WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

CHELAN WILDLIFE AREA – SWAKANE UNIT
SWAKANE CANYON GUN RANGE
CN:R21:2019–1

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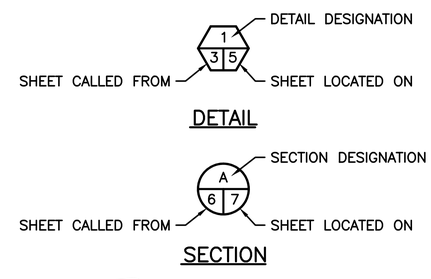
SHEET SYMBOLS



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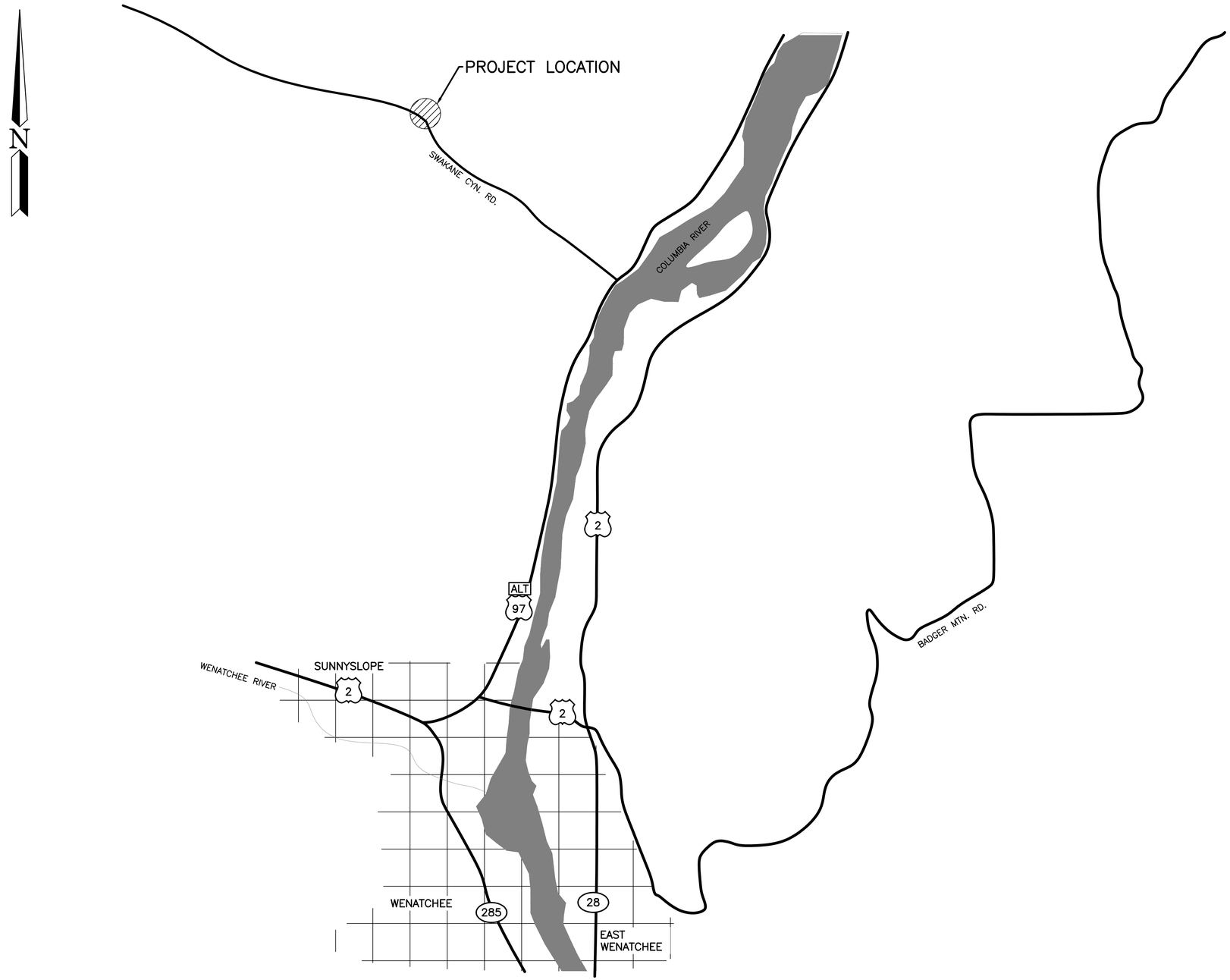
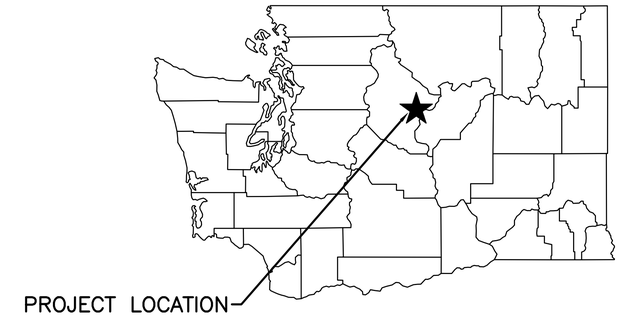
ABBREVIATIONS

ALUM	–	ALUMINUM
L	–	ANGLE
APPROX	–	APPROXIMATELY
BM	–	BENCH MARK
BVCE	–	BEGIN VERTICAL CURVE ELEVATION
BVCS	–	BEGIN VERTICAL CURVE STATION
CL	–	CENTERLINE
CMP	–	CORRUGATED METAL PIPE
CLR	–	CLEARANCE
CONC	–	CONCRETE
CSBC	–	CRUSHED SURFACE BASE COURSE
CSTC	–	CRUSHED SURFACE TOP COURSE
DIA	–	DIAMETER
ELEV	–	ELEVATION
EVCE	–	END VERTICAL CURVE ELEVATION
EVCS	–	END VERTICAL CURVE STATION
FTG	–	FOOTING
GALV	–	GALVANIZED
ID	–	INSIDE DIAMETER
IE	–	INVERT ELEVATION
LVC	–	LENGTH OF VERTICAL CURVE
MFG	–	MANUFACTURER'S
MISC	–	MISCELLANEOUS
OC	–	ON CENTER
OD	–	OUTSIDE DIAMETER
PL	–	PLATE
PVI	–	POINT OF VERTICAL INTERSECTION
REQ'D	–	REQUIRED
SEC	–	SECTION
SPEC'S	–	PROJECT SPECIFICATIONS
SS	–	STAINLESS STEEL
STA	–	STATION
TYP	–	TYPICAL

PROJECT NO.	
CN:R21:2019–1	
SHEET	OF
1	18



VICINITY MAP
NOT TO SCALE



STATE MAP
NOT TO SCALE

DRIVING DIRECTIONS

FROM DOWNTOWN WENATCHEE FOLLOW N WENATCHEE AVE TO EASY ST/OLD STATE HWY 2 IN SUNNYSLOPE. TAKE THE EASY STREET EXIT FROM N WENATCHEE AVE. THEN TAKE PENNY RD AND EUCLID AVE TO US-97 ALT N, THEN FOLLOW US-97 ALT N TO SWAKANE RD TURN LEFT AND FOLLOW FOR 1.8 MILES

WASHINGTON DEPARTMENT OF
FISH & WILDLIFE

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SYM	DATE	REVISION DESCRIPTION	BY

APPROVED AND RELEASED FOR CONSTRUCTION
CHIEF ENGINEER ..... DATE: .....
PROGRAM ..... DATE: .....

DESIGNED BY J. HANSEN
CHECKED BY N. WHITE
DRAWN BY J. LONG
DATE 05/15/2020

CHELAN WILDLIFE AREA

SWAKANE CANYON GUN RANGE
STATE & VICINITY MAP

PROJECT NO. CN:R21:2019-1

SHEET 2 OF 18

STANDARD PLAN NOTES:

1. ALL CONSTRUCTION TECHNIQUES AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT CHELAN COUNTY AND WASHINGTON STATE DEPARTMENT OF FISH AND WILDLIFE (WDFW) STANDARDS AND AS SHOWN IN THESE PLANS.
2. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY FOR CONSTRUCTION OF THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS OR DESIGNATED TO BE PROVIDED, INSTALLED, CONSTRUCTED, REMOVED AND RELOCATED UNLESS SPECIFICALLY NOTED OTHERWISE.
3. A COPY OF THE APPROVED PLANS MUST BE ON SITE WHENEVER CONSTRUCTION IS IN PROGRESS.
4. THE CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED FOR WORK THAT ARE NOT PROVIDED BY THE WDFW PRIOR TO START OF CONSTRUCTION.
5. PRIOR TO ANY CONSTRUCTION ACTIVITY, THE CONTRACTOR SHALL SCHEDULE AND ATTEND A PRE-CONSTRUCTION MEETING WITH THE WDFW, THE COUNTY, AND OWNER'S REPRESENTATIVE. THE CONTRACTOR SHALL NOTIFY THE OWNER'S PROFESSIONAL ENGINEERING CONSULTANT AND THE CHELAN COUNTY OF PUBLIC WORKS OF THE PRE-CONSTRUCTION MEETING TIME AND LOCATION.
6. ALL WORK OPERATIONS CONDUCTED ON THE PROJECT SITE, INCLUDING BUT NOT LIMITED TO WARMING UP, REPAIR, ARRIVAL AND/OR DEPARTURE OF ANY CONSTRUCTION EQUIPMENT SHALL BE LIMITED TO THE HOURS OF 6AM TO SUNSET EVERY DAY UNLESS OTHERWISE APPROVED BY WDFW AND CHELAN COUNTY.
7. ALL SURVEYING AND STAKING OF IMPROVEMENTS SHALL BE APPROVED BY WDFW. CONTRACTOR SHALL COORDINATE AND VERIFY WITH THE DEPARTMENT OF FISH AND WILDLIFE PRIOR TO OBTAINING STAKING SERVICES.
8. THE CONTRACTOR SHALL NOTIFY CHELAN FIRE AND RESCUE/FIRE DISTRICT (509-682-4476) OF ALL CONSTRUCTION ACTIVITIES ON THIS PROJECT.
9. ALL LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN ESTABLISHED BY FIELD SURVEY OR OBTAINED FROM AVAILABLE RECORDS AND SHOULD THEREFORE BE CONSIDERED APPROXIMATE ONLY AND NOT NECESSARILY COMPLETE. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INDEPENDENTLY VERIFY THE ACCURACY OF ALL UTILITY LOCATIONS SHOWN AND TO FURTHER DISCOVER AND AVOID ANY OTHER UTILITIES NOT SHOWN HEREON WHICH MAY BE AFFECTED BY THE IMPLEMENTATION OF THIS PLAN.
10. THE CONTRACTOR SHALL LOCATE AND PROTECT ALL ACTIVE CASTINGS AND UTILITIES DURING CONSTRUCTION AND SHALL CONTACT THE UNDERGROUND UTILITIES LOCATOR SERVICE (1-800-424-5555) AT LEAST 48 HOURS PRIOR TO CONSTRUCTION.
11. THE CONTRACTOR SHALL ADJUST ALL EXISTING MANHOLE RIMS, DRAINAGE STRUCTURE LIDS, VALVE BOXES AND UTILITY ACCESS STRUCTURES TO FINISH GRADE WITHIN AREAS AFFECTED BY THE PROPOSED IMPROVEMENTS.
12. THE CONTRACTOR SHALL PROVIDE FOR ALL COMPACTION TESTS REQUIRED BY THE INSPECTOR.
13. BACKFILL MATERIAL SHALL MEET THE GRADING NOTES PROVIDED HEREIN AND THE RECOMMENDATIONS PROVIDED BY THE GEOTECHNICAL ENGINEER.
14. INSPECTION AND ACCEPTANCE OF ALL WORK WILL BE ACCOMPLISHED BY THE COUNTY INSPECTOR. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE AND SCHEDULE APPROPRIATE INSPECTIONS, ALLOWING PROPER ADVANCE NOTICE. THE INSPECTOR MAY REQUIRE RECONSTRUCTION OF ITEMS THAT DO NOT MEET THE CONTRACT DOCUMENTS OR THAT WERE CONSTRUCTED WITHOUT INSPECTION.
15. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN BEST MANAGEMENT PRACTICES AS SHOWN HEREIN TO INSURE THAT SEDIMENT-LADEN WATER DOES NOT ENTER THE WATER OF THE STATE. AS CONSTRUCTION PROGRESSES AND UNEXPECTED (SEASONAL) CONDITIONS DICTATE, ADDITIONAL BEST MANAGEMENT PRACTICES MAY BE REQUIRED. THEREFORE, DURING THE COURSE OF CONSTRUCTION IT SHALL BE THE OBLIGATION AND RESPONSIBILITY OF THE CONTRACTOR TO ADDRESS ANY NEW CONDITIONS THAT MAY BE CREATED BY HIS ACTIVITIES AND TO PROVIDE ADDITIONAL FACILITIES THAT MAY BE NEEDED TO PROTECT ADJACENT PROPERTIES.
16. CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL AS NECESSARY THROUGHOUT THE PROJECT. TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND CHELAN COUNTY STANDARDS.
17. CONTRACTOR SHALL COORDINATE ALL ELECTRICAL WORK WITH PACIFIC POWER.
18. CONTRACTOR SHALL NOT MAKE ANY REVISIONS IN THE FIELD WITHOUT PRIOR WRITTEN APPROVAL BY WDFW AND/OR THE ENGINEER.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE SAFEGUARDS, SAFETY DEVICES, PROTECTIVE EQUIPMENT, FLAGGERS, AND ANY OTHER NEEDED ACTIONS TO PROTECT THE LIFE, HEALTH, AND SAFETY OF THE PUBLIC, AND TO PROTECT PROPERTY IN CONNECTION WITH THE PERFORMANCE OF WORK COVERED BY THE CONTRACTOR. ANY WORK WITHIN THE TRAVELED RIGHT-OF-WAY THAT MAY INTERRUPT NORMAL TRAFFIC FLOW SHALL REQUIRE AT LEAST ONE FLAGGER FOR EACH LANE OF TRAFFIC AFFECTED. ALL SECTIONS OF THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT) STANDARD SPECIFICATIONS 1-07.23 - TRAFFIC CONTROL, SHALL APPLY.
20. ANY TRENCH DEEPER THAN 4 FEET WILL REQUIRE SHORING OR ANOTHER METHOD FOR TRENCH WALL STABILIZATION.

EARTHWORK NOTES:

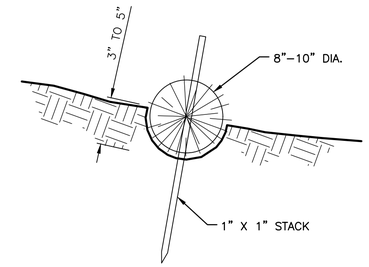
1. THE EARTHWORK QUANTITIES SHOWN ARE PROVIDED FOR THE PERMITTING PURPOSES ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CARRY OUT THE CUT/FILL, IMPORT/EXPORT AS NECESSARY TO MEET THE DESIGN GRADES AS SHOWN ON THE PLANS REGARDLESS OF THE ESTIMATED EARTHWORK QUANTITIES AS INDICATED. SIGNIFICANT REVISIONS TO THE QUANTITIES NEED REVIEW BY THE WDFW AND/OR ENGINEER.
2. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO INCLUDE ALL MATERIAL AND LABOR REQUIRED WITHIN THE BID PRICE, FOR EARTHWORK CONSTRUCTION, TO CARRY OUT THE CUT/FILL AND/OR IMPORT/EXPORT AS NECESSARY TO MEET THE DESIGN GRADES SHOWN ON THE PLANS. CONTRACTOR IS TO DELIVER TO WDFW THE PROJECT IN A COMPLETE AND OPERATIONAL MANNER. EARTHWORK QUANTITIES SHOWN ON THE PLANS OR REPRESENTED BY THE ENGINEER ARE APPROXIMATE AND ARE FOR PERMITTING PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR ANY INVESTIGATION OR STUDIES THAT ARE REQUIRED BY THE CONTRACTOR TO SATISFY THIS REQUIREMENT. NO ADDITIONAL COMPENSATION SHALL BE PAID FOR SAID CUT/FILL AND/OR IMPORT/EXPORT.

STANDARD GRADING NOTES:

1. NATIVE ON-SITE SILTY/SANDY SOILS ARE SUITABLE FOR USE AS ENGINEERED FILL. NATIVE ON-SITE SOILS SHALL BE FREE OF SIGNIFICANT ORGANICS, OVERSIZE MATERIAL GREATER THAN 4-INCHES, OR OTHER DELETERIOUS MATTER.
2. NATIVE ON-SITE SOIL SHALL BE PLACED IN MAXIMUM 12-INCH LIFTS (LOOSE) AND COMPACTED TO AT LEAST 92 PERCENT RELATIVE COMPACTION AS DETERMINED BY ASTM D1557 OR 95 PERCENT OF ASTM D698 NEAR ITS OPTIMUM MOISTURE CONTENT. COMPACTION OF NATIVE ON-SITE SOILS SHALL BE PERFORMED WITHIN A STRICT RANGE OF ±2% OF OPTIMUM MOISTURE TO ACHIEVE THE PROPER DEGREE OF COMPACTION.
3. NATIVE ON-SITE SOILS ARE ANTICIPATED TO BE READILY CUT WITH CONVENTIONAL STANDARD DUTY GRADING EQUIPMENT.
4. NATIVE ON-SITE SOILS MAY BE PRONE TO CAVING IN DEEPER EXCAVATION. CONTRACTOR SHALL ENSURE THAT APPROPRIATE MEASURES AND SAFETY PRECAUTIONS ARE IMPLEMENTED DURING THESE OPERATIONS.
5. NATIVE ON-SITE SILTY SOILS ARE SUSCEPTIBLE TO WIND AND EROSION WHEN EXPOSED DURING GRADING OPERATIONS. CONTRACTOR SHALL IMPLEMENT APPROPRIATE BMPS TO CONTROL DUST, EROSION AND SEDIMENT IN RUNOFF.
6. PRIOR TO ANY EARTHWORK OPERATIONS, THE UPPER LAYER OF SOIL CONTAINING ORGANIC MATTER AND ROOTS (TOPSOIL) SHALL BE GRUBBED, STRIPPED AND SEPARATED FROM THE SOILS INTENDED FOR REUSE. GENERALLY, THIS DEPTH IS APPROXIMATELY WITHIN TOP 4 TO 6 INCHES.
7. SITE GRADING SHOULD BE PERFORMED DURING DRYER PERIODS OF THE YEAR. NO FILL SHALL BE PLACED ON FROZEN SURFACE. UNPROTECTED SUBGRADE SOILS COULD DETERIORATE UNDER CONSTRUCTION TRAFFIC DURING INCLEMENT WEATHER CONDITIONS AND CONSTRUCTION EQUIPMENT SHOULD BE FORBIDDEN FROM TRAVERSING PREPARED SUBGRADE SOILS DURING INCLEMENT WEATHER CONDITIONS (WET WEATHER).
8. SOIL CONDITIONS SHALL BE EVALUATED BY IN-PLACE DENSITY TESTING, VISUAL EVALUATION, PROBING, AND PROOF-ROLLING OF THE FILL(S) AND RE-COMPACTED ON-SITE SOIL AS IT IS PREPARED TO CHECK FOR COMPLIANCE WITH RECOMMENDATIONS OF THIS REPORT. A MOISTURE-DENSITY CURVE SHALL BE ESTABLISHED IN ACCORDANCE WITH THE ASTM D1557 METHOD FOR ALL FILL MATERIALS USED AS STRUCTURAL FILL.
9. FILL SLOPES SHOULD BE CONSTRUCTED WITH SUITABLE STRUCTURAL FILL SOIL THAT HAS BEEN PROPERLY MOISTURE CONDITIONED. ALL FILL SHALL BE PLACED IN UNIFORM LIFTS, AND COMPACTED TO A MINIMUM 92 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D1557 OR 95 PERCENT OF ASTM D698 METHOD.
10. COMPACTION TESTING SHALL BE DONE IN THE FIELD WITH A NUCLEAR DENSITY GAUGE IN ACCORDANCE WITH ASTM D6938.
11. THICKNESS OF THE LOOSE, NON-COMPACTED, LIFT OF STRUCTURAL FILL SHALL NOT EXCEED 8 INCHES FOR HEAVY-DUTY COMPACTORS OR 4 INCHES FOR HAND OPERATED COMPACTORS.
12. FILL SLOPES SHOULD BE OVERFILLED AND TRIMMED BACK TO UNIFORMLY COMPACTED MATERIAL. THE FINAL SLOPE SURFACE SHOULD BE TRACK-WALKED OR GRID ROLLED TO IMPROVE THE SLOPE'S RESISTANCE TO EROSION.
13. WHERE FILL SLOPES ARE TO BE CONSTRUCTED ON NATURAL SLOPES STEEPER THAN 5H:1V, THE FILL SHOULD BE KEYED AND BENCHED INTO FIRM NATURAL SOIL. KEYS FOR ALL SLOPE RECONSTRUCTION GREATER THAN 5 FEET IN HEIGHT SHOULD BE CUT INTO FIRM NATURAL SOIL. THE MINIMUM KEY DIMENSIONS ARE 5 FEET HORIZONTAL AND 1 FEET VERTICAL FROM THE LOWEST ADJACENT SOIL GRADE.
14. PROPOSED CUT SLOPE FACE SHALL BE CONSTRUCTED BY KEYING AND BENCHING INTO NATIVE SOILS, ALONG WITH REPLACEMENT WITH ENGINEERED FILL. BENCHING DIMENSIONS INTO NATIVE CUT SLOPES SHALL BE A MINIMUM 4 FEET HORIZONTAL AND MAXIMUM 2 FEET VERTICAL FROM THE LOWEST ADJACENT SOIL GRADE. THE EXPOSED NATIVE SURFACE OF THE OVERCUT BENCH SHOULD BE SCARIFIED, MOISTURE CONDITIONED, AND RECOMPACTED TO A DENSE AND NON-YIELDING SURFACE PRIOR TO REPLACEMENT WITH ENGINEERED FILL. THE RECONSTRUCTED CUT SLOPE FACES SHALL BE OVERBUILT AND CUT BACK TO GRADE, EXPOSING THE FIRM AND COMPACTED SURFACE.
15. BASED ON THE GRADATION OF THE SOILS PROPOSED FOR CUT GRADING, WE ANTICIPATE THE COMPOSITE STOCKPILE OF CUT SOILS TO CONTAIN APPROXIMATELY 50 TO 65% FINES (PASSING NO. 200 SIEVE). THESE SOILS WILL BE ADEQUATE FOR PROVIDING THE 3' THICK BULLET RICOCHET IMPACT PROTECTION LAYER.
16. IMPORTED SOILS, IF NECESSARY, SHALL CONSIST OF WELL-GRADED, AGGREGATE MATERIAL MEETING THE GRADING AND QUALITY REQUIREMENTS OF 2018 WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT) STANDARD SPECIFICATIONS. SOILS USED FOR CONSTRUCTION OF EARTHEN BERMS SHALL CONFORM WITH WSDOT SPEC. SECTION 9-03.14(1) (GRAVEL BORROW).
17. ALL EXCESS SOIL SHALL BE SPREAD ON-SITE AS SHOWN IN THESE PLANS. NO EXPORT AND DISPOSAL OF SOIL IS ANTICIPATED. SOILS MAY BE MOVED TO A WDFW SITE LESS THAN 1 MILE AWAY FROM THE PROJECT SITE AS DIRECTED BY WDFW.

DISCREPANCIES:

IF THERE ARE ANY DISCREPANCIES BETWEEN DIMENSIONS IN DRAWINGS AND EXISTING CONDITIONS WHICH WILL AFFECT THE WORK, THE CONTRACTOR SHALL BRING SUCH DISCREPANCIES TO THE ATTENTION OF THE ENGINEER FOR ADJUSTMENT BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER FITTING OF ALL WORK AND FOR THE COORDINATION OF ALL TRADES, SUBCONTRACTORS, AND PERSONS ENGAGED UPON THIS CONTRACT.



STRAW WATTLE DETAIL

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS:

1. PREPARE THE SLOPE BEFORE THE WATTLING PROCEDURE IS STARTED.
2. SHALLOW GULLIES SHOULD BE SMOOTHED AS WORK PROGRESSES.
3. DIG SMALL TRENCHES ACROSS THE SLOPE ON CONTOUR, TO PLACE ROLLS IN. THE TRENCH SHOULD BE DEEP ENOUGH TO ACCOMMODATE HALF THE THICKNESS OF THE ROLL. WHEN THE SOIL IS LOOSE AND UNCOMPACTED, THE TRENCH SHOULD BE DEEP ENOUGH TO BURY THE ROLL 2/3 OF ITS THICKNESS BECAUSE THE GROUND WILL SETTLE.
4. IT IS CRITICAL THAT ROLLS ARE INSTALLED PERPENDICULAR TO WATER MOVEMENT, PARALLEL TO THE SLOPE CONTOUR.
5. START BUILDING TRENCHES AND INSTALL ROLLS FROM THE BOTTOM OF THE SLOPE AND WORK UP.
6. CONSTRUCT TRENCHES AT CONTOUR INTERVALS OF 3-12 FEET APART DEPENDING ON STEEPNESS OF SLOPE. THE STEEPER THE SLOPE, THE CLOSER TOGETHER THE TRENCHES. 1:1=10' 2:1=20' 3:1=30' 4:1=40'
7. LAY THE ROLL ALONG THE TRENCHES FITTING IT SNUGLY AGAINST THE SOIL. MAKE SURE NO GAPS EXIST BETWEEN THE SOIL AND THE STRAW WATTLE.
8. USE A STRAIGHT BAR TO DRIVE HOLES THROUGH THE WATTLE AND INTO THE SOIL FOR THE WILLOW OR WOODEN STAKES.
9. DRIVE THE STAKE THROUGH PREPARED HOLE INTO SOIL. LEAVE ONLY 1 OR 2 INCHES OF STAKE EXPOSED ABOVE ROLL.
10. IF USING WILLOW STAKES REFER TO LIVE STAKING BEST MANAGEMENT PRACTICES.
11. INSTALL STAKES AT LEAST EVERY 4 FEET APART THROUGH THE WATTLE. ADDITIONAL STAKES MAY BE DRIVEN ON THE DOWNSLOPE SIDE OF THE TRENCHES ON HIGHLY EROSIVE OR VERY STEEP SLOPES.
12. INSPECT THE STRAW ROLLS AND THE SLOPES AFTER SIGNIFICANT STORMS. MAKE SURE THE ROLLS ARE IN CONTACT WITH THE SOIL.
13. REPAIR ANY RILLS OR GULLYS PROMPTLY.
14. RESEED OR REPLANT VEGETATION IF NECESSARY UNTIL THE SLOPE IS STABILIZED.

WASHINGTON DEPARTMENT OF
FISH & WILDLIFE

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REV.	DATE	REVISION DESCRIPTION	BY
		APPROVED AND RELEASED FOR CONSTRUCTION	

CHIEF ENGINEER ..... DATE: .....
PROGRAM ..... DATE: .....

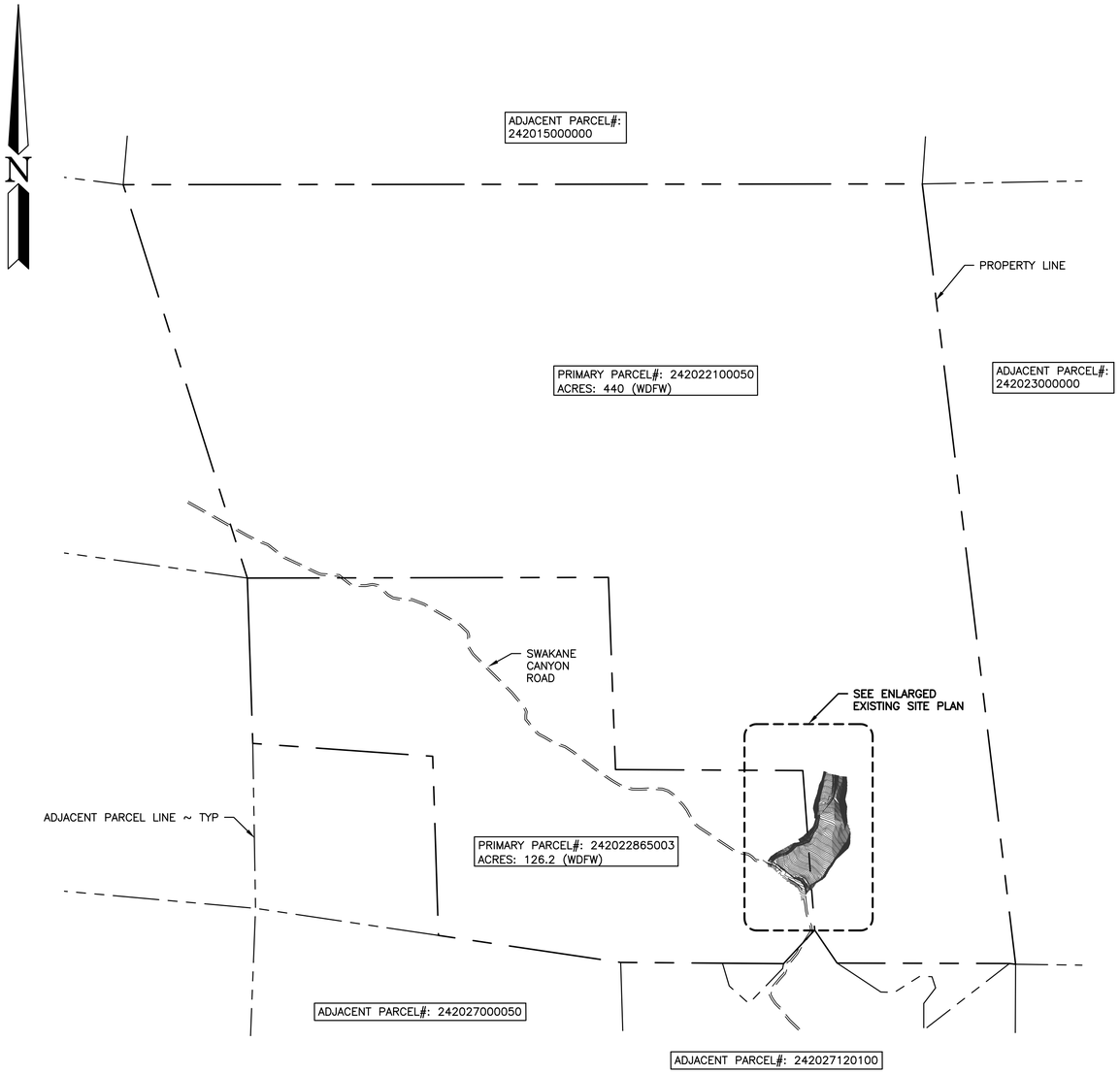
DESIGNED BY J. HANSEN
CHECKED BY N. WHITE
DRAWN BY J. LONG
DATE 05/15/2020

CHELAN WILDLIFE AREA

SWAKANE CANYON GUN RANGE
GENERAL NOTES &
EROSION CONTROL DETAIL

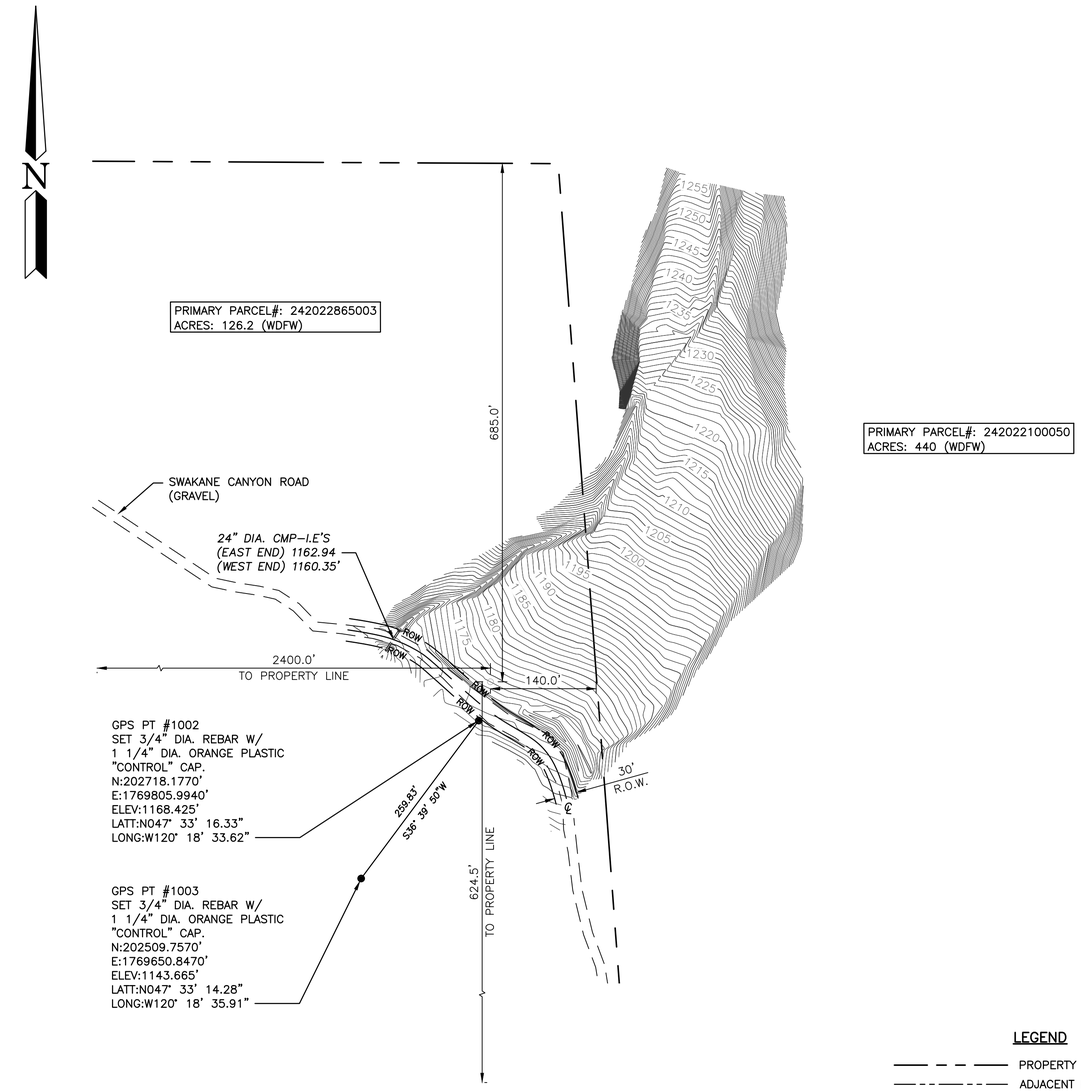
PROJECT NO. CN:R21:2019-1

SHEET 3 OF 18



PARCEL SITE PLAN

0100 300 500 1000



ENLARGED EXISTING SITE PLAN

0 50 100 200

LEGEND

- PROPERTY LINE
- ADJACENT PROPERTY LINE
- GRAVEL ROAD
- ROW — RIGHT OF WAY
- SURVEY MONUMENT
- TELECOM PEDESTAL
- EXISTING MINOR CONTOURS
- EXISTING MAJOR CONTOURS

DATUM

NAVD 88

PROPERTY INFORMATION:

ADDRESS:	SWAKANE CANYON ROAD WENATCHEE WA 98801
COUNTY:	CHELAN
PARCEL #:	242022100050 242022865003
TOWNSHIP:	24N
RANGE:	20EWM
SECTION:	22

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FISH & WILDLIFE

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PARCEL & EXISTING SITE PLAN

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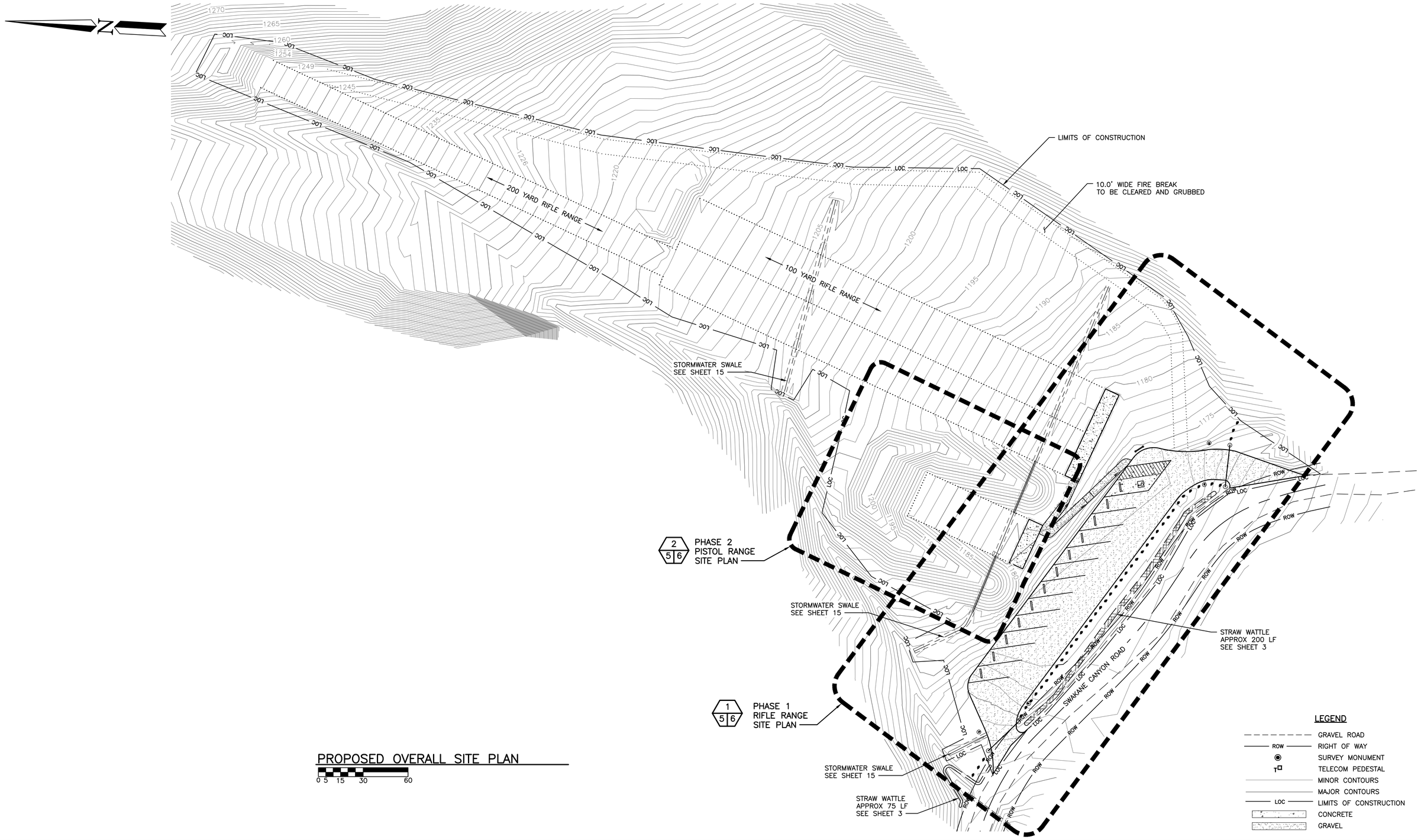
SHEET 4 OF 18



PROPOSED OVERALL SITE PLAN

0 5 15 30 60

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SWAKANE CANYON GUN RANGE

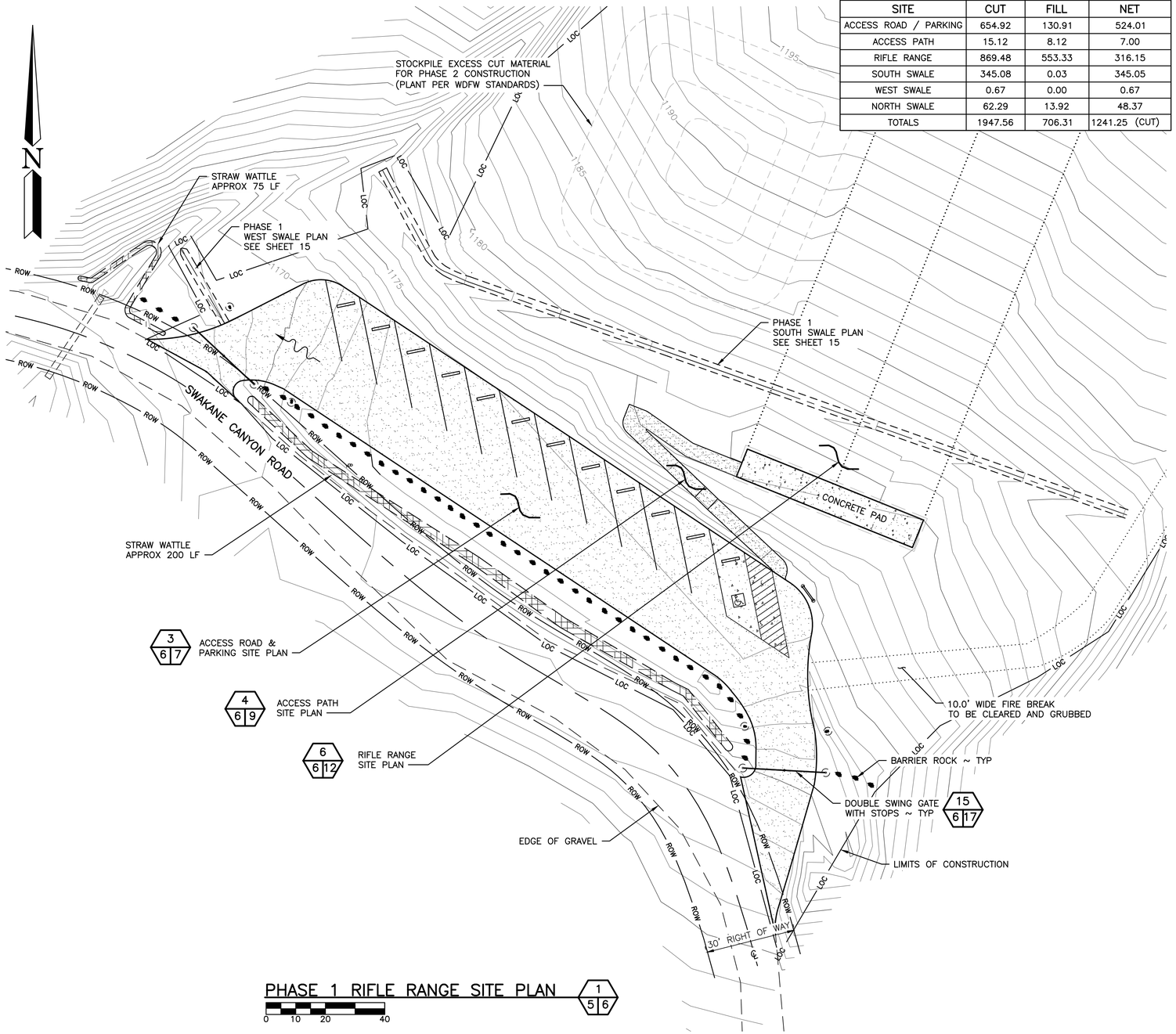
PROPOSED OVERALL SITE PLAN

& TEMPORARY STORMWATER & EROSION CONTROL

PROJECT NO. CN:R21:2019-1

SHEET 5 OF 18

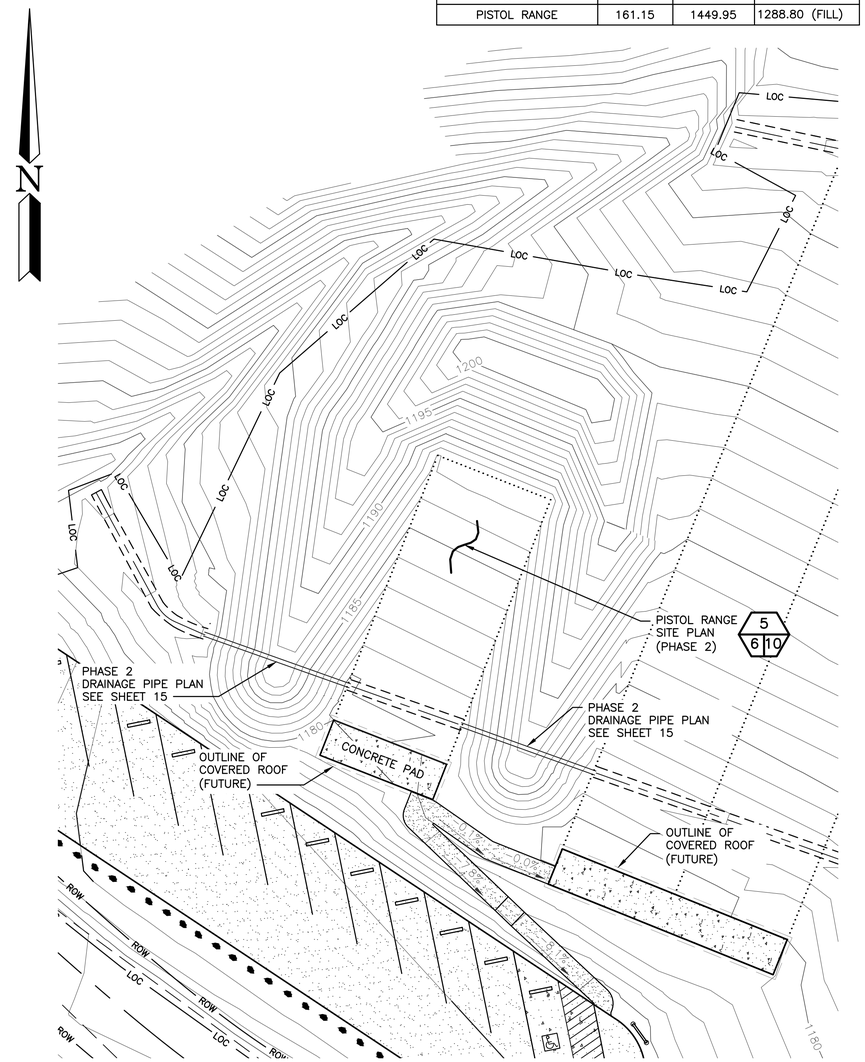
(PHASE 1) CUT & FILL DATA (IN CUBIC YARDS)			
SITE	CUT	FILL	NET
ACCESS ROAD / PARKING	654.92	130.91	524.01
ACCESS PATH	15.12	8.12	7.00
RIFLE RANGE	869.48	553.33	316.15
SOUTH SWALE	345.08	0.03	345.05
WEST SWALE	0.67	0.00	0.67
NORTH SWALE	62.29	13.92	48.37
TOTALS	1947.56	706.31	1241.25 (CUT)



PHASE 1 RIFLE RANGE SITE PLAN 1 5 6

0 10 20 40

(PHASE 2) CUT & FILL DATA (IN CUBIC YARDS)			
SITE	CUT	FILL	NET
PISTOL RANGE	161.15	1449.95	1288.80 (FILL)



PHASE 2 PISTOL RANGE SITE PLAN 2 5 6

0 10 20 40

LEGEND

- GRAVEL ROAD
- ROW — RIGHT OF WAY
- SURVEY MONUMENT
- TELECOM PEDESTAL
- MINOR CONTOURS
- MAJOR CONTOURS
- LOC — LIMITS OF CONSTRUCTION
- CONCRETE
- GRAVEL

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CHELAN WILDLIFE AREA

SWAKANE CANYON GUN RANGE

ENLARGED SITE PLANS

PROJECT NO. CN:R21:2019–1

SHEET 6 OF 18

PARKING POINT DATA

POINT #	EASTING	NORTHING	ELEVATION	DESCRIPTION
80	1769746.37	202830.08	1168.65	PARKING START CURVE
81	1769783.80	202840.46	1171.00	PARKING START CURVE
82	1769941.90	202691.25	1171.80	PARKING START CURVE
83	1769940.70	202722.98	1174.00	PARKING MID CURVE
84	1769716.90	202823.17	1166.79	PARKING END CURVE
85	1769768.97	202841.63	1169.96	PARKING END CURVE
86	1769932.98	202741.53	1174.59	PARKING END CURVE
87	1769857.93	202791.30	1172.77	PARKING EDGE

PARKING POINT DATA

POINT #	EASTING	NORTHING	ELEVATION	DESCRIPTION
88	1769933.32	202715.81	1173.88	PARKING ADA STALL
89	1769912.24	202729.84	1173.88	PARKING ADA STALL
90	1769924.24	202727.01	0.00	PARKING CURVE CENTER
91	1769775.45	202829.85	0.00	PARKING CURVE CENTER
92	1769945.67	202677.08	0.00	EAST GATE
93	1769917.72	202678.65	0.00	EAST GATE
94	1769752.91	202808.04	0.00	WEST GATE
95	1769732.48	202827.18	0.00	WEST GATE

ACCESS ROAD POINT DATA

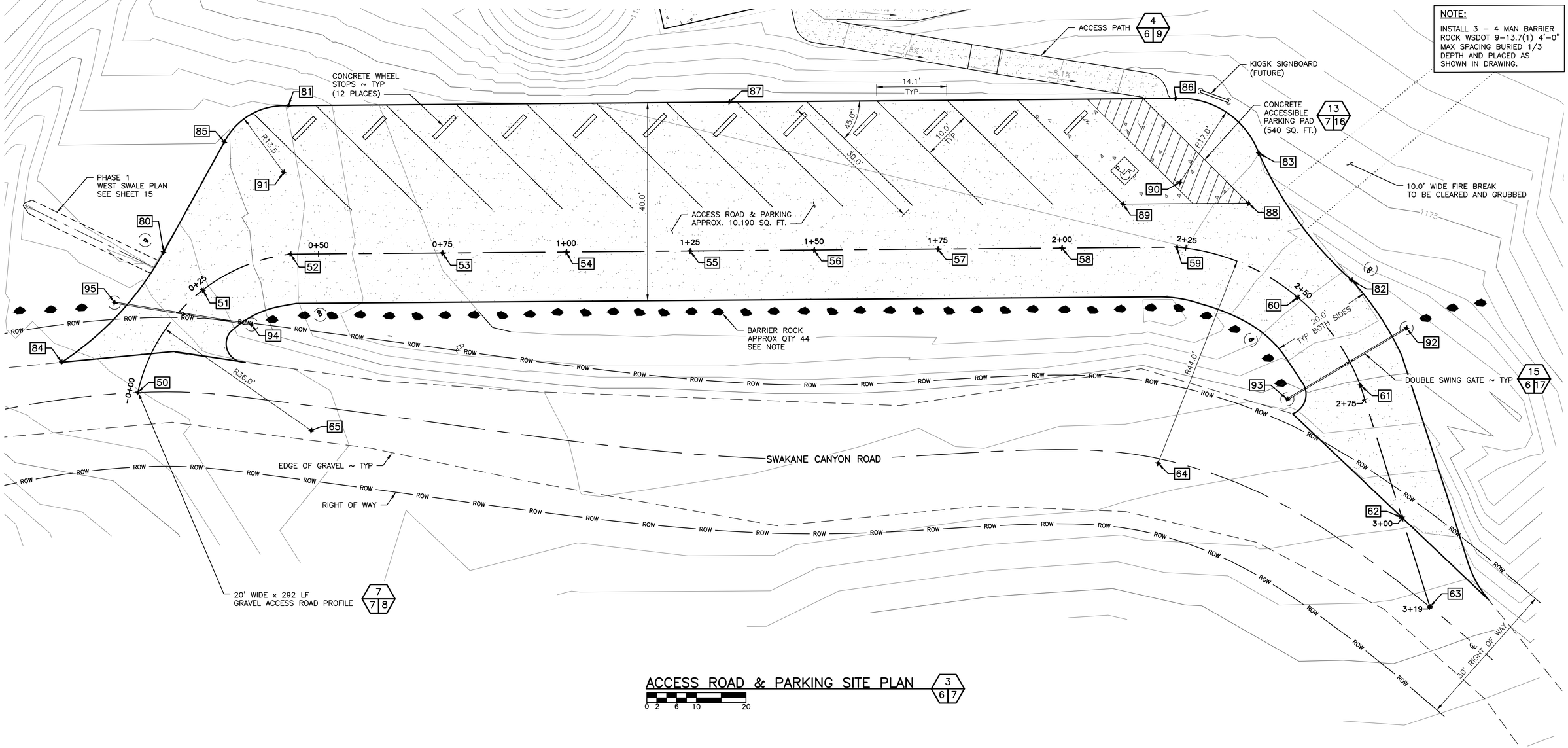
POINT #	EASTING	NORTHING	ELEVATION	DESCRIPTION
50	1769726.23	202809.52	1166.97	ROAD START CURVE
51	1769748.67	202819.33	1168.86	ROAD CL
52	1769767.38	202815.41	1170.86	ROAD END CURVE
53	1769792.92	202798.47	1173.07	ROAD CL
54	1769813.75	202784.64	1173.38	ROAD CL
55	1769834.58	202770.82	1173.50	ROAD CL
56	1769855.41	202757.00	1173.63	ROAD CL
57	1769876.24	202743.17	1173.75	ROAD CL

ACCESS ROAD POINT DATA

POINT #	EASTING	NORTHING	ELEVATION	DESCRIPTION
58	1769897.07	202729.35	1173.88	ROAD CL
59	1769916.39	202716.53	1173.99	ROAD START CURVE
60	1769930.94	202694.51	1172.10	ROAD CL
61	1769931.50	202672.72	1169.90	ROAD END CURVE
62	1769923.51	202645.91	1166.97	ROAD CL
63	1769918.13	202627.83	1165.70	ROAD END
64	1769888.87	202682.53	0.00	ROAD CURVE CENTER
65	1769750.94	202783.58	0.00	ROAD CURVE CENTER

NOTE:

INSTALL 3 – 4 MAN BARRIER ROCK WSDOT 9–13.7(1) 4'–0" MAX SPACING BURIED 1/3 DEPTH AND PLACED AS SHOWN IN DRAWING.



ACCESS ROAD & PARKING SITE PLAN 3 6 7

0 2 6 10 20

WASHINGTON DEPARTMENT OF

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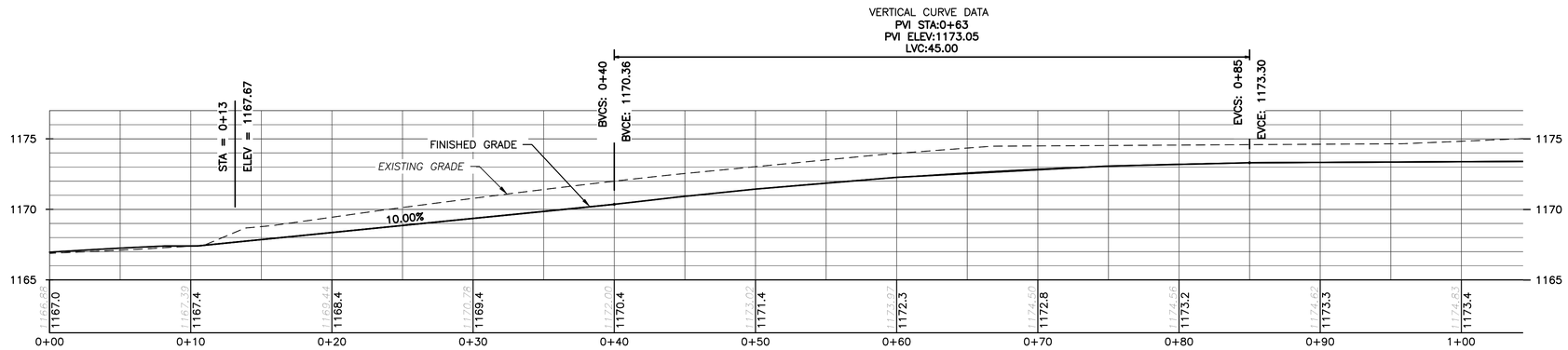
CHELAN WILDLIFE AREA

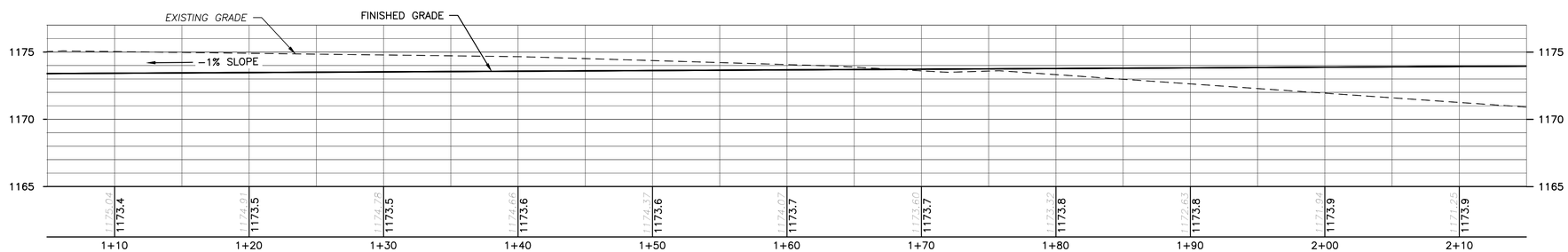
SWAKANE CANYON GUN RANGE

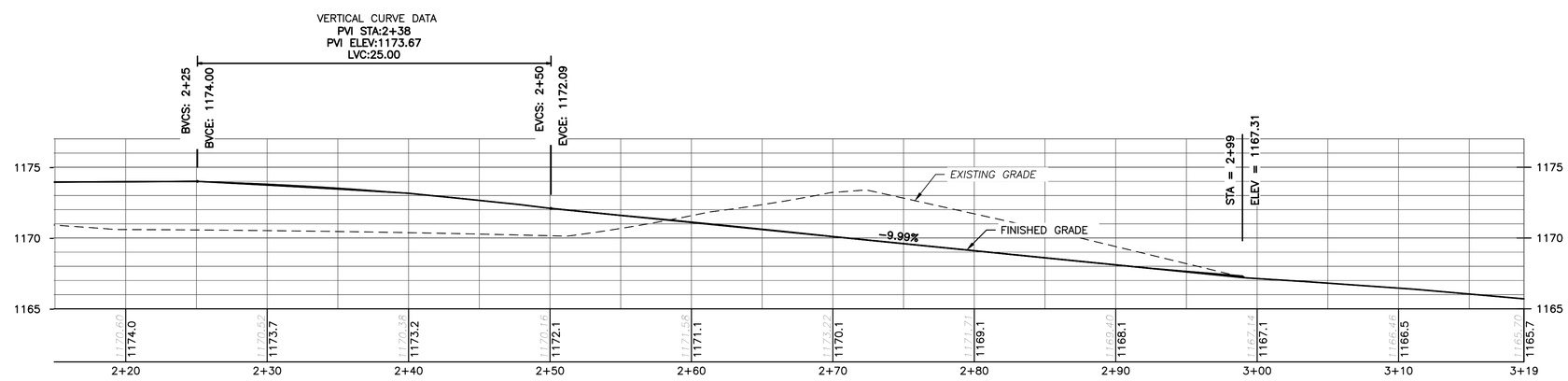
ACCESS ROAD & PARKING SITE PLAN

PROJECT NO. CN:R21:2019–1

SHEET 7 OF 18







ACCESS ROAD PROFILE

0 1 3 5 10

7 / 7 8

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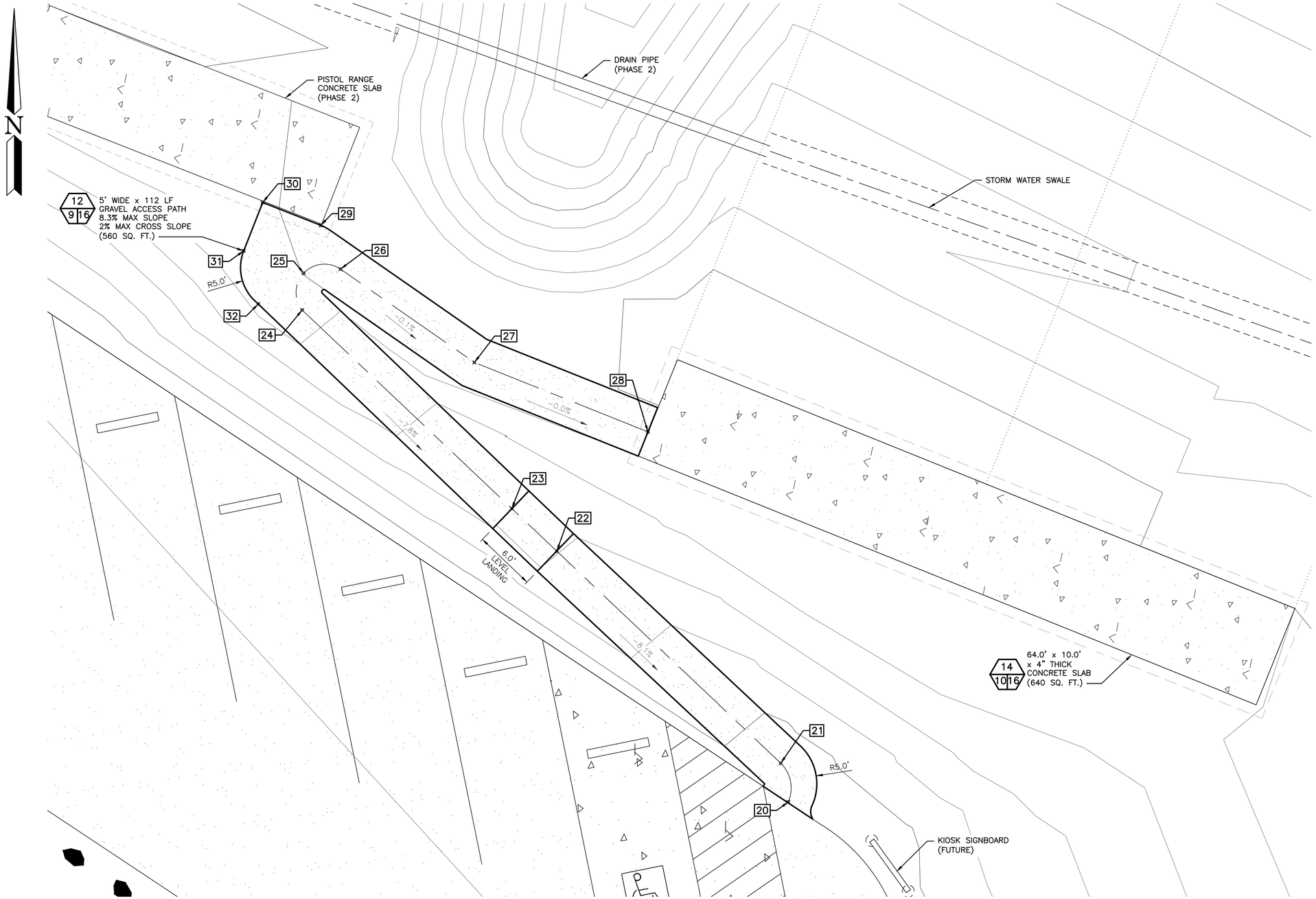
CHELAN WILDLIFE AREA

SWAKANE CANYON GUN RANGE
ACCESS ROAD PROFILE

PROJECT NO. CN:R21:2019-1

SHEET 8 OF 18



ACCESS PATH SITE PLAN (4 / 6 9)

0 1 3 5 10

ACCESS PATH POINT DATA

POINT #	EASTING	NORTHING	ELEVATION	DESCRIPTION
20	1769929.92	202743.64	1174.60	START PATH CL
21	1769929.20	202747.38	1174.62	PATH CL
22	1769907.67	202767.77	1177.02	PATH LANDING CL
23	1769903.34	202771.86	1177.02	PATH LANDING CL
24	1769883.19	202790.95	1179.19	PATH CURVE CL
25	1769883.35	202794.50	1180.00	PATH CURVE MID CL
26	1769886.88	202794.89	1180.02	PATH CURVE CL
27	1769899.75	202785.91	1180.02	PATH CL
28	1769916.43	202779.23	1180.02	PATH END CL
29	1769884.98	202799.10	1180.05	PATH EDGE
30	1769879.40	202801.29	1179.98	PATH EDGE
31	1769877.57	202796.64	1179.93	PATH EDGE
32	1769878.97	202791.53	1179.24	PATH EDGE

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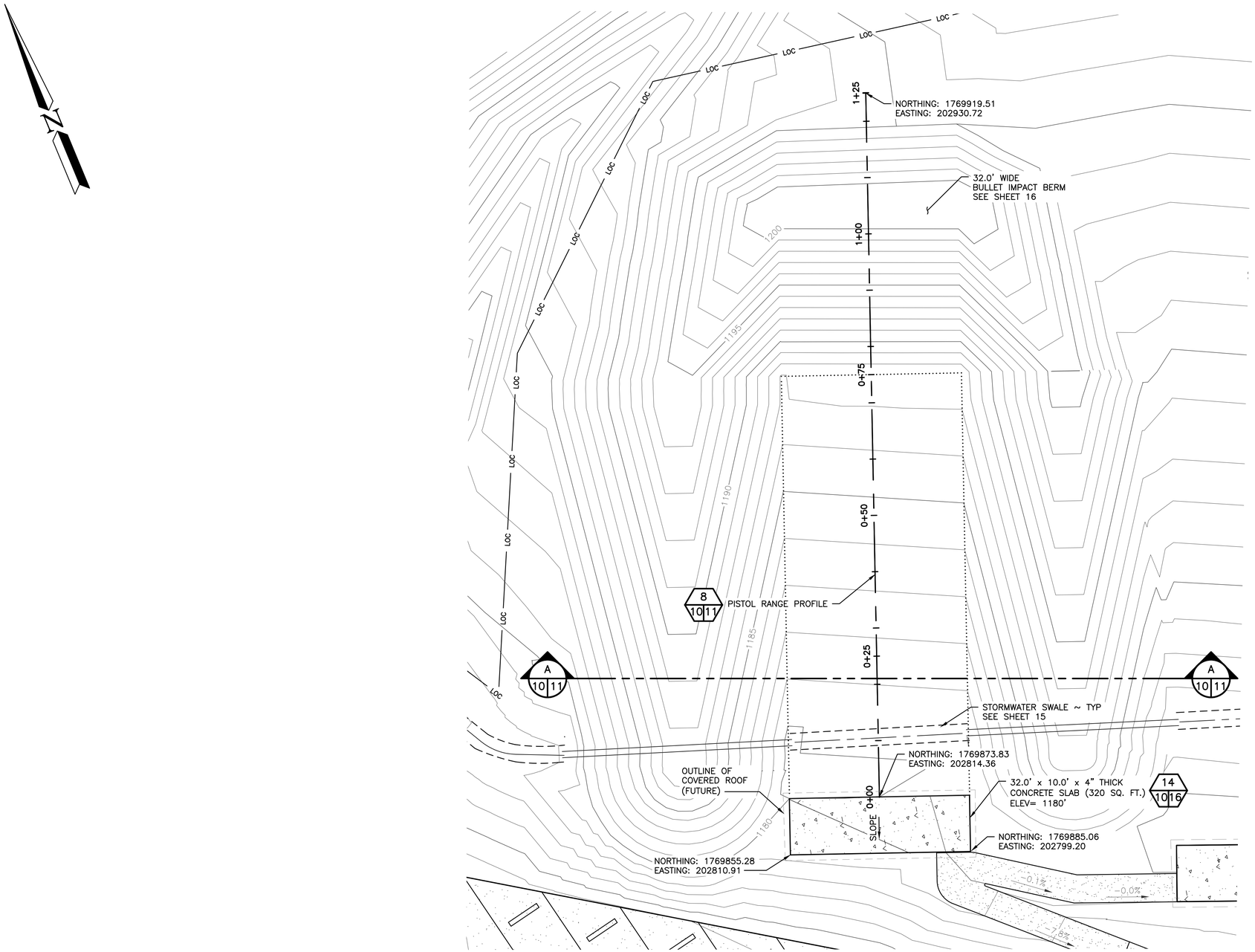
CHELAN WILDLIFE AREA

SWAKANE CANYON GUN RANGE
ACCESS PATH SITE PLAN

PROJECT NO. CN:R21:2019-1

SHEET 9 OF 18



PHASE 2 PISTOL RANGE SITE PLAN (5 / 6 10)

0 2 6 10 20

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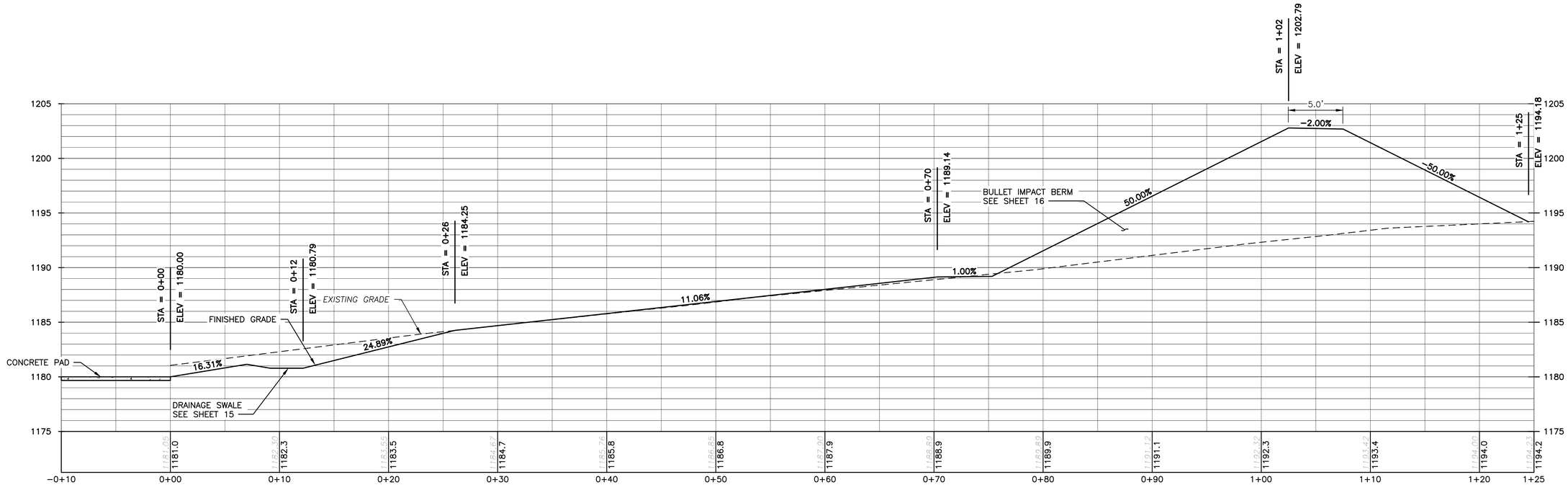
CHELAN WILDLIFE AREA

SWAKANE CANYON GUN RANGE

PISTOL RANGE SITE PLAN

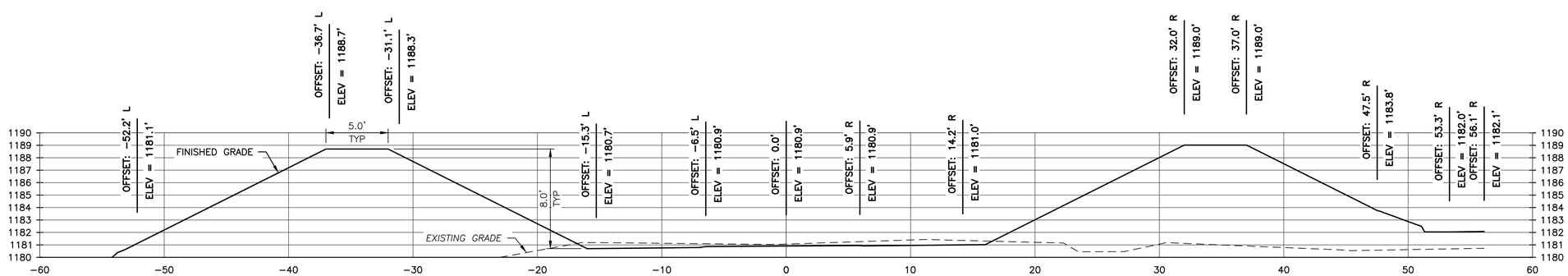
PROJECT NO. CN:R21:2019-1

SHEET 10 OF 18



PHASE 2 PISTOL RANGE PROFILE (8 / 10|11)

0 1 3 5 10



PHASE 2 PISTOL RANGE SECTION (A / 10|11)

0 1 3 5 10

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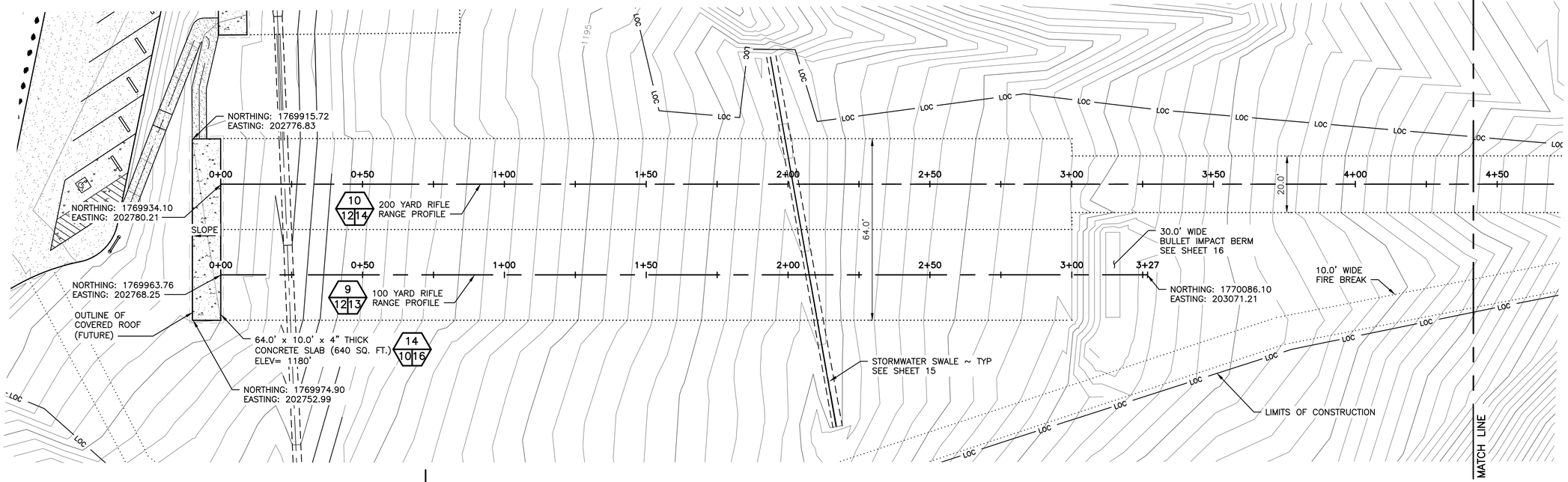
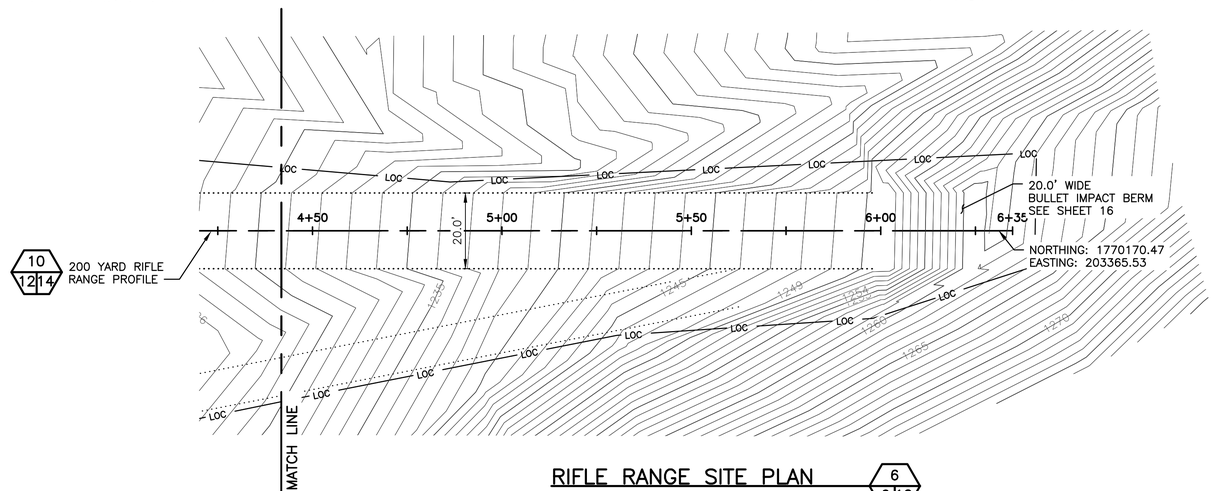
CHELAN WILDLIFE AREA

SWAKANE CANYON GUN RANGE
PISTOL RANGE PROFILE & SECTION

PROJECT NO. CN:R21:2019-1

SHEET 11 OF 18





RIFLE RANGE SITE PLAN

0 10 20 40

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CHELAN WILDLIFE AREA

SWAKANE CANYON GUN RANGE

RIFLE RANGE SITE PLAN

PROJECT NO. CN:R21:2019-1

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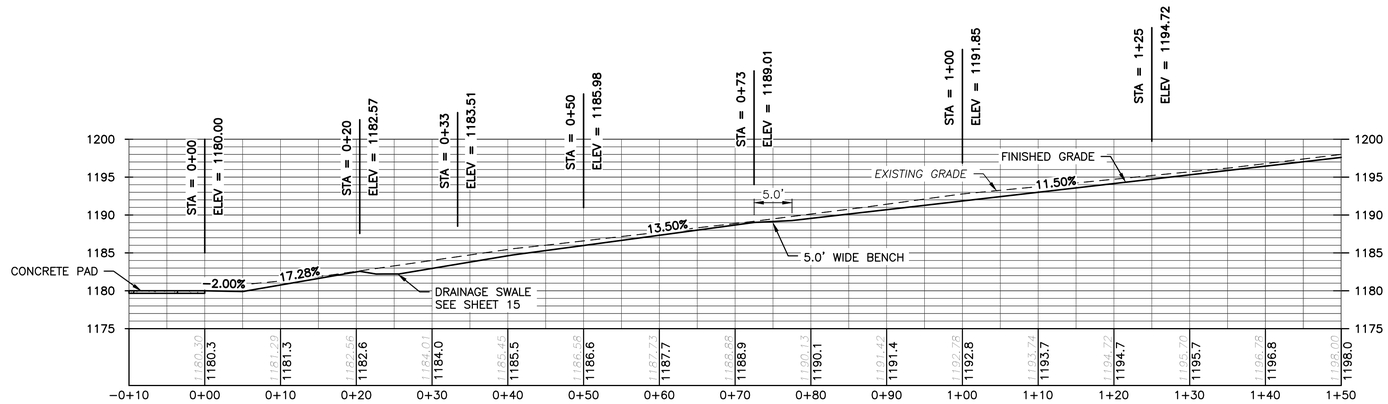
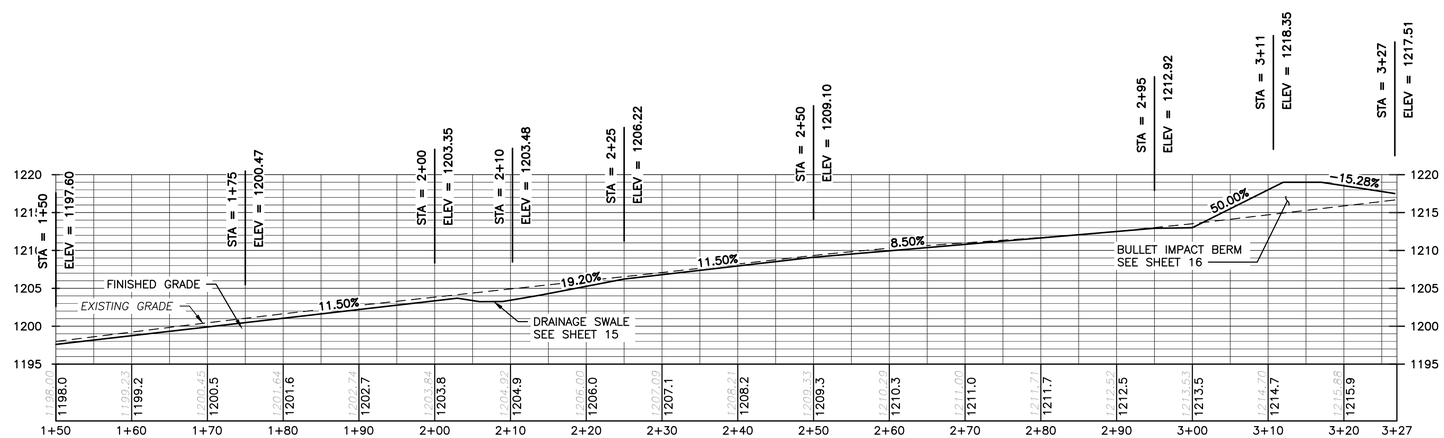


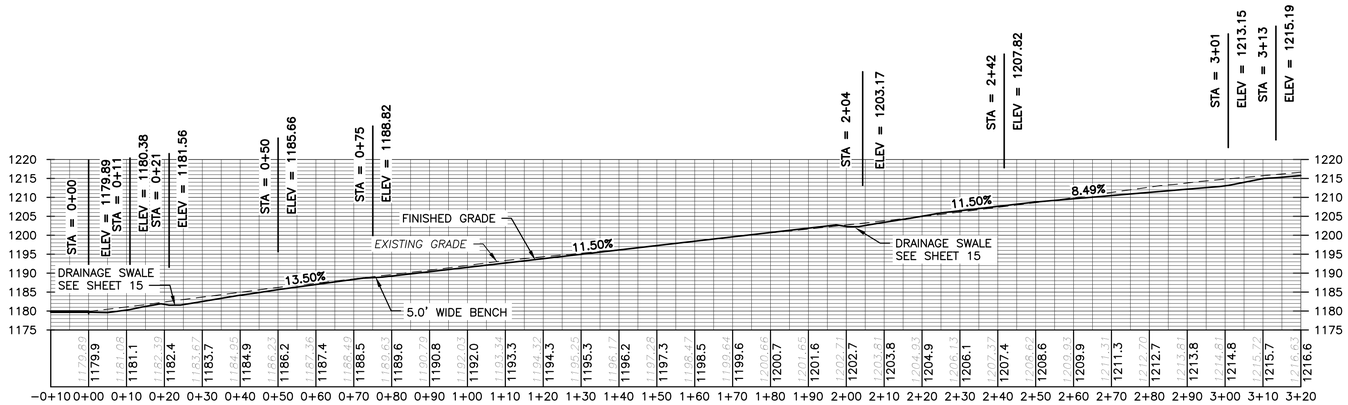


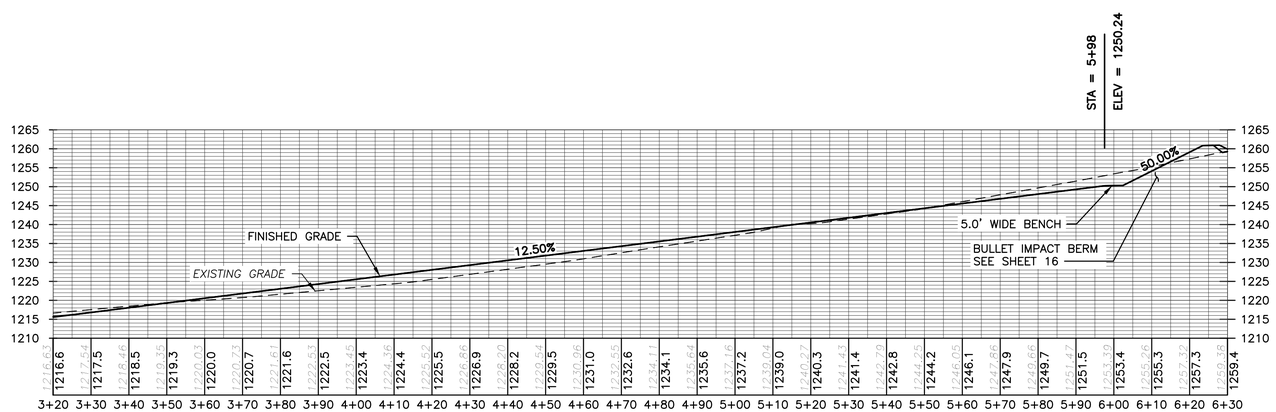
100 YARD RIFLE RANGE PROFILE

9
12 13

0 2 6 10 20

WASHINGTON DEPARTMENT OF FISH & WILDLIFE	NOT APPROVED FOR CONSTRUCTION. REVIEW ONLY	SYM. / DATE / REVISION DESCRIPTION / BY	DESIGNED BY J. HANSEN	CHELAN WILDLIFE AREA	PROJECT NO. CN:R21:2019-1	
		APPROVED AND RELEASED FOR CONSTRUCTION	CHECKED BY N. WHITE	SWAKANE CANYON GUN RANGE	SHEET 13	OF 18
		CHIEF ENGINEER ..... DATE:	DRAWN BY J. LONG	100 YARD RIFLE RANGE PROFILE		
		PROGRAM ..... DATE:	DATE 05/15/2020			





200 YARD RIFLE RANGE PROFILE

10
1214

0 10 20 40

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CHELAN WILDLIFE AREA

SWAKANE CANYON GUN RANGE
200 YARD RIFLE RANGE PROFILE

PROJECT NO.
CN:R21:2019−1

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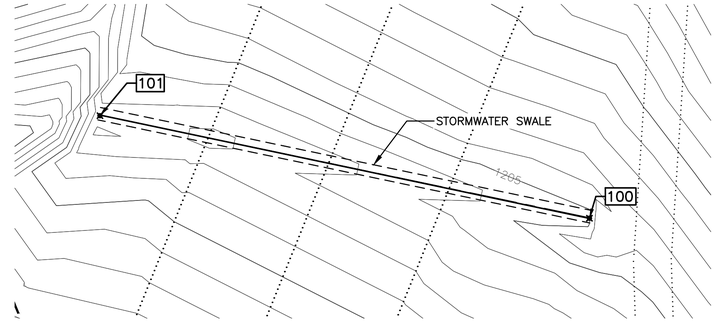
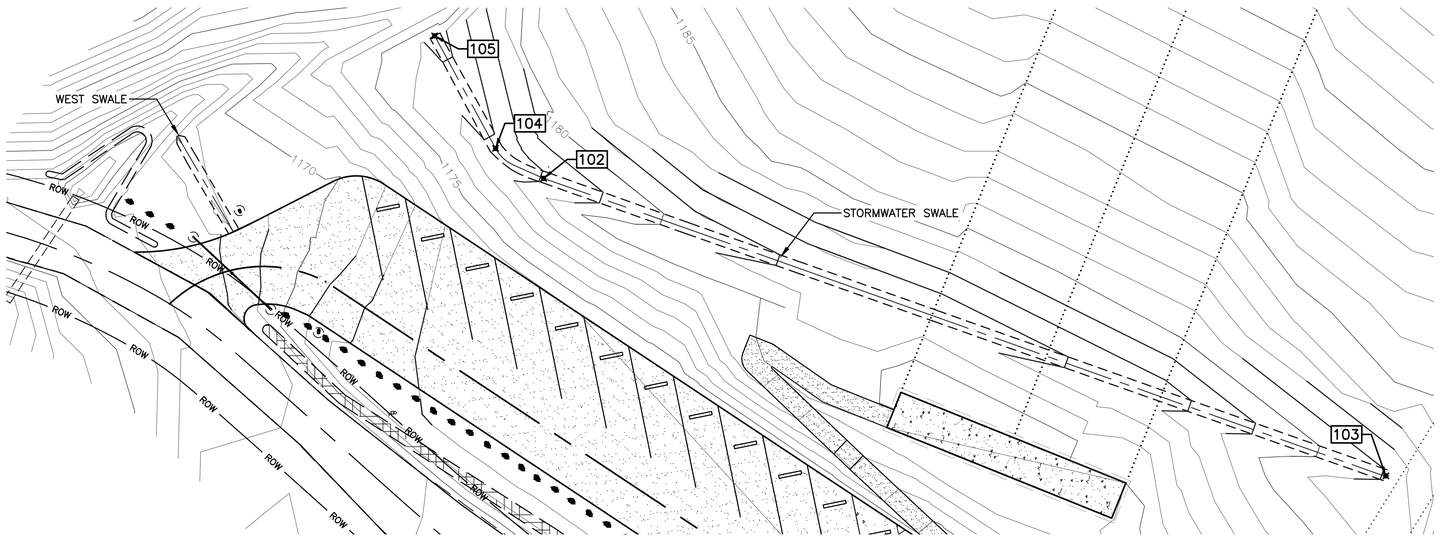
STORMWATER POINT DATA

POINT #	EASTING	NORTHING	ELEVATION	DESCRIPTION
100	1770094.43	202949.45	1204.88	SWALE START
101	1769965.23	202976.51	1202.72	SWALE END
102	1769824.94	202842.65	1178.06	SWALE START CURVE
103	1770047.27	202764.13	1186.09	SWALE START
104	1769812.26	202850.57	1177.18	SWALE END CURVE
105	1769796.17	202880.26	1175.63	SWALE END



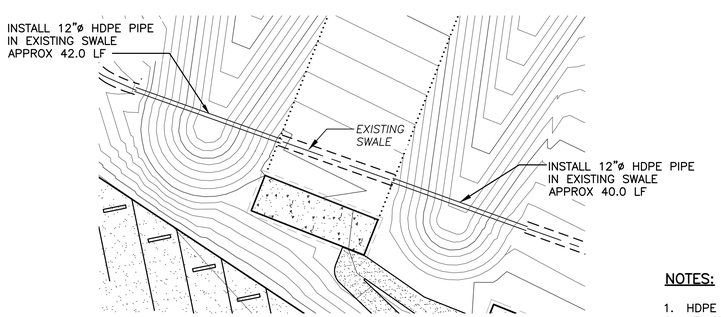
PHASE 1 NORTH SWALE PLAN

0 10 20 40



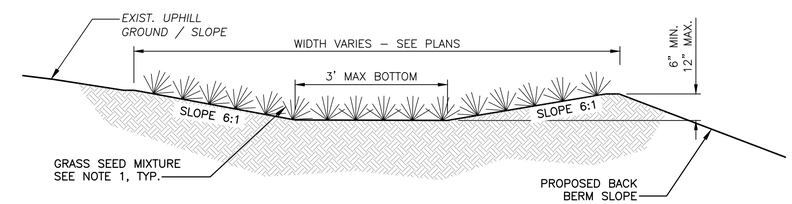
PHASE 1 SOUTH SWALE PLAN

0 10 20 40



PHASE 2 DRAINAGE PIPE PLAN

0 10 20 40



TYPICAL SWALE DETAIL

NOT TO SCALE

NOTES:

1. THE SEED MIX SHALL BE PER WDFW STANDARDS:

COMMON NAME	SPECIES NAME	LBS/ACRE
BLUEBUNCH WHEATGRASS	PSUEDOROEGENERIA SPICATA	5.0
IDAHO FESCUE	FESTUCA IDAHOENSIS	2.0
BOTTLEBRUSH SQUIRREL TAIL	ELYMUS ELYMOIDES	1.5
SANDBERG BLUEGRASS	POA SECUNDA	1.5
PRAIRIE JUNEGRASS	KOELERIA MACRANTHA	1.0
GREAT BASIN WILDRYE	LEYMUS CINEREUS	0.3
SAND DROPSEED	SPOROBOLUS CRYPTANDRUS	0.2
RICE HULLS AS PLANTING AIDE		3.0
TOTALS		14.55

NOTES:

1. HDPE PIPES TO BE ADS N-12 DUAL WALL OR APPROVED EQUAL.
2. I.E. OF HDPE PIPE ENDS TO BE EMBEDDED 6" INTO EXISTING SWALE.
3. HDPE PIPE TO BE PLACED ON 6" OF COURSE GRAVEL BEDDING.
4. GEOTEXTILE FABRIC PLACED UNDER GRAVEL BEDDING.
5. HDPE PIPES TO HAVE MINIMUM OF 2% SLOPE TO DRAIN.
6. HDPE PIPES TO HAVE MITER CUT ENDS AT 45 DEGREES.

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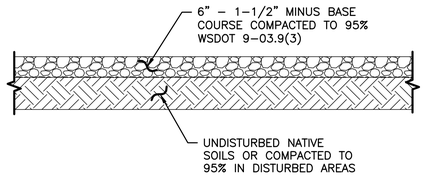
CHELAN WILDLIFE AREA

SWAKANE CANYON GUN RANGE

STORMWATER DETAILS

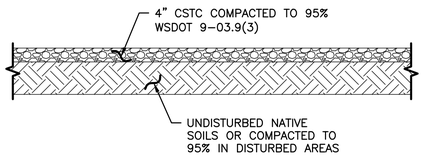
PROJECT NO. CN:R21:2019-1

SHEET 15 OF 18



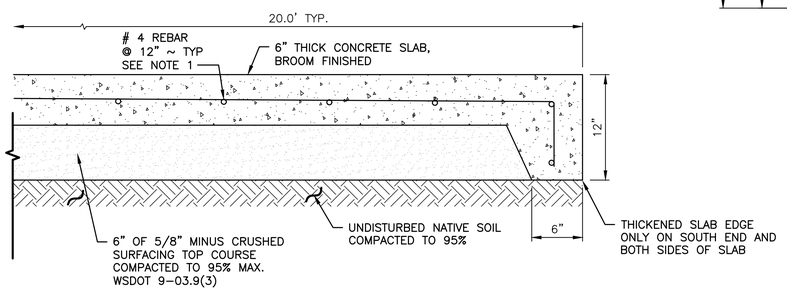
GRAVEL ROAD & PARKING LOT DETAIL (11 / 6 16)

NOT TO SCALE



GRAVEL PATH DETAIL (12 / 9 16)

NOT TO SCALE

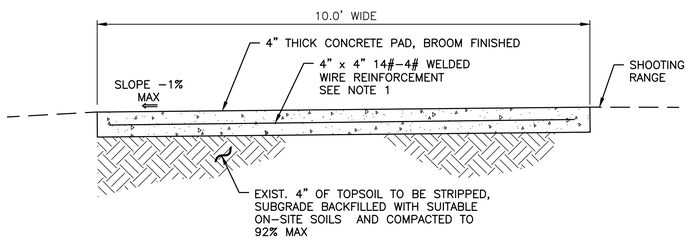


ACCESSIBLE PARKING CONCRETE PAD (13 / 7 16)

NOT TO SCALE

NOTES:

1. CONCRETE SLAB WILL CONSIST OF 4000 PSI CONCRETE WITH #4 REBAR AT 12" O.C. BOTH DIRECTIONS.
2. CONCRETE PARKING SLABS SHALL BE POURED MONOLITHICALLY. CONTRACTOR SHALL CONSTRUCT A TOOLED OR SAWCUT JOINTS OF 1-1/2" DEPTH IN A NORTH/SOUTH DIRECTION ALONG THE PARKING STALL STRIPE LINE (9' O.C.) AND ALONG THE CENTER OF THE 20.0' DIMENSION.

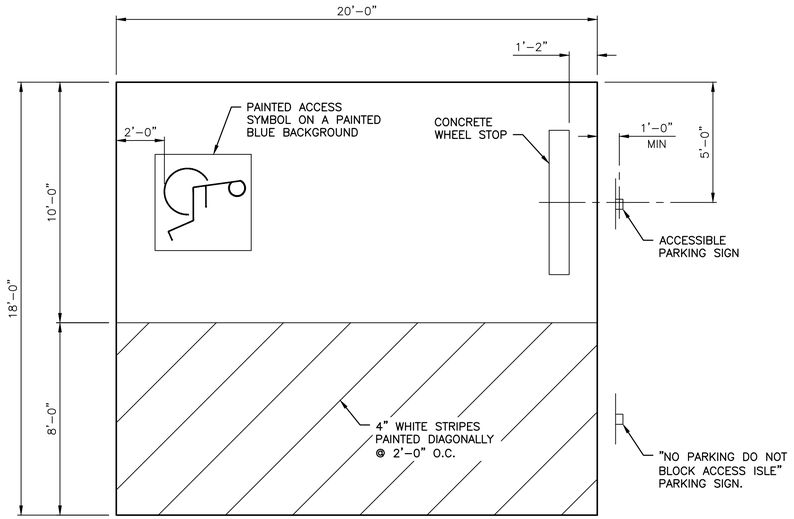


RIFLE & PISTOL RANGE CONCRETE PAD (14 / 10 16) (14 / 12 16)

NOT TO SCALE

NOTES:

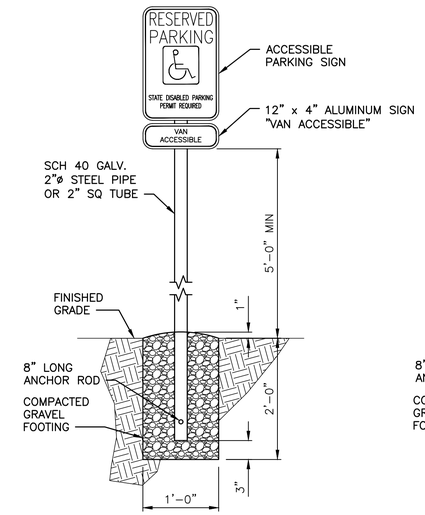
1. CONCRETE SLAB WILL CONSIST OF 4000 PSI CONCRETE WITH 4" x 4" 14#-4# WELDED WIRE REINFORCEMENT CENTERED IN SLAB
2. CONCRETE SLABS SHALL BE POURED MONOLITHICALLY. CONTRACTOR SHALL CONSTRUCT A TOOLED OR SAWCUT JOINTS OF 1" DEPTH IN A NORTH/SOUTH DIRECTION (8' O.C.)



VAN ACCESSIBLE PARKING AREA

NOT TO SCALE

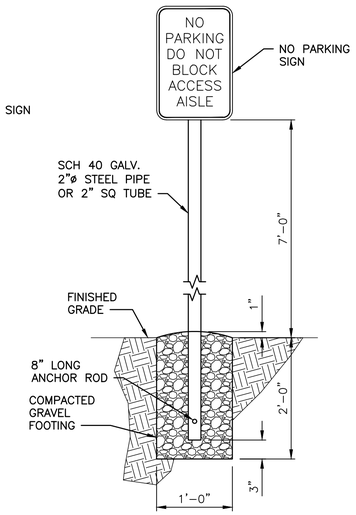
NOTE: 2% MAXIMUM SLOPE IN ALL DIRECTIONS.



ACCESSIBLE PARKING SIGN

NOT TO SCALE

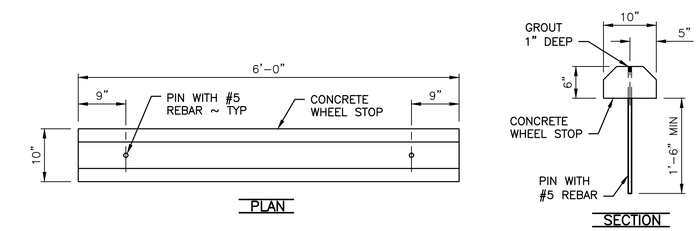
NOTE: USE TAMPER RESISTANT NUTS TO ATTACH SIGNS TO POST.



NO PARKING SIGN

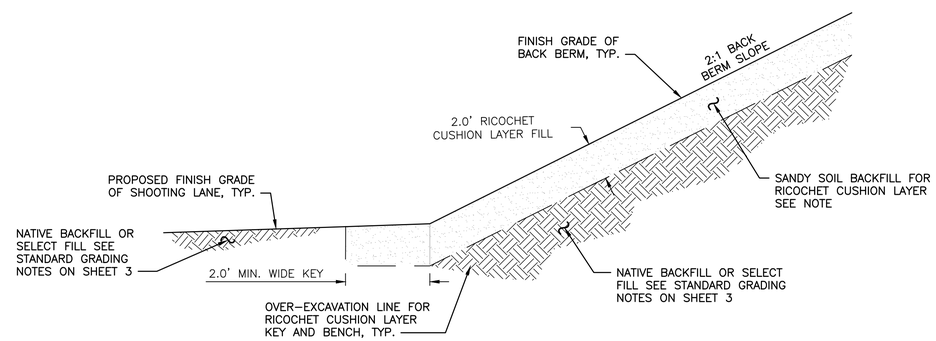
NOT TO SCALE

NOTE: USE TAMPER RESISTANT NUTS TO ATTACH SIGNS TO POST.



CONCRETE WHEEL STOP

NOT TO SCALE



BULLET IMPACT BERM DETAIL

NOT TO SCALE

NOTE: THESE SOILS SHALL BE SANDY SOILS WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM OF SP (POORLY GRADED SAND) OR SM (SILTY SAND) WITH PERCENT FINES BETWEEN 12% AND 30%.

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PROGRAM ..... DATE: .....

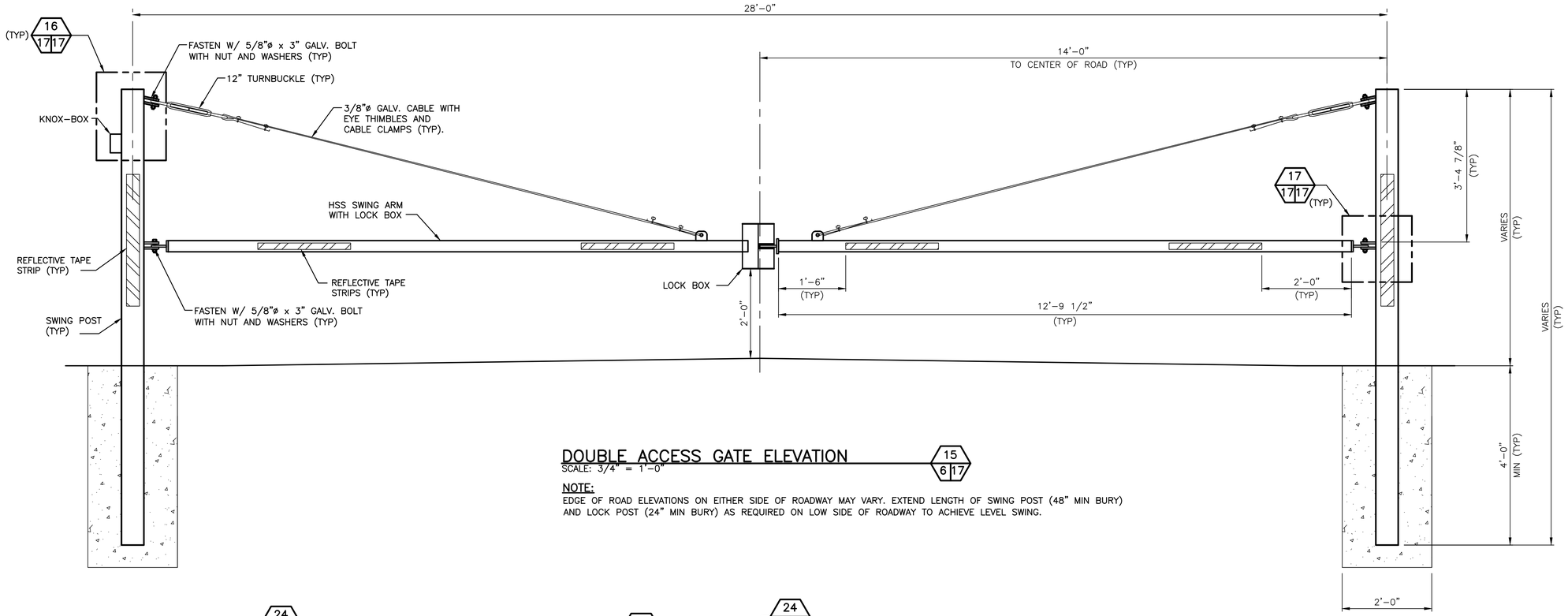
DESIGNED BY J. HANSEN
CHECKED BY N. WHITE
DRAWN BY J. LONG
DATE 05/15/2020

CHELAN WILDLIFE AREA

SWAKANE CANYON GUN RANGE
CONSTRUCTION DETAILS

PROJECT NO. CN:R21:2019-1

SHEET 16 OF 18



DOUBLE ACCESS GATE ELEVATION

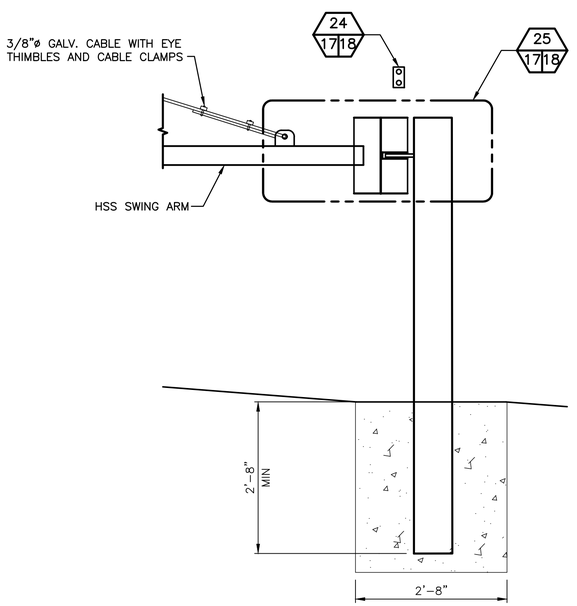
15 | 6|17

SCALE: 3/4" = 1'-0"

NOTE:
EDGE OF ROAD ELEVATIONS ON EITHER SIDE OF ROADWAY MAY VARY. EXTEND LENGTH OF SWING POST (48" MIN BURY) AND LOCK POST (24" MIN BURY) AS REQUIRED ON LOW SIDE OF ROADWAY TO ACHIEVE LEVEL SWING.

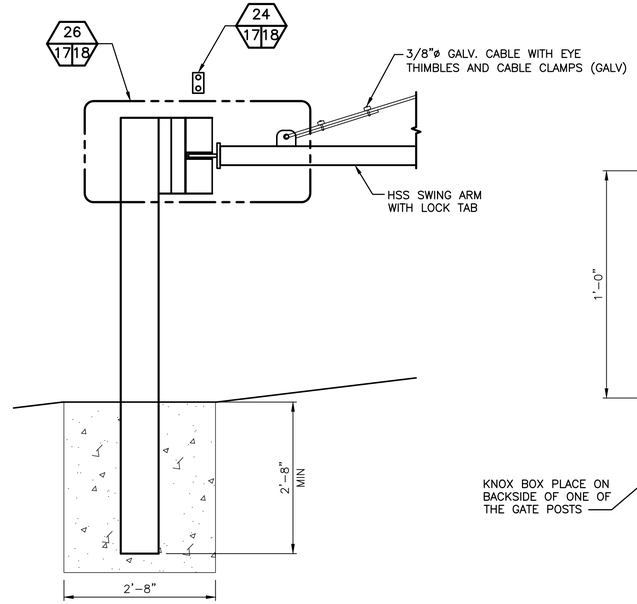
NOTES:

1. ALL STEEL SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION
2. GATES THAT PIVOT SHALL OPEN IN THE SAME DIRECTION.
3. BOTH SWING ARMS SHALL OPEN WHEN LOCK TUBE IS UNLOCKED.
4. THE OWNER IS RESPONSIBLE TO MAINTAIN THE RAPID ENTRY DEVICES IN AN OPERABLE CONDITION AFTER INSTALLATION AND ACCEPTANCE BY THE COUNTY.
5. KNOX-BOX 3200 WITH LIFT DOOR. MOUNTED 5' ABOVE GROUND IN ACCORDANCE W/ FIRE DISTRICT AND MANUFACTURER INSTRUCTIONS
6. APPLY 4" WIDE x 36" LONG REFLECTIVE TAPE STRIPS AS SHOWN. EACH SIDE OF SWING POSTS. REFLECTIVE TAPE FROM McMASTER-CARR #9195T89 YELLOW/BLACK OR APPROVED EQ.
7. APPLY 3" WIDE x 24" LONG REFLECTIVE TAPE STRIPS AS SHOWN. EACH SIDE OF SWING ARMS. REFLECTIVE TAPE FROM McMASTER-CARR #9195T76 YELLOW/BLACK OR APPROVED EQ.



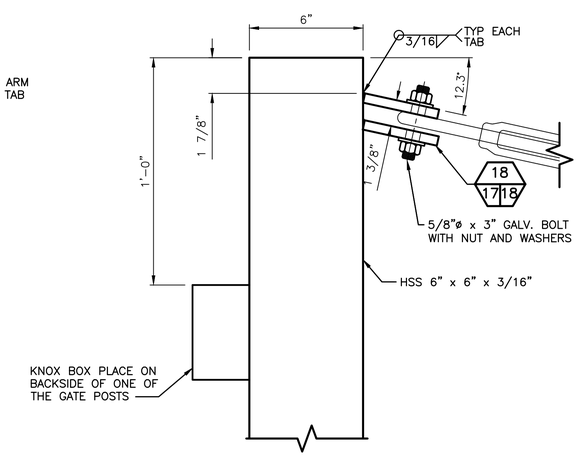
LOCK TAB POST

SCALE: 1" = 1'-0"



LOCK BOX POST

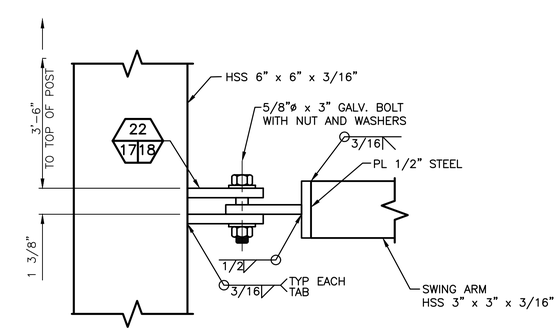
SCALE: 1" = 1'-0"



SWING POST TOP

16 | 17|17

SCALE: 3" = 1'-0"



SWING POST HINGE

17 | 17|17

SCALE: 3" = 1'-0"

WASHINGTON DEPARTMENT OF
FISH & WILDLIFE

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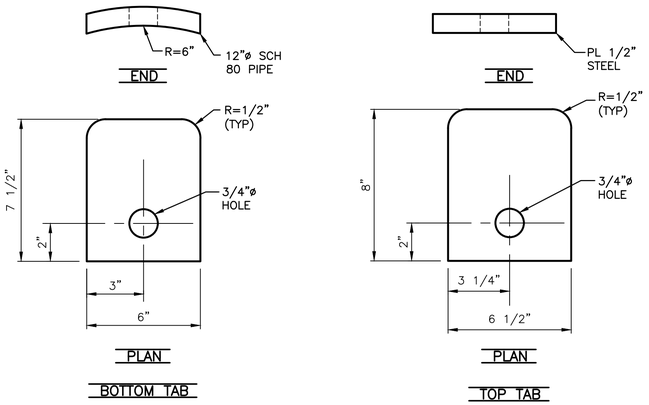
SWAKANE CANYON GUN RANGE

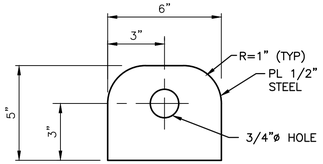
GATE CONSTRUCTION DETAILS 1

PROJECT NO. CN:R21:2019-1

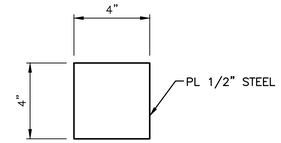
SHEET 17 OF 18



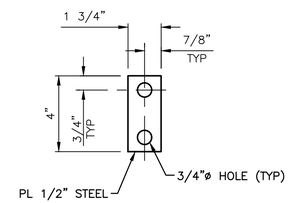
TURN BUCKLE TABS (18 / 17 18)
NOT TO SCALE



CABLE TAB (19 / 18 18)
NOT TO SCALE

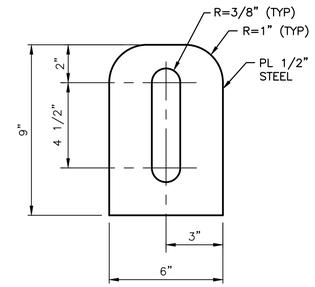


SUPPORT PLATE (20 / 18 18)
SCALE: 3" = 1'-0"

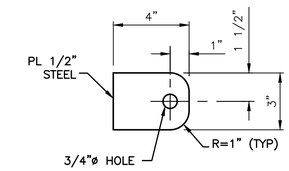


LOCK PIN (24 / 17 18)
SCALE: 3" = 1'-0"

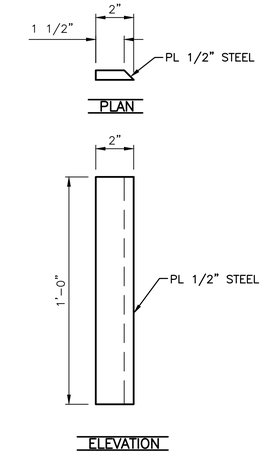
NOTE:
SUITABLE FOR TWO LOCKS



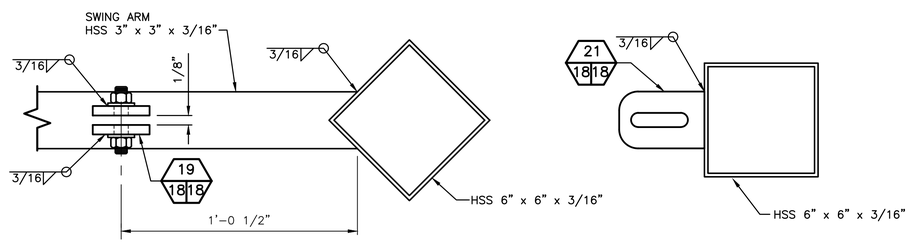
LOCK TAB (21 / 18 18)
NOT TO SCALE



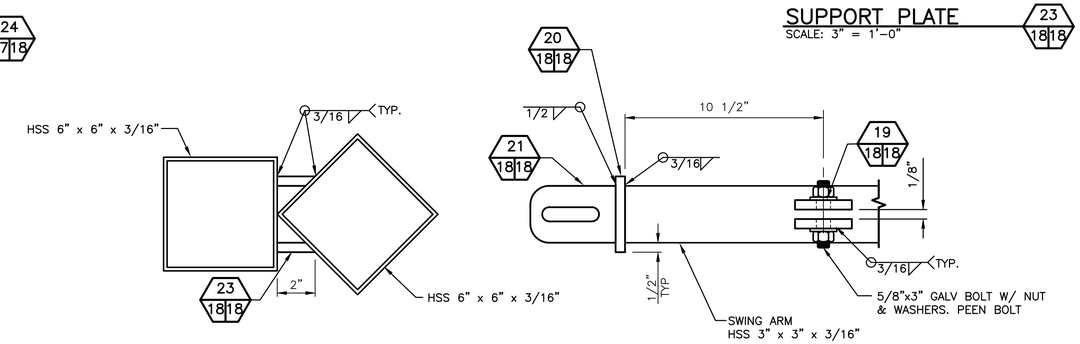
PIVOT TAB (22 / 17 18)
SCALE: 3" = 1'-0"



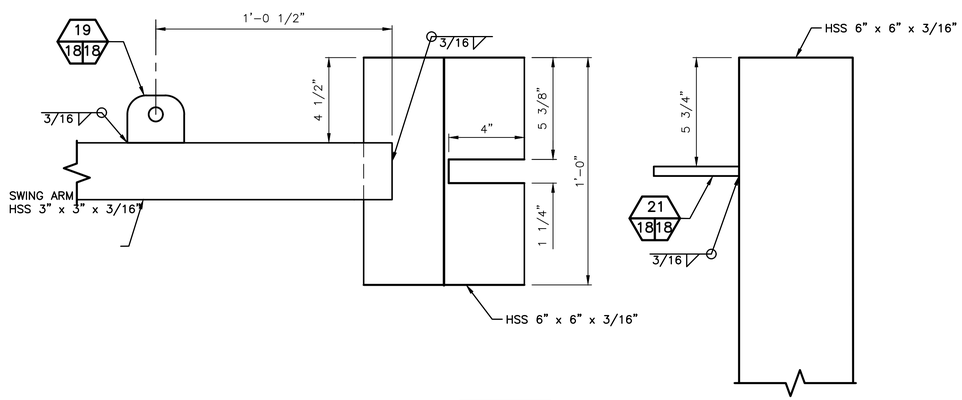
SUPPORT PLATE (23 / 18 18)
SCALE: 3" = 1'-0"



PLAN

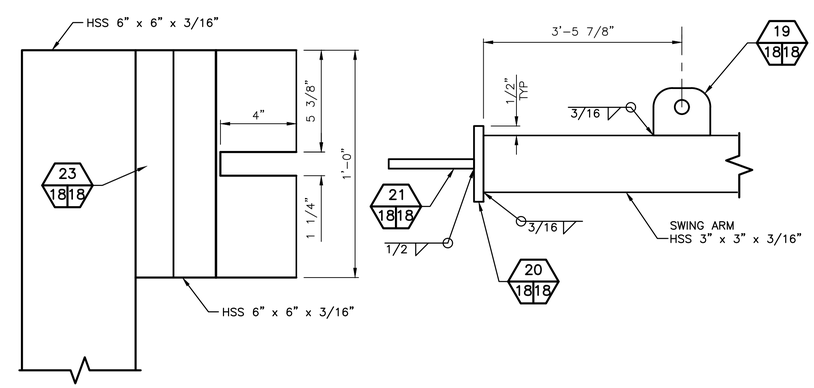


PLAN



ELEVATION

SWING ARM WITH LOCK BOX & LOCK TAB POST (25 / 17 18)
SCALE: 3" = 1'-0"



ELEVATION

SWING ARM WITH LOCK TAB & LOCK BOX POST (26 / 17 18)
SCALE: 3" = 1'-0"

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