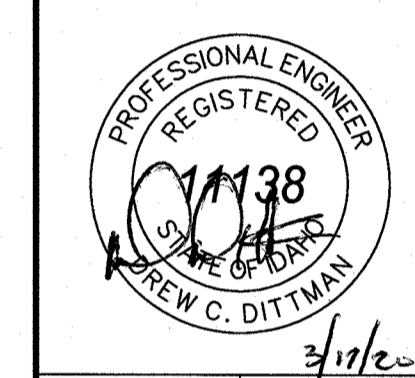
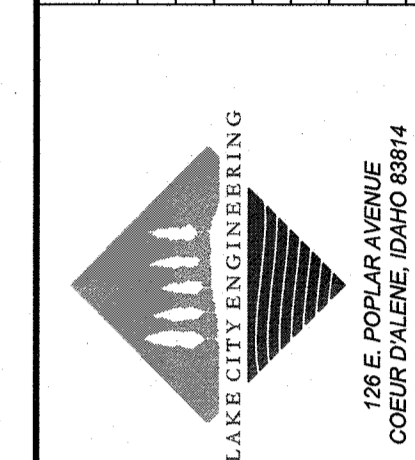


GRASSY INFILTRATION AREA DETAIL
N.T.S.



WHEEL STOP DETAIL
N.T.S.

NO.	DESCRIPTION	INITIAL	DATE



ALDER CREEK TOWNHOMES
PROJECT DETAILS
PONDERAY, IDAHO

ONE INCH
AT FULL SIZE IF NOT ONE INCH SCALE ACCORDINGLY

DESIGNED BY: DCD
DRAFTED BY: GDH/SMA
DATE: 03/16/2020
JOB NO: LCE 19-007

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CALL TWO BUSINESS DAYS BEFORE YOU DIG

8
8

mcrh. Plotted: Mar 16, 2020 - 1:12pm. L:\2019\19-007\ACAD\19-007 - CONST.dwg