

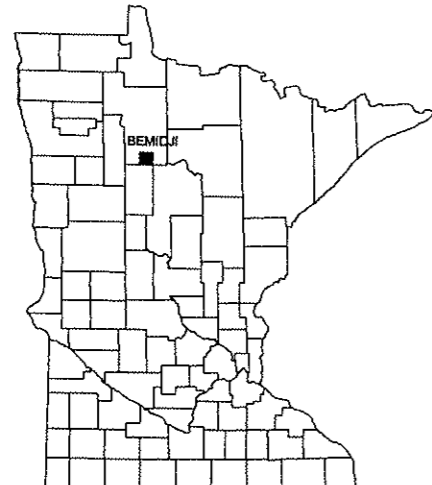
# BELTRAMI COUNTY

## SHOOTING SPORTS PARK

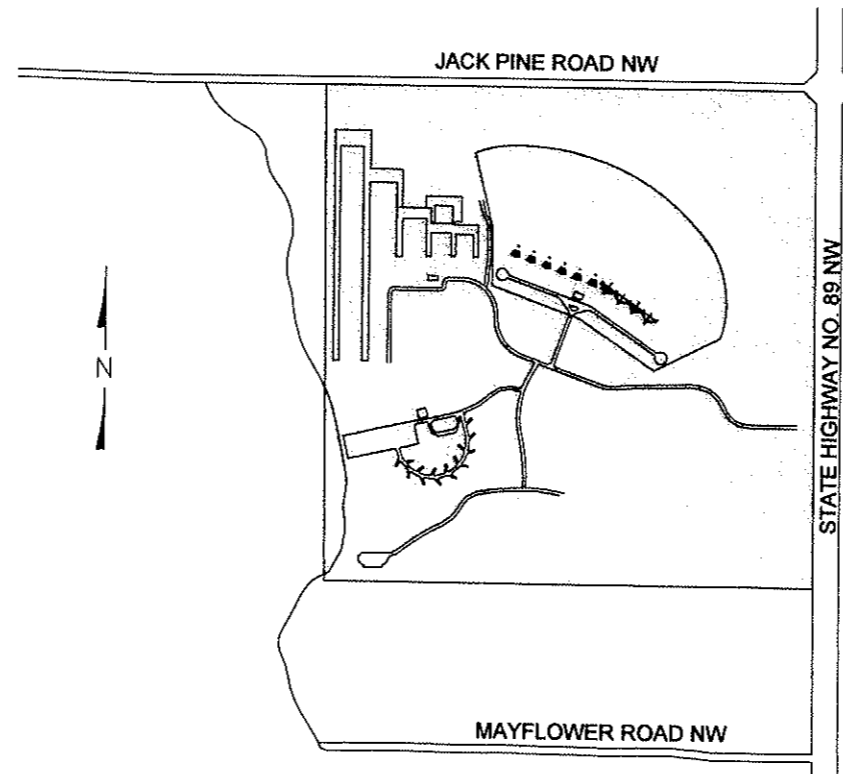
### PHASE 2

#### INDEX OF SHEETS

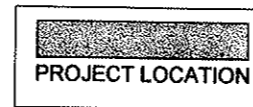
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	ESTIMATED QUANTITIES
3	CIVIL DRAWING SET MATCHLINE PLAN
4	SURVEY CONTROL SHEET
5	PHASE 2 AREA QUANTITIES SHEET
6	CIVIL LEGENDS AND NOTES
7	EXISTING SITE CONDITION (OVERALL)
8	EXISTING SITE CONDITION (WESTERLY HALF)
9	EXISTING SITE CONDITION (EASTERLY HALF)
10	DEMOLITION & REMOVAL PLAN
11	TYPICAL SECTIONS SHEET
12	GRADING PLAN
13	GRADING PLAN
14	GRADING PLAN
15	GRADING PLAN
16	GRADING PLAN
17	GRADING PLAN
18	GRADING PLAN
19	GRADING PLAN
20	PLAN & PROFILE
21	PLAN & PROFILE
22	PLAN & PROFILE
23	PLAN & PROFILE
24	PLAN & PROFILE
25	PLAN & PROFILE
26	CIVIL SITE DETAILS
27	FENCING DETAILS
28	FENCING DETAILS
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30	CAMPING AREA UTILITY PLAN
31	RIFLE/PISTOL UTILITY PLAN
32	WEST LANDSCAPE & EROSION CONTROL
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C1	KEY PLAN, GEN. NOTES & DWG. SCHEDULE
C2	GENERAL SITE RANGE SAFETY PLAN, BASE LINE LAYOUT & PROJECTILE CONTAINMENT DIAGRAM
C3	300 YD. HIGH POWER RIFLE RANGE PLAN, PROFILE & DETAILS
C4	200 YD. HIGH POWER RIFLE RANGE PLAN, PROFILE & DETAILS
C5	100 YD. SMALL BORE RIFLE RANGE PLAN, PROFILE & DETAILS
C6	50 YD. PISTOL & LAW ENFORCEMENT RANGE PLANS & PROFILES
C7	SHOTGUN RANGE FIRING LINE PLAN & TRAP RANGE DETAILS
C8	SKEET RANGE FIRING LINE PLAN & SINGLE UNIT PLAN & DETAILS
C9	SKEET/TRAP COMBO RANGE FIRING LINE PLAN & SKEET HSE. ELEV'NS.
C10	SKEET HOUSE & RIFLE RANGE FIRING LINE STRUCTURE DETAILS
C11	PISTOL RANGE COVER STRUCTURE & BULLET CATCHER DETAILS
C12	50 YD. PISTOL RANGE SECTION-ELEVATIONS & DETAILS
C13	RIFLE RANGE CROSS SECTION-ELEVATION VIEWS FROM THE FIRING LINE
C14	RIFLE RANGE PIT RETAINING WALL & MISC. DETAILS
C15	MISCELLANEOUS SHOOTING RANGE DETAILS
C16	600 YARD EXPANSION TO THE 300 YARD RANGE, PLAN, PROFILE & DETAILS



LOCATION MAP  
NO SCALE




3.6 MI. N. OF U.S. #2 ON MN. HWY. #89  
VICINITY MAP  
NO SCALE



NO.	REVISIONS	BY	APR.	DATE

DESIGNED MJK	CHECKED MJK
DRAWN SWH	APPROVED MJK
DATE 12/14/09	JOB NO. 08-011

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Certified By:  Lic. No. 44624  
Printed Name: Michael J. Karvako Date 12/14/09

**KARVAKKO Engineering**

144 PAUL BUNYAN DRIVE NW ~ P.O. BOX 785 ~ BEMIDJI MN 56619  
PHONE: (218) 444-8004 FAX: (218) 444-8562



BELTRAMI COUNTY SHOOTING SPORTS PARK PHASE 2

TITLE SHEET

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GENERAL AREA ESTIMATED QUANTITIES			
ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL
1	MOBILIZATION	LUMP SUM	1
2	CLEARING	ACRE	8.1
3	GRUBBING	ACRE	8.1
4	OBLITERATE TRAIL	LIN FT	695
5	UNCLASSIFIED EXCAVATION	CU YD	37,099
6	DOZER	HOUR	10
7	AGGREGATE BASE CLASS 5	TON	3,544
8	12" CS PIPE CULVERT (16 GA)	LIN FT	201
9	12" GS PIPE APRON	EACH	12
10	SILT FENCE	LIN FT	245
11	TURF ESTABLISHMENT	ACRE	5.0

LAW ENFORCEMENT AREA ESTIMATED QUANTITIES			
ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL
1	MOBILIZATION	LUMP SUM	1
2	CLEARING	ACRE	2.3
3	GRUBBING	ACRE	2.3
4	UNCLASSIFIED EXCAVATION	CU YD	303
5	DOZER	HOUR	10
6	AGGREGATE BASE CLASS 5	TON	1,241
7	12" CS PIPE CULVERT (16 GA)	LIN FT	89
8	12" GS PIPE APRON	EACH	4
9	15" RC PIPE CULVERT	LIN FT	4
10	15" RC PIPE APRON	EACH	4
11	RANDOM RIPRAP CLASS III	CU YD	4.4
12	TURF ESTABLISHMENT	ACRE	2.3
13	FILTER LOG, TYPE STRAW BIOROLL	LIN FT	2,090
14	TURF ESTABLISHMENT W/ SPECIAL SEED	ACRE	1.3

MULTI USE AREA ESTIMATED QUANTITIES			
ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL
1	MOBILIZATION	LUMP SUM	1
2	CLEARING	ACRE	0.8
3	GRUBBING	ACRE	0.8
4	UNCLASSIFIED EXCAVATION	CU YD	114
5	DOZER	HOUR	10
6	AGGREGATE BASE CLASS 5	TON	302
7	TURF ESTABLISHMENT	ACRE	0.6

SHOTGUN AREA ESTIMATED QUANTITIES			
ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL
1	MOBILIZATION	LUMP SUM	1
2	CLEARING	ACRE	8.1
3	GRUBBING	ACRE	8.1
4	DOZER	HOUR	10
5	4" CONCRETE SIDEWALK	SF	2,140
6	BOLLARDS	EACH	47
7	TURF ESTABLISHMENT	ACRE	8.1

CAMPING AREA ESTIMATED QUANTITIES			
ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL
1	MOBILIZATION	LUMP SUM	1
2	CLEARING	ACRE	8.9
3	GRUBBING	ACRE	8.9
4	OBLITERATE TRAIL	LIN FT	2,032
5	UNCLASSIFIED EXCAVATION	CU YD	4,782
6	DOZER	HOUR	10
7	AGGREGATE BASE CLASS 5	TON	4,873
8	12" CS PIPE CULVERT (16 GA)	LIN FT	98
9	12" GS PIPE APRON	EACH	6
10	SILT FENCE	LIN FT	32
11	TREE PLANTING	ACRE	0.4
12	TURF ESTABLISHMENT	ACRE	5.8



RIFLE AREA ESTIMATED QUANTITIES			
ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL
1	MOBILIZATION	LUMP SUM	1
2	CLEARING	ACRE	47.5
3	GRUBBING	ACRE	47.5
4	OBLITERATE TRAIL	LIN FT	1,322
5	UNCLASSIFIED EXCAVATION	CU YD	169,355
6	DOZER	HOUR	10
7	AGGREGATE BASE CLASS 5	TON	3,445
8	8" PVC PIPE CULVERT	LIN FT	20
9	12" CS PIPE CULVERT (16 GA)	LIN FT	124
10	12" GS PIPE APRON	EACH	6
11	15" RC PIPE CULVERT	LIN FT	409
12	15" RC PIPE APRON	EACH	10
13	RANDOM RIPRAP CLASS III	CU YD	4.4
14	SILT FENCE	LIN FT	65
15	FILTER LOG, TYPE STRAW BIOROLL	LIN FT	11,132
16	TURF ESTABLISHMENT	ACRE	37.7
17	TREE PLANTING	ACRE	4.2
18	SALVAGE FENCING (CHAINLINK)	LIN FT	969
19	FENCING (CHAINLINK)	LIN FT	3,729
20	INSTALL SALVAGED FENCING	LIN FT	969
21	TURF ESTABLISHMENT W/ SPECIAL SEED	ACRE	8.0

TRAILHEAD AREA ESTIMATED QUANTITIES			
ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL
1	MOBILIZATION	LUMP SUM	1
2	CLEARING	ACRE	1.0
3	GRUBBING	ACRE	1.0
4	UNCLASSIFIED EXCAVATION	CU YD	66
5	DOZER	HOUR	10
6	AGGREGATE BASE CLASS 5	TON	867
7	12" CS PIPE CULVERT (16 GA)	LIN FT	10
8	12" GS PIPE APRON	EACH	2
9	TURF ESTABLISHMENT	ACRE	0.5

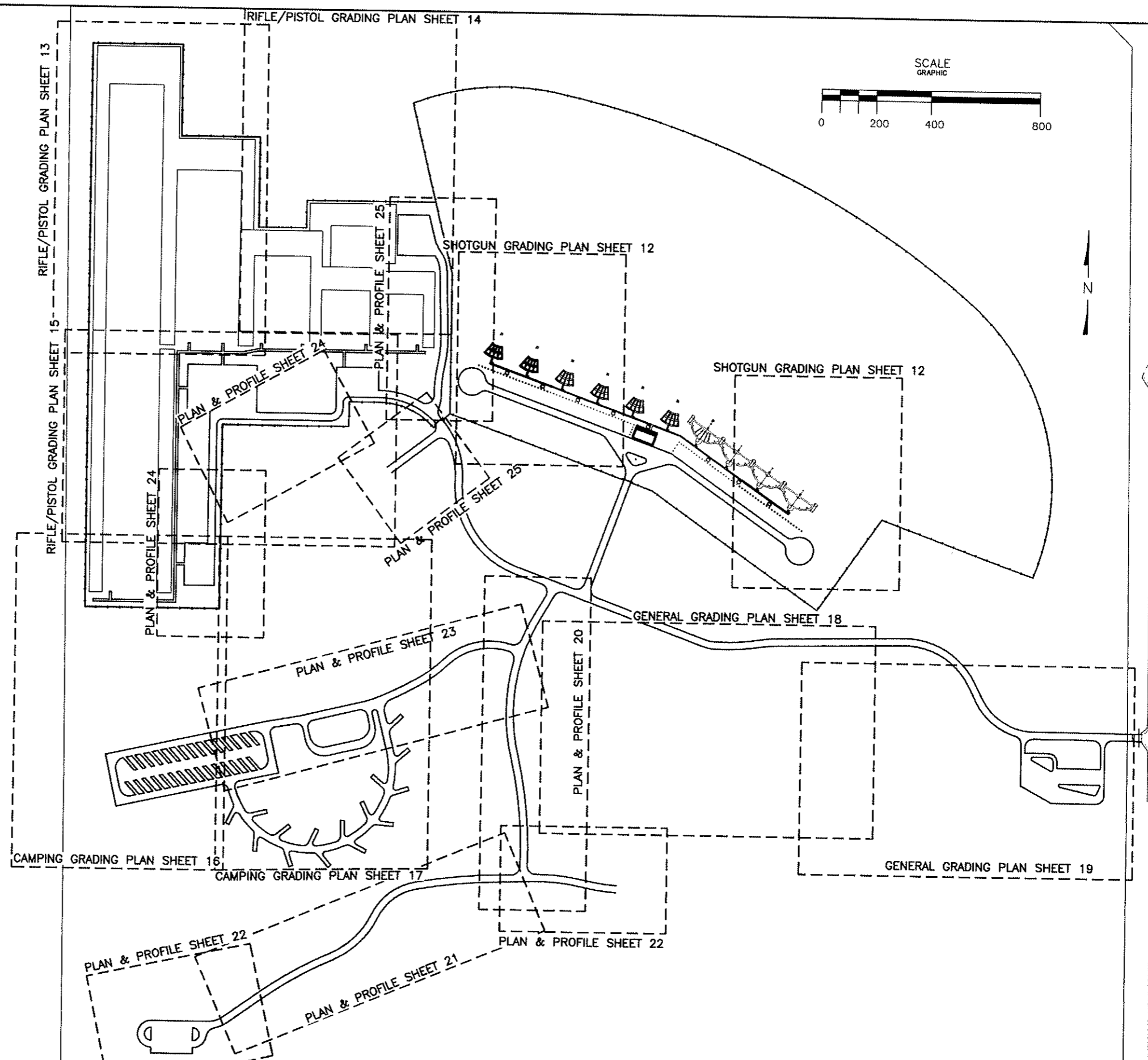
(1) TREES TO BE RELOCATED FROM SELECTED AREAS ONSITE. TO BE LOCATED AT 20 FT SPACING.

**BASIS OF ESTIMATED QUANTITIES**  
 AGGREGATE BASE.....140 LBS. PER CUBIC FOOT

THIS SHEET IS FOR INFORMATIONAL PURPOSES ONLY AND ONLY COVERS ITEMS INDICATED ON SHEETS 1 THRU 33.

DESIGNED MJK		CHECKED MJK		I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.			BELTRAMI COUNTY SHOOTING SPORTS PARK PHASE 2		SHEET	
DRAWN SWH		APPROVED MJK					TITLE SHEET		2	
DATE 12/14/09		JOB NO. 08-011					Printed Name: Michael J. Karvako Date: 12/14/09		144 PAUL BUNYAN DRIVE NW - P.O. BOX 785 - BEMIDJI MN 56619 PHONE: (218) 444-8004 FAX: (218) 444-8562	
NO. REVISIONS		BY	APR.	DATE	12/14/09		08-011		33	

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NO.	REVISIONS	BY	APR.	DATE

DESIGNED MJK	CHECKED MJK
DRAWN JWM	APPROVED MJK
DATE 12/14/09	JOB NO. 08-011

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Certified By: *[Signature]* Lic. No. 44824  
 Printed Name: Michael J. Karvako Date 12/14/09

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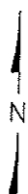
BELTRAMI COUNTY SHOOTING SPORTS PARK PHASE 2  
 CIVIL DRAWING SET MATCHLINE PLAN

BELTRAMI COUNTY SHOOTING SPORTS PARK NORTH BOUNDARY LINE

JACK PINE ROAD NW

JACK PINE ROAD NW

0414 Y MNDT  
 N) 152,622.099  
 E) 459,454.420  
 EL) 1401.145 NAVD 88  
 BELTRAMI CO. S.  
 COORDINATES  
 NAD 83 96



PROJECT LOCATION

BEAVERS MNDT  
 N) 149,989.118  
 E) 459,547.099  
 EL) 1401.936 NAVD 88  
 BELTRAMI CO. S.  
 COORDINATES  
 NAD 83 96

MN. HWY. NO. 89

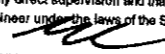
BELTRAMI COUNTY SHOOTING SPORTS PARK SOUTH BOUNDARY LINE

0414 Z MNDT  
 N) 147,346.470  
 E) 459,515.424  
 EL) 1400.719 NAVD 88  
 BELTRAMI CO. S.  
 COORDINATES  
 NAD 83 96

MAYFLOWER ROAD NW

MAYFLOWER ROAD NW

NO.	REVISIONS	BY	APR.	DATE	DESIGNED MJK	CHECKED MJK
					DRAWN SWH	APPROVED MJK
					DATE 12/14/09	JOB NO. 08-011

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 Printed Name: Michael J. Karvako Date: 12/14/09

**KARVAKKO Engineering**  
 144 PAUL BUNYAN DRIVE NW - P.O. BOX 785 - BEMIDJI MN 56619  
 PHONE: (218) 444-8004 FAX: (218) 444-8562



BELTRAMI COUNTY SHOOTING SPORTS PARK PHASE 2  
 SURVEY CONTROL

SHEET 4  
 OF 33

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POND AREA	
MASS SITE GRADING GRANULAR SOILS	
EXCAVATION (CY)	33,064
EMBANKMENT (CY)	10
NET EXCAVATION + / BORROW -	33,054

LAW ENFORCEMENT RANGE	
MASS SITE GRADING GRANULAR SOILS	
EXCAVATION (CY)	213
EMBANKMENT (CY)	27,535
NET EXCAVATION + / BORROW -	-27,322

RIFLE RANGES	
MASS SITE GRADING GRANULAR SOILS	
EXCAVATION (CY)	5,748
EMBANKMENT (CY)	157,133
NET EXCAVATION + / BORROW -	-151,385

LAW ENFORCEMENT ROAD	
MASS SITE GRADING GRANULAR SOILS	
EXCAVATION (CY)	90
EMBANKMENT (CY)	3,601
NET EXCAVATION + / BORROW -	-3,511
PAVEMENT IMPROVEMENTS	
AGGREGATE BASE COURSE (TONS)	1,241

OVERFLOW PARKING AREA	
MASS SITE GRADING GRANULAR SOILS	
EXCAVATION (CY)	8,160
EMBANKMENT (CY)	0
NET EXCAVATION + / BORROW -	8,160

OVERFLOW PARKING ROAD	
MASS SITE GRADING GRANULAR SOILS	
EXCAVATION (CY)	72
EMBANKMENT (CY)	328
NET EXCAVATION + / BORROW -	-256
PAVEMENT IMPROVEMENTS	
AGGREGATE BASE COURSE (TONS)	234

SHOTGUN FIELD AREA	
MASS SITE GRADING GRANULAR SOILS	
EXCAVATION (CY)	0
EMBANKMENT (CY)	617
NET EXCAVATION + / BORROW -	-617

RIFLE ROAD	
MASS SITE GRADING GRANULAR SOILS	
EXCAVATION (CY)	2,033
EMBANKMENT (CY)	1,071
NET EXCAVATION + / BORROW -	962
PAVEMENT IMPROVEMENTS	
AGGREGATE BASE COURSE (TONS)	3,445

ENTRANCE BUILDING AREA	
MASS SITE GRADING GRANULAR SOILS	
EXCAVATION (CY)	394
EMBANKMENT (CY)	1,782
NET EXCAVATION + / BORROW -	-1,388
PAVEMENT IMPROVEMENTS	
AGGREGATE BASE COURSE (TONS)	1,333

GENERAL DRAINAGE AREA	
MASS SITE GRADING GRANULAR SOILS	
EXCAVATION (CY)	120,278
EMBANKMENT (CY)	34
NET EXCAVATION + / BORROW -	120,244

CAMPING AREA	
MASS SITE GRADING GRANULAR SOILS	
EXCAVATION (CY)	4,782
EMBANKMENT (CY)	3,971
NET EXCAVATION + / BORROW -	811
PAVEMENT IMPROVEMENTS	
AGGREGATE BASE COURSE (TONS)	4,873

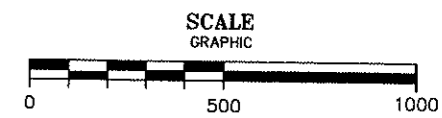
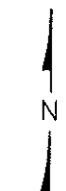
- NOTES:**
- SEE SHEET 2 FOR ESTIMATED QUANTITIES TABULATION.
  - SEE PHASE 1 PLANS FOR PHASE 1 ESTIMATED QUANTITIES.
  - ALL EARTHWORK VOLUMES ARE CALCULATED WITH A 1.2 FILL FACTOR APPLIED.
  - EARTHWORK VOLUMES INCLUDE TOPSOIL VOLUMES AND DO NOT INCLUDE ANY AGGREGATE BASE.
  - QUANTITY DATA SHOWN IS FOR INFORMATION ONLY. QUANTITIES SHOWN FOR THE CONTRACTOR TO LOCATE WHERE IMPORT/EXCAVATION IS REQUIRED.
  - QUANTITIES SHOWN ON DRAWING ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE NOT INTENDED TO BE INCLUSIVE OF ALL WORK AT ANY PARTICULAR LOCATION.
  - INFORMATION ON EARTHWORK RELATED ITEMS IS SHOWN TO PROVIDE AN OVERVIEW OF WHERE EXCESS MATERIAL AND BORROW ARE REQUIRED THROUGHOUT THE SITE FOR PLANNING PURPOSES WITH PROPOSED CONSTRUCTION ACTIVITIES.
  - CONCRETE QUANTITIES INCLUDE ANTICIPATED CONCRETE VOLUMES FOR FLATWORK ITEMS SUCH AS SIDEWALKS AND CONCRETE PADS.

TRAILHEAD PARKING LOT	
MASS SITE GRADING GRANULAR SOILS	
EXCAVATION (CY)	66
EMBANKMENT (CY)	854
NET EXCAVATION + / BORROW -	-788
PAVEMENT IMPROVEMENTS	
AGGREGATE BASE COURSE (TONS)	867

TRAILHEAD ROAD	
MASS SITE GRADING GRANULAR SOILS	
EXCAVATION (CY)	1,985
EMBANKMENT (CY)	1,226
NET EXCAVATION + / BORROW -	759
PAVEMENT IMPROVEMENTS	
AGGREGATE BASE COURSE (TONS)	2,211

SERVICE ROAD	
MASS SITE GRADING GRANULAR SOILS	
EXCAVATION (CY)	114
EMBANKMENT (CY)	137
NET EXCAVATION + / BORROW -	-23
PAVEMENT IMPROVEMENTS	
AGGREGATE BASE COURSE (TONS)	302

POND AREA	
MASS SITE GRADING GRANULAR SOILS	
EXCAVATION (CY)	34,720
EMBANKMENT (CY)	0
NET EXCAVATION + / BORROW -	34,720



DESIGNED: MJK				CHECKED: MJK				I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Certified By: <i>Michael J. Karvako</i> Lic. No. 44824 Printed Name: Michael J. Karvako Date: 12/14/09												BELTRAMI COUNTY SHOOTING SPORTS PARK PHASE 2 PHASE 2 AREA QUANTITIES SHEET				SHEET 5	
DRAWN: JWM				APPROVED: MJK																				OF 33	
DATE: 12/14/09				JOB NO.: 08-011																					
NO.		REVISIONS		BY		APR.		DATE		12/14/09		08-011													

## GENERAL NOTES

- (1) THE STATE OF MINNESOTA, DEPARTMENT OF TRANSPORTATION, "STANDARD SPECIFICATIONS FOR CONSTRUCTION", 2005 EDITION SHALL APPLY TO ALL WORK WITHIN THE LIMITS OF THIS PROJECT EXCEPT AS MODIFIED OR ALTERED IN THE ATTACHED SPECIFICATIONS.
- (2) THE LOCATION OF EXISTING UTILITIES ARE SHOWN FOR INFORMATION ONLY, AND REPRESENT THE BEST KNOWLEDGE OF THE ENGINEER. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY THE LOCATION OF THESE UTILITIES PRIOR TO COMMENCING CONSTRUCTION.
- (3) ALL REMOVED PIPE WILL BECOME PROPERTY OF THE CONTRACTOR.
- (4) THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT SILT, SOIL AND OTHER SUSPENDED PARTICLES FROM BEING DISCHARGED TO THE BODIES OF WATER OR DRAINAGE STRUCTURES IN THE CONSTRUCTION VICINITY.
- (5) DEWATERING, IF REQUIRED, SHALL BE CONSIDERED INCIDENTAL TO THE PAY ITEM. IT IS THE EXPRESSED RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE NEED FOR DEWATERING, AND VERIFY ALL EXISTING OR ANTICIPATED CONDITIONS.
- (6) ALL AREAS INDICATED AS "GRADE TO DRAIN" SHALL BE GRADED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER TO PROVIDE DRAINAGE. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE EXCAVATION AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- (7) ALL DISTURBED AREAS (INCLUDING BORROW AREAS), NOT OTHERWISE SURFACED, SHALL BE SEEDED AND MULCHED.
- (8) EXCESS EXCAVATION MATERIAL SHALL BE DISPOSED OF ONSITE AT A LOCATION CHOSEN BY OWNER/ENGINEER.
- (9) TOPSOIL WILL BE STRIPPED PRIOR TO EXCAVATION. THIS STRIPPED TOPSOIL SHALL BE SALVAGED AND STOCKPILED, TO BE SPREAD EVENLY, AFTER CONSTRUCTION, TO A MINIMUM DEPTH OF 4 INCHES ON ALL NON-SURFACED AREAS DISTURBED BY CONSTRUCTION. TOPSOIL SALVAGING AND REPLACEMENT SHALL BE PAID FOR AS UNCLASSIFIED EXCAVATION. REFER TO THE SPECIFICATIONS.
- (10) WHENEVER THE WORD "INCIDENTAL" IS USED IN THIS PLAN, IT SHALL MEAN THIS WORK WILL BE INCIDENTAL FOR WHICH NO DIRECT COMPENSATION WILL BE MADE.

STANDARD PLATES		THE FOLLOWING STANDARD PLATES APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION SHALL APPLY ON THIS PROJECT.
PLATE NO.	DESCRIPTION	
3000 L	REINFORCED CONCRETE PIPE	
3040 F	CORRUGATED METAL PIPE CULVERT	
3100 G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE	
3123 J	METAL APRON FOR C.S. PIPE	
3124 B	METAL APRON CONNECTION	
3133 C	RIPRAP AT RCP OUTLETS	
3134 C	RIPRAP AT CMP OUTLETS	
3221 C	CORRUGATED STEEL PIPE COUPLING BAND	
8000 I	STANDARD BARRICADES	

## UTILITY NOTES

1. THE INFORMATION ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS/HER OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO.
2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSURE THAT ALL UTILITIES, INCLUDING TELEPHONE, INTERNET, CABLE, ELECTRIC, GAS, WATER, SANITARY, STORM, ARE LOCATED PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES. GOPHER STATE ONE CALL 1-800-252-1166, FOR ALL UTILITIES.

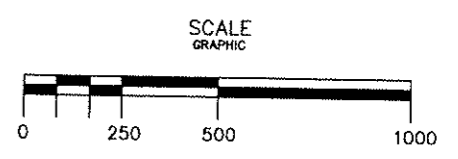
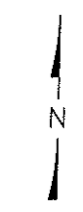
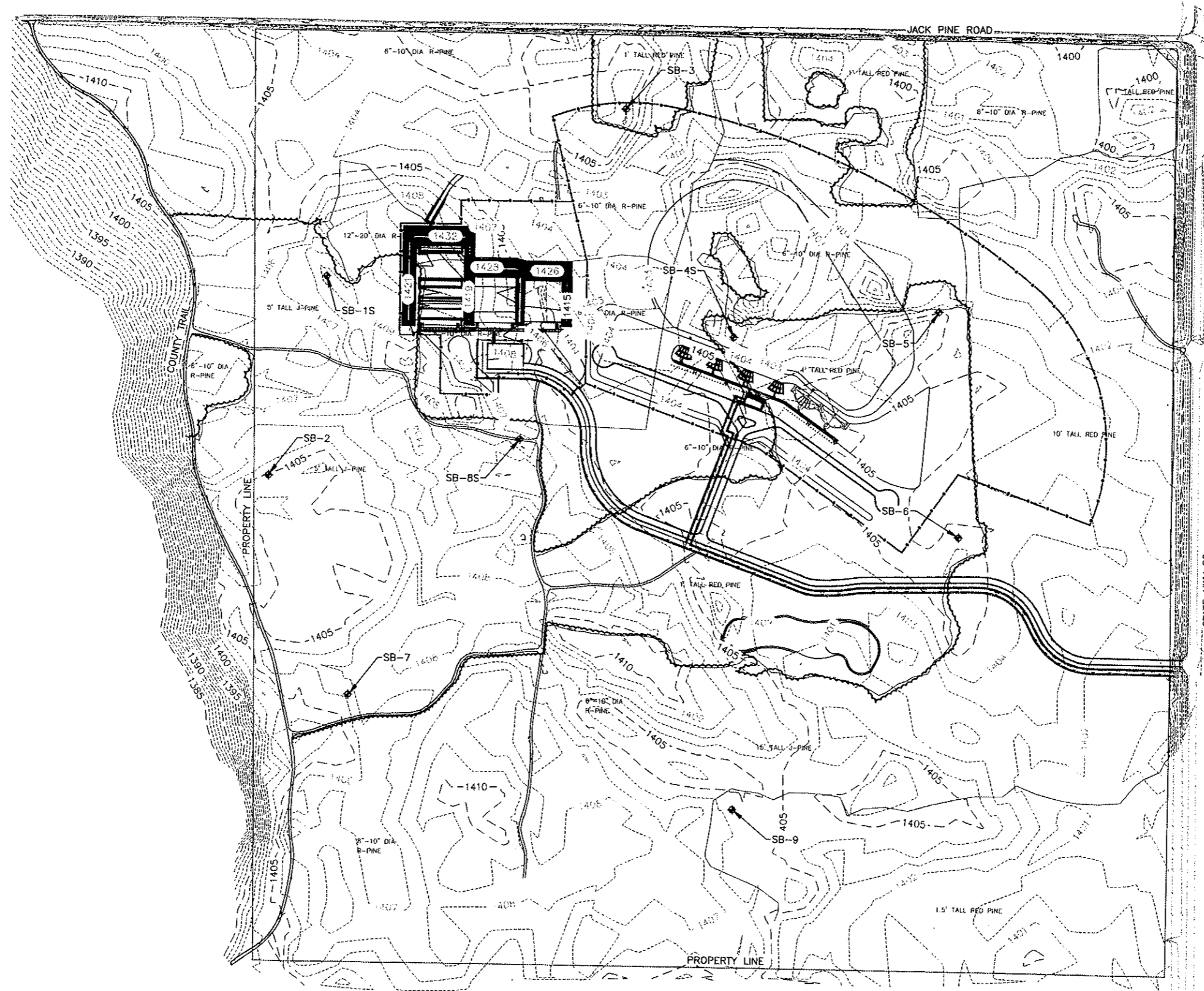
## AREA UTILITIES

PAUL BUNYAN TELEPHONE	(218) 368-1973
QWEST	(218) 568-4744
MIDCONTINENT COMMUNICATIONS	(800) 581-0081
BELTRAMI ELECTRIC	(218) 444-2540

## LEGEND

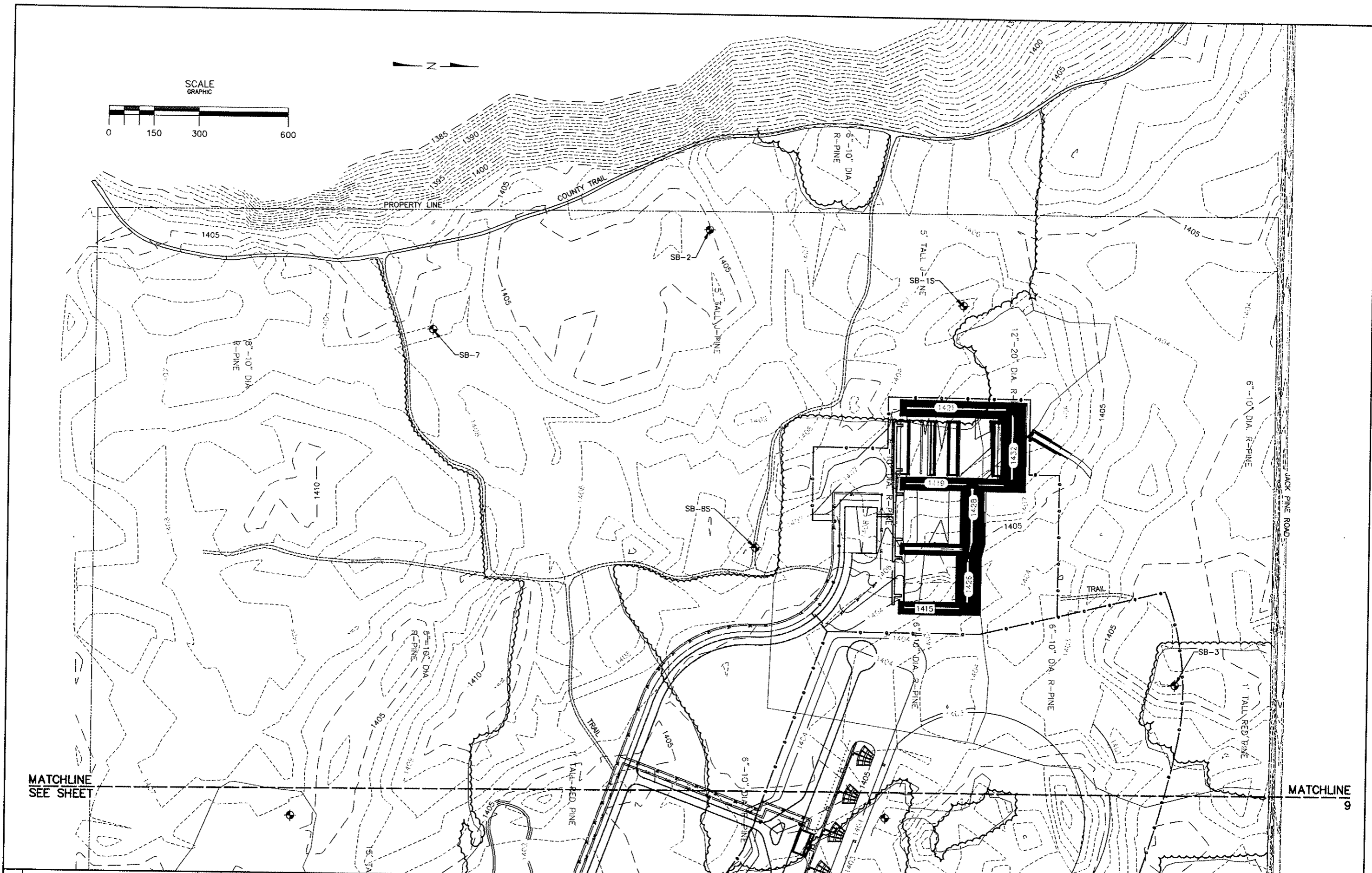
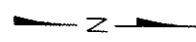
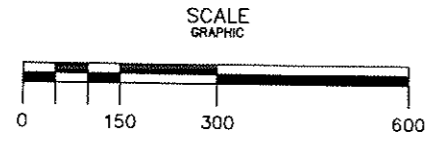
PROPOSED	EXISTING	DESCRIPTION
		PROPERTY LINES
		WATERMAIN, HYDRANT, GATE VALVE
		IRRIGATION PIPE
		WATER SERVICE WITH CURB STOP
		DRAIN TILE
		STORM DRAIN WITH MANHOLE, CATCH BASIN
		SANITARY SEWER WITH MANHOLE
		SANITARY SERVICE PIPE
		SANITARY SEWER FORCED MAIN
		UNDERGROUND TELEPHONE CONDUIT WITH MANHOLE
		UNDERGROUND FIBER OPTIC
		UNDERGROUND TELEPHONE CABLE WITH PED
		UNDERGROUND T.V. CABLE WITH PED
		UNDERGROUND ELECTRICAL WITH TRANSFORMER
		UNDERGROUND GAS LINE WITH METER
		OVERHEAD TELEPHONE CABLE
		OVERHEAD T.V. CABLE
		OVERHEAD ELECTRICAL CABLE
		CONCRETE SIDEWALK
		CURB & GUTTER
		FENCE
		BARBED WIRE
		CHAIN LINK
		STOCKADE
		TREE LINE
		TREES
		TREE REMOVAL
		UTILITY POLE/UTILITY POLE
		LIGHT POLE
		SOIL BORING
		BENCH MARK/CONTROL POINT
		OUT OF FOR QUANTITY COMPUTATIONS
		CULVERT WITH APRONS
		ELEVATION CONTOURS
		SPOT ELEVATION
		RETAINING WALL
		WATER LINE
		MARSH
<b>PROPERTY CORNERS</b>		
		IRON MONUMENT SET SET WITH CAP
		IRON MONUMENT FOUND FOUND WITH CAP
		NO MONUMENT FOUND
		BITUMINOUS/ST. ROAD
		GRAVEL/DIRT ROAD
		TREE REMOVAL AREA/CLEANING & GRUBBING

DESIGNED MJK	CHECKED MJK	I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Certified By:  Lic. No. 44824 Printed Name: Michael J. Karvako Date 12/14/09	 <b>KARVAKKO Engineering</b> 144 PAUL BUNYAN DRIVE NW - P.O. BOX 785 - BEMIDJI MN 58819 PHONE: (218) 444-8004 FAX: (218) 444-8562	 <b>Beltrami County</b> Natural Resource Management DEPARTMENT	<b>BELTRAMI COUNTY SHOOTING SPORTS PARK PHASE 2</b>	SHEET
DRAWN JMM	APPROVED MJK					6
DATE 12/14/09	JOB NO. 08-011					
NO.	REVISIONS	BY	APR.	DATE		33



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				DRAWN JMM	APPROVED MJK				<b>EXISTING SITE CONDITIONS - OVERALL</b>		OF
				DATE 12/14/09	JOB NO. 08-011						
NO.	REVISIONS	BY	APR.	DATE							



MATCHLINE  
SEE SHEET

MATCHLINE  
9

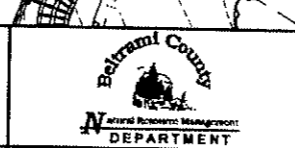
NO.	REVISIONS	BY	APR.	DATE

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DRAWN JWM	APPROVED MJK
DATE 12/14/09	JOB NO. 08-011

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BELTRAMI COUNTY SHOOTING SPORTS PARK PHASE 2  
 EXISTING SITE CONDITIONS - WEST

SHEET 8  
 OF 33

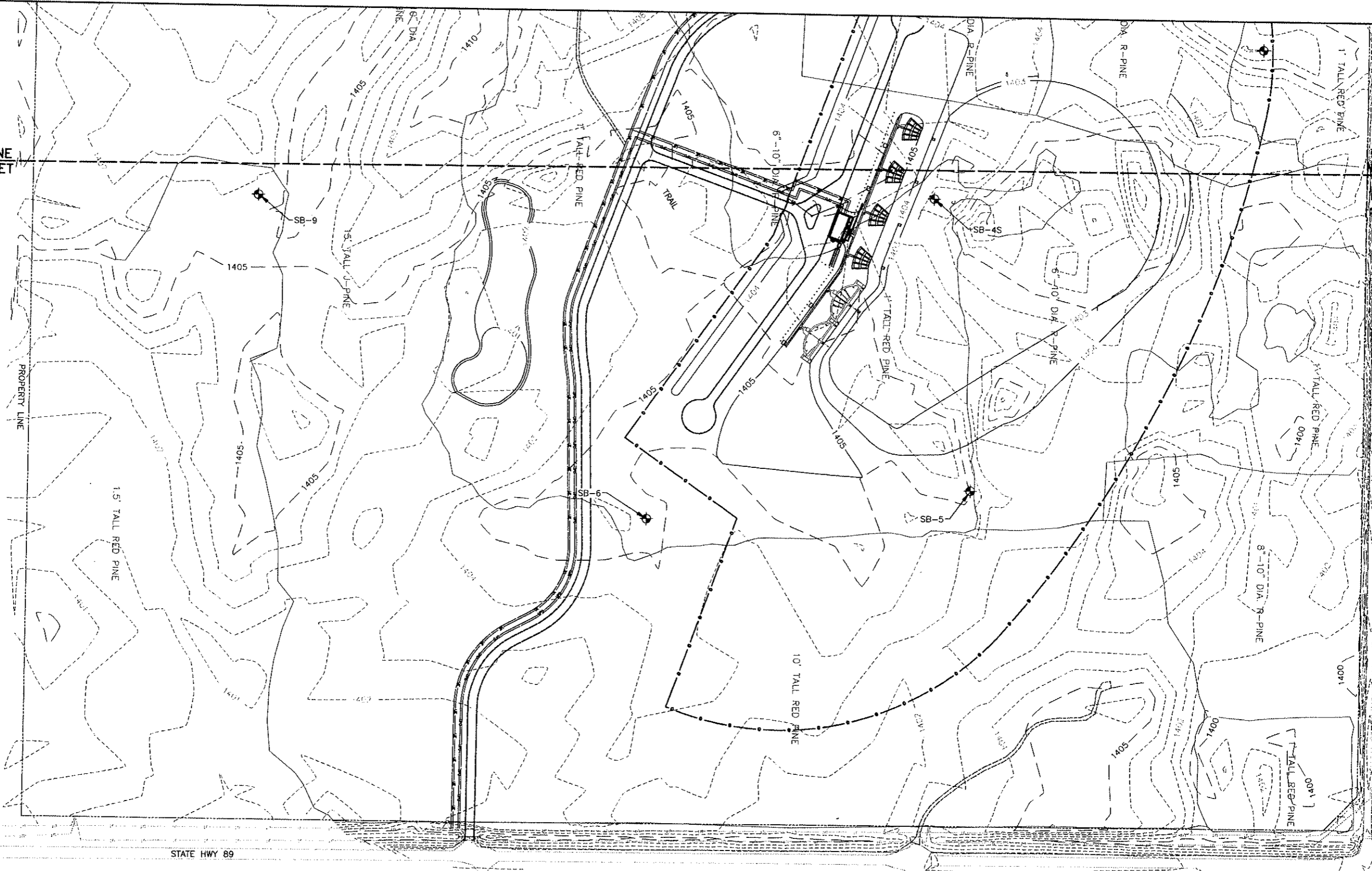
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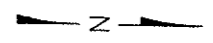
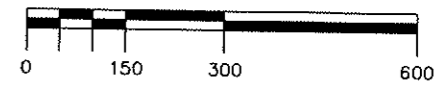
MATCHLINE  
SEE SHEET

MATCHLINE  
8



STATE HWY 89

SCALE  
GRAPHIC



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DRAWN JWM	APPROVED MJK
DATE 12/14/09	JOB NO. 08-011

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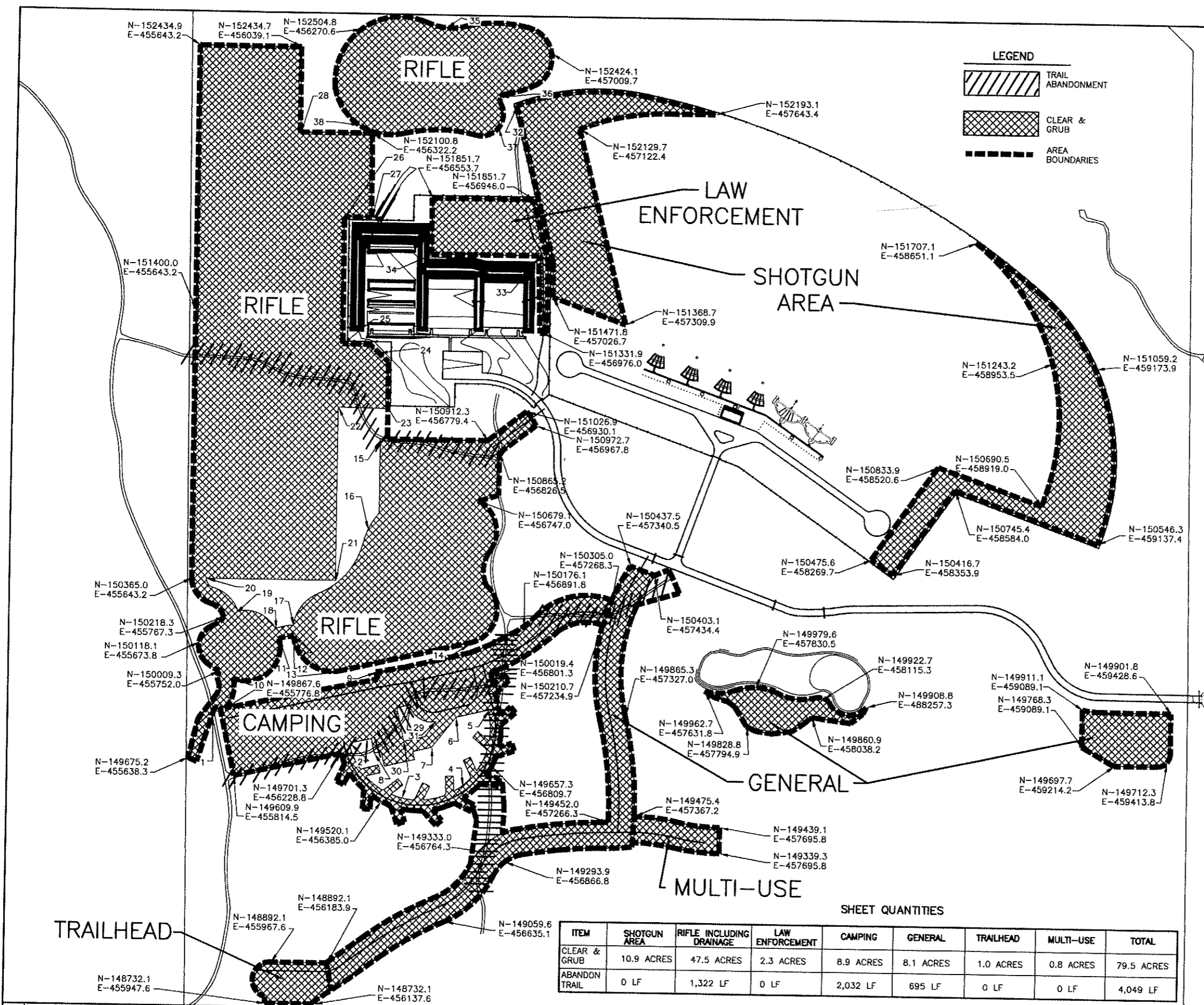
**KARVAKKO Engineering**  
 144 PAUL BUNYAN DRIVE NW ~ P.O. BOX 785 ~ BEMIDJI MN 56619  
 PHONE: (218) 444-8004 FAX: (218) 444-8562



**BELTRAMI COUNTY SHOOTING SPORTS PARK PHASE 2**  
**EXISTING SITE CONDITIONS - EAST**

SHEET **9**  
 OF **33**

CORNER LOCATIONS		
CORNER	NORTHING	EASTING
1	149862.9	455732.3
2	149728.8	456263.3
3	149533.9	456465.8
4	149643.6	456752.7
5	149876.0	456794.1
6	149846.3	456667.8
7	149730.2	456576.9
8	149704.7	456358.2
9	150016.0	456360.9
10	149982.9	455807.3
11	150138.1	455983.4
12	150149.8	456037.1
13	150019.3	456225.2
14	150133.6	456720.0
15	150912.5	456366.7
16	150569.7	456327.3
17	150190.9	456036.7
18	150176.6	455972.9
19	150240.8	455822.9
20	150365.0	455698.2
21	150365.0	456199.4
22	151031.8	456201.2
23	151029.8	456395.4
24	151245.0	456358.0
25	151278.9	456215.6
26	151771.4	456215.6
27	151771.4	456322.3
28	152100.8	456039.4
29	149891.7	456491.0
30	149752.2	456471.3
31	149828.2	456590.1
32	152217.1	456877.1
33	151632.2	456976.0
34	151632.2	456553.7
35	152517.8	456599.8
36	152263.3	456835.9
37	152130.1	456806.3
38	152130.8	456270.0



SHEET QUANTITIES								
ITEM	SHOTGUN AREA	RIFLE INCLUDING DRAINAGE	LAW ENFORCEMENT	CAMPING	GENERAL	TRAILHEAD	MULTI-USE	TOTAL
CLEAR & GRUB	10.9 ACRES	47.5 ACRES	2.3 ACRES	8.9 ACRES	8.1 ACRES	1.0 ACRES	0.8 ACRES	79.5 ACRES
ABANDON TRAIL	0 LF	1,322 LF	0 LF	2,032 LF	695 LF	0 LF	0 LF	4,049 LF

NO.	REVISIONS	BY	APR.	DATE

DESIGNED MJK	CHECKED MJK
DRAWN JWM	APPROVED MJK
DATE 12/14/09	JOB NO. 08-011

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 Printed Name: Michael J. Karvako Date 12/14/09

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 144 PAUL BUNYAN DRIVE NW - P.O. BOX 785 - BEMIDJI MN 56619  
 PHONE: (218) 444-8004 FAX: (218) 444-8562

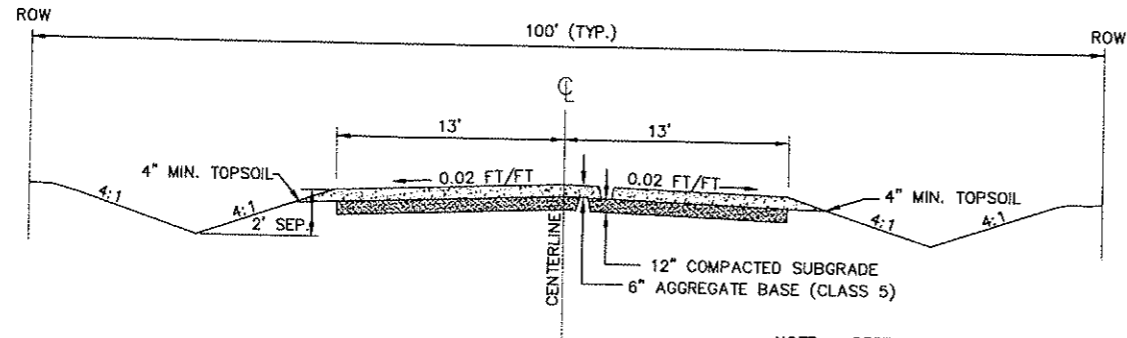


**BELTRAMI COUNTY SHOOTING SPORTS PARK PHASE 2**

**DEMOLITION & REMOVALS**

SHEET **10**  
OF **33**

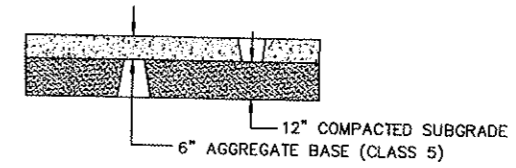
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NOTE: REFER TO PLAN & PROFILE SHEETS FOR SPECIAL DITCH GRADES AND ELEVATIONS. CONTRACTOR SHALL STILL MAINTAIN A 4:1 INSLOPE AND BACKSLOPE.

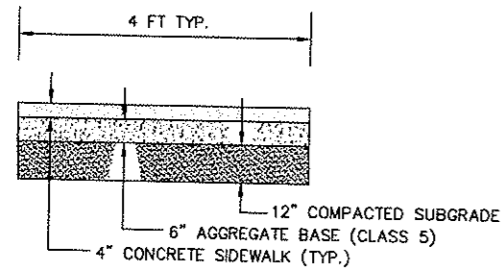
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11 ACCESS ROADS TYPICAL SECTION

NO SCALE



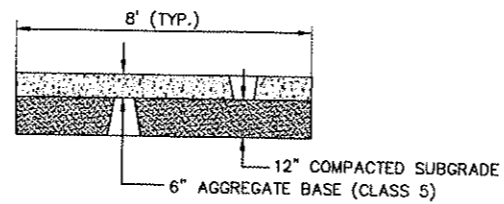
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11 PARKING LOT TYPICAL SECTION

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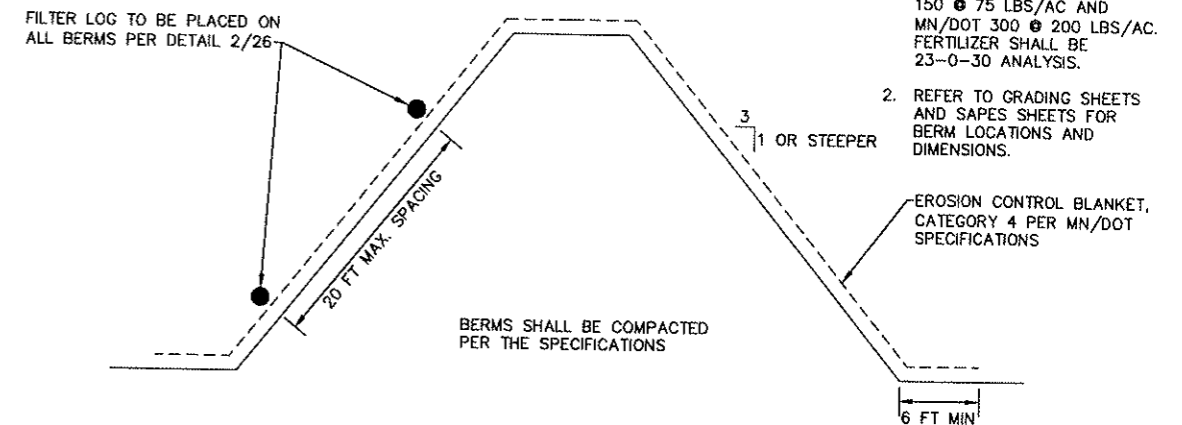
3  
11 CONCRETE SIDEWALK TYPICAL SECTION

NO SCALE



4  
11 AGGREGATE PATH TYPICAL SECTION

NO SCALE



5  
11 BERM TYPICAL SECTION

NO SCALE

- NOTES:
- BERMS SHALL BE SEEDED WITH A SPECIAL SEED MIXTURE. MIXTURE SHALL BE A COMBINATION OF MN/DOT 150 @ 75 LBS/AC AND MN/DOT 300 @ 200 LBS/AC. FERTILIZER SHALL BE 23-0-30 ANALYSIS.
  - REFER TO GRADING SHEETS AND SITES SHEETS FOR BERM LOCATIONS AND DIMENSIONS.

EROSION CONTROL BLANKET, CATEGORY 4 PER MN/DOT SPECIFICATIONS

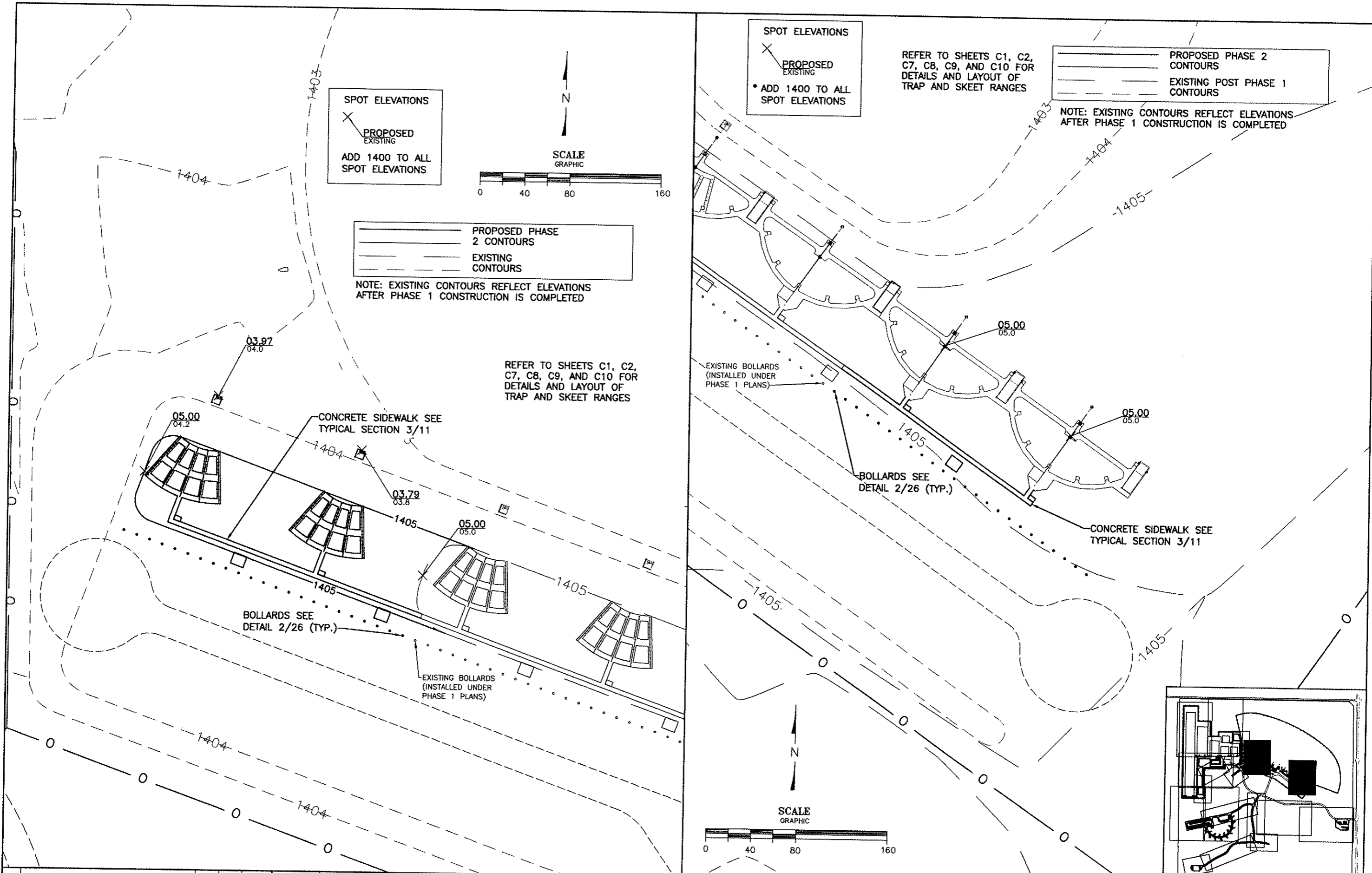
BERMS SHALL BE COMPACTED PER THE SPECIFICATIONS

BELTRAMI COUNTY SHOOTING SPORTS PARK PHASE 2  
TYPICAL SECTIONS

SHEET 11  
OF 33

DESIGNED MJK	CHECKED JM	I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Certified By: <i>[Signature]</i> Lic. No. 44624 Printed Name: Michael J. Karvako Date 12/14/08	 144 PAUL BUNYAN DRIVE NW - P.O. BOX 785 - BEMIDJI MN 56619 PHONE: (218) 444-8004 FAX: (218) 444-8562	 BELTRAMI COUNTY Natural Resource Management DEPARTMENT	BELTRAMI COUNTY SHOOTING SPORTS PARK PHASE 2 TYPICAL SECTIONS	SHEET 11
DRAWN SVM	APPROVED MJK					OF 33
DATE 12/14/08	JOB NO. 08-011					
NO.	REVISIONS	BY	APR.	DATE		

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NO.	REVISIONS	BY	APR.	DATE

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DRAWN JWM	APPROVED MJK
DATE 12/14/09	JOB NO. 08-011

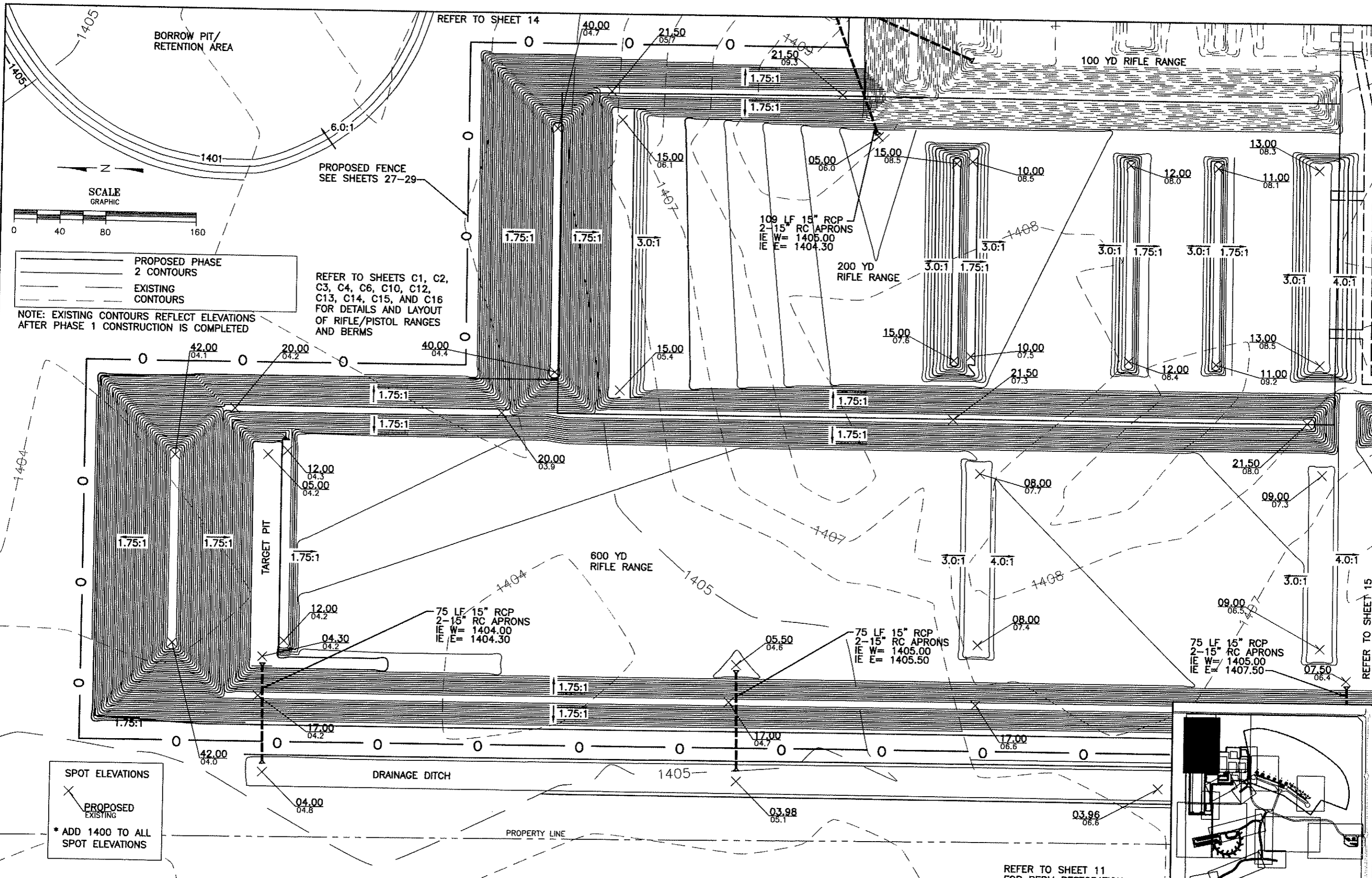
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Certified By: *[Signature]* Lic. No. 44824  
 Printed Name: Michael J. Karvacko Date 12/14/09

**KARVACKO Engineering**  
 144 PAUL BUNYAN DRIVE NW - P.O. BOX 785 - BEMIDJI MN 56619  
 PHONE: (218) 444-8004 FAX: (218) 444-8562



<b>BELTRAMI COUNTY SHOOTING SPORTS PARK PHASE 2</b>		SHEET
<b>GRADING PLAN</b>		12
		OF
		33



——— PROPOSED PHASE 2 CONTOURS  
 - - - - - EXISTING CONTOURS

NOTE: EXISTING CONTOURS REFLECT ELEVATIONS AFTER PHASE 1 CONSTRUCTION IS COMPLETED

REFER TO SHEETS C1, C2, C3, C4, C6, C10, C12, C13, C14, C15, AND C16 FOR DETAILS AND LAYOUT OF RIFLE/PISTOL RANGES AND BERMS

X SPOT ELEVATIONS  
 X PROPOSED  
 X EXISTING  
 \* ADD 1400 TO ALL SPOT ELEVATIONS

NO.	REVISIONS	BY	APR.	DATE

DESIGNED	CHECKED
MJK	MJK
DRAWN	APPROVED
JWM	MJK
DATE	JOB NO.
12/14/09	08-011

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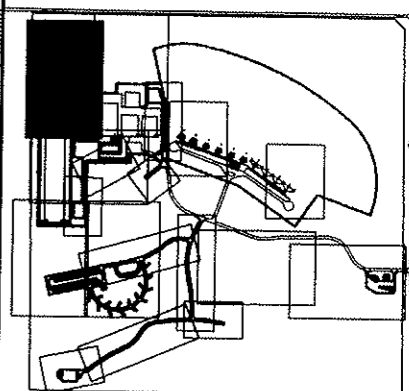
Certified By: Michael J. Karvacko Lic. No. 44824  
 Printed Name: Michael J. Karvacko Date 12/14/09

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 144 PAUL BUNYAN DRIVE NW - P.O. BOX 785 - BEMIDJI MN 56619  
 PHONE: (218) 444-8004 FAX: (218) 444-8562

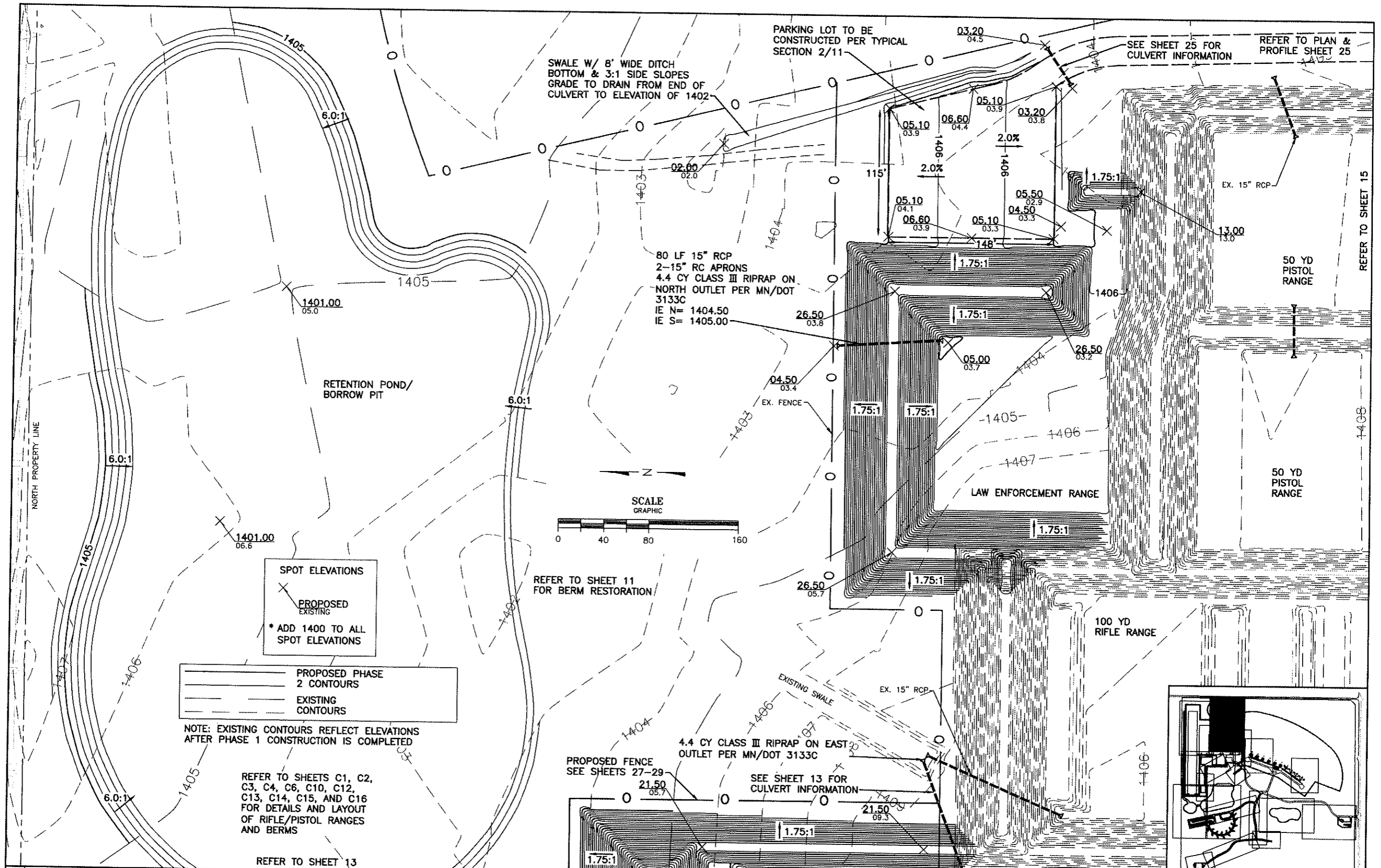


BELTRAMI COUNTY SHOOTING SPORTS PARK PHASE 2  
**GRADING PLAN**

REFER TO SHEET 11 FOR BERM RESTORATION



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SPOT ELEVATIONS  
 X PROPOSED  
 O EXISTING  
 \* ADD 1400 TO ALL SPOT ELEVATIONS

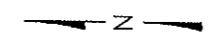
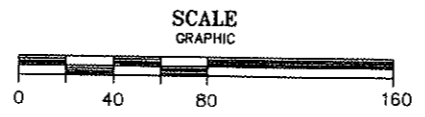
PROPOSED PHASE 2 CONTOURS  
 EXISTING CONTOURS

NOTE: EXISTING CONTOURS REFLECT ELEVATIONS AFTER PHASE 1 CONSTRUCTION IS COMPLETED

REFER TO SHEETS C1, C2, C3, C4, C6, C10, C12, C13, C14, C15, AND C16 FOR DETAILS AND LAYOUT OF RIFLE/PISTOL RANGES AND BERMS

REFER TO SHEET 13

REFER TO SHEET 11 FOR BERM RESTORATION



NO.	REVISIONS	BY	APR.	DATE	DESIGNED	CHECKED	DATE	JOB NO.
				12/14/09	MJK	MJK		08-011
					JWM	MJK		

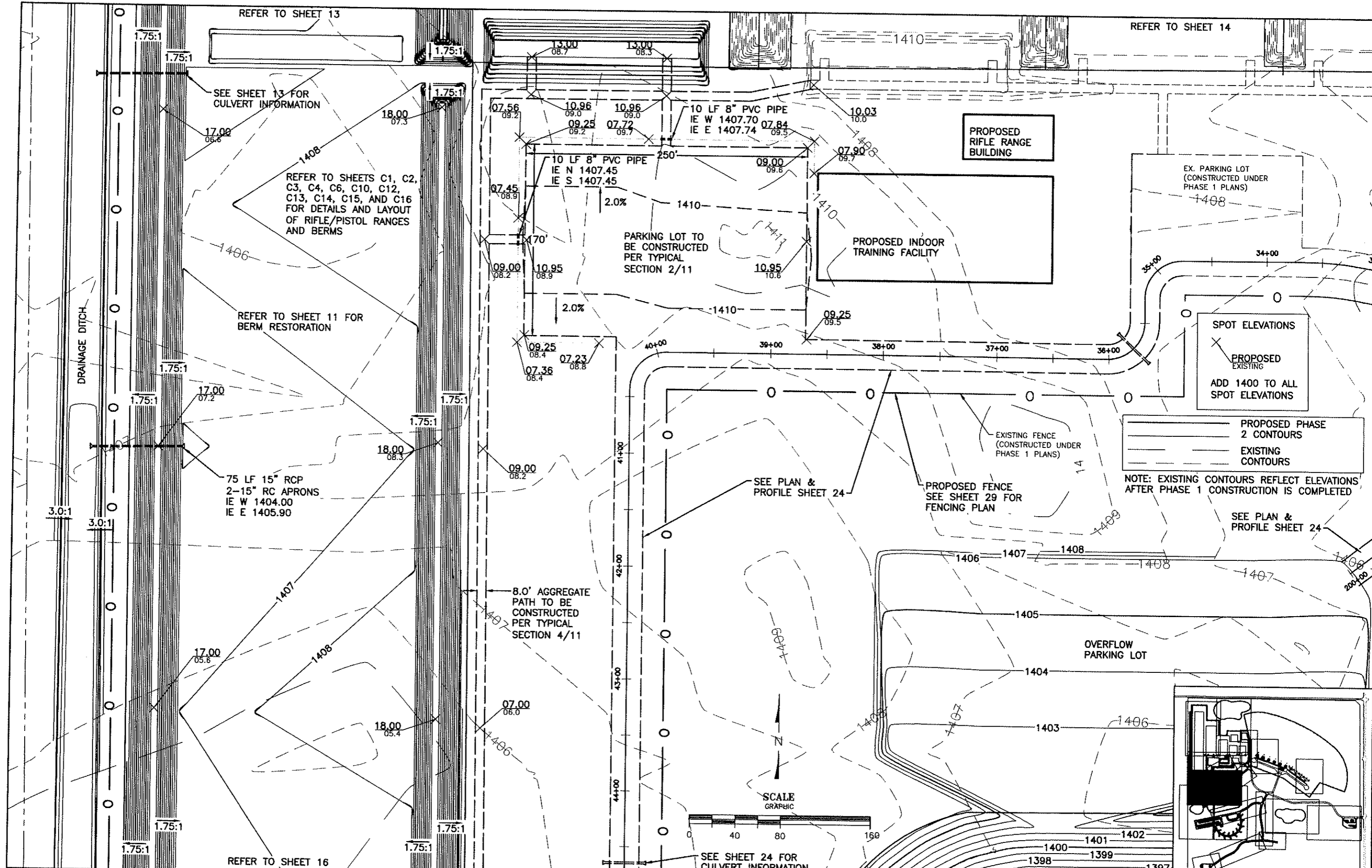
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 Printed Name: Michael J. Karvako Date 12/14/09

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 PHONE: (218) 444-8004 FAX: (218) 444-8582



BELTRAMI COUNTY SHOOTING SPORTS PARK PHASE 2  
**GRADING PLAN**

SHEET 14  
 OF 33



NO.	REVISIONS	BY	APR.	DATE

DESIGNED MJK	CHECKED MJK
DRAWN JWM	APPROVED MJK
DATE 12/14/09	JOB NO. 08-011

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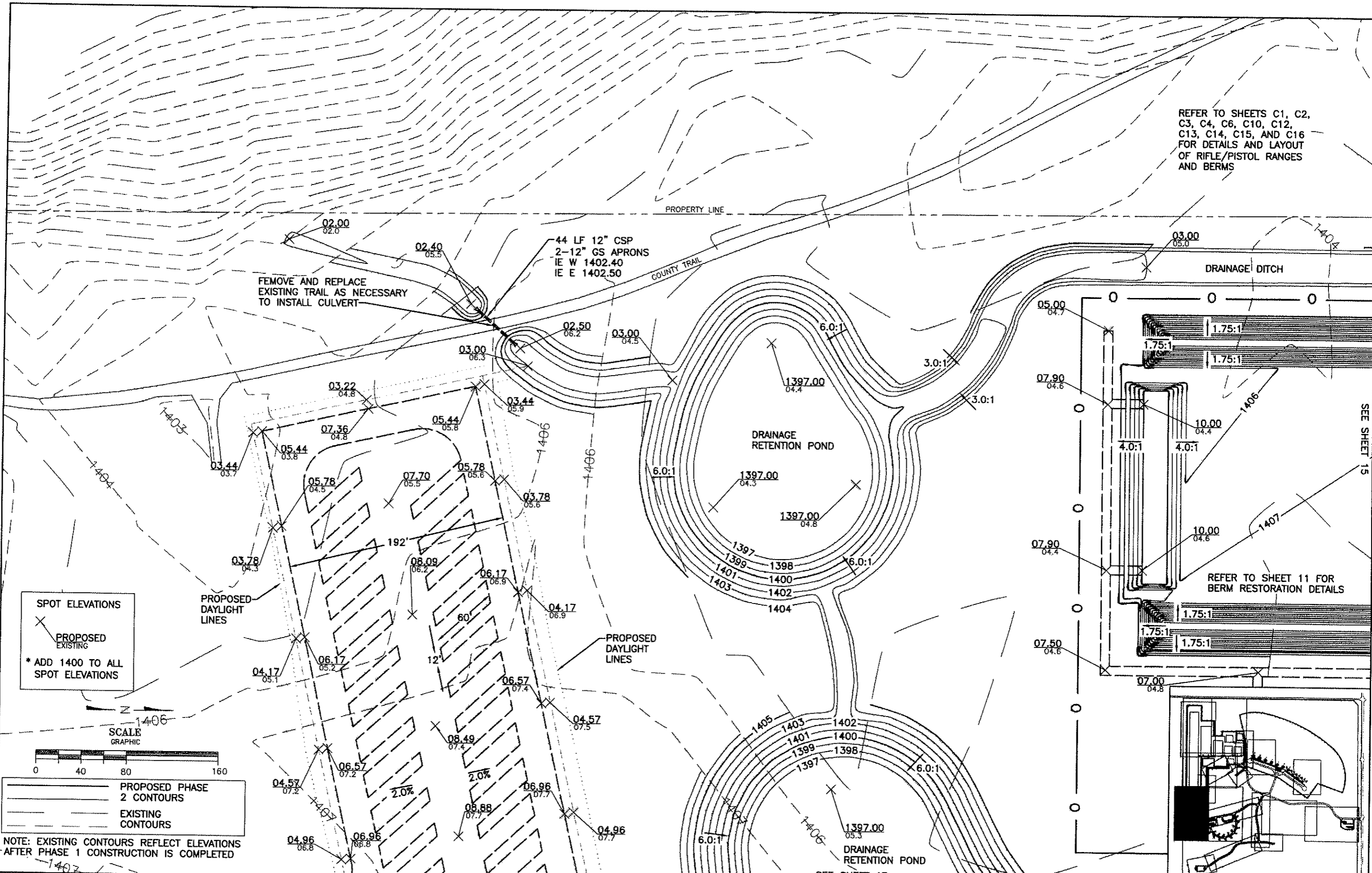
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PHONE: (218) 444-8004 FAX: (218) 444-8582



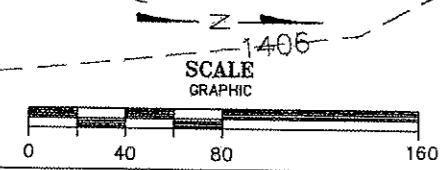
BELTRAMI COUNTY SHOOTING SPORTS PARK PHASE 2  
GRADING PLAN

SHEET 15 OF 33

REFER TO SHEETS C1, C2, C3, C4, C6, C10, C12, C13, C14, C15, AND C16 FOR DETAILS AND LAYOUT OF RIFLE/PISTOL RANGES AND BERMS



**SPOT ELEVATIONS**  
 X PROPOSED  
 O EXISTING  
 \* ADD 1400 TO ALL SPOT ELEVATIONS



PROPOSED PHASE 2 CONTOURS  
 EXISTING CONTOURS

NOTE: EXISTING CONTOURS REFLECT ELEVATIONS AFTER PHASE 1 CONSTRUCTION IS COMPLETED

NO.	REVISIONS	BY	APR.	DATE

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DRAWN JWM	APPROVED MJK
DATE 12/14/09	JOB NO. 08-011

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**BELTRAMI COUNTY SHOOTING SPORTS PARK PHASE 2**  
**GRADING PLAN**

SHEET 16 OF 33

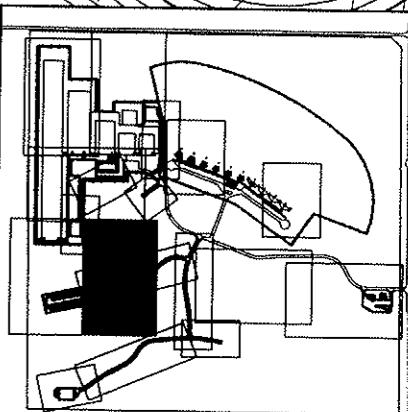
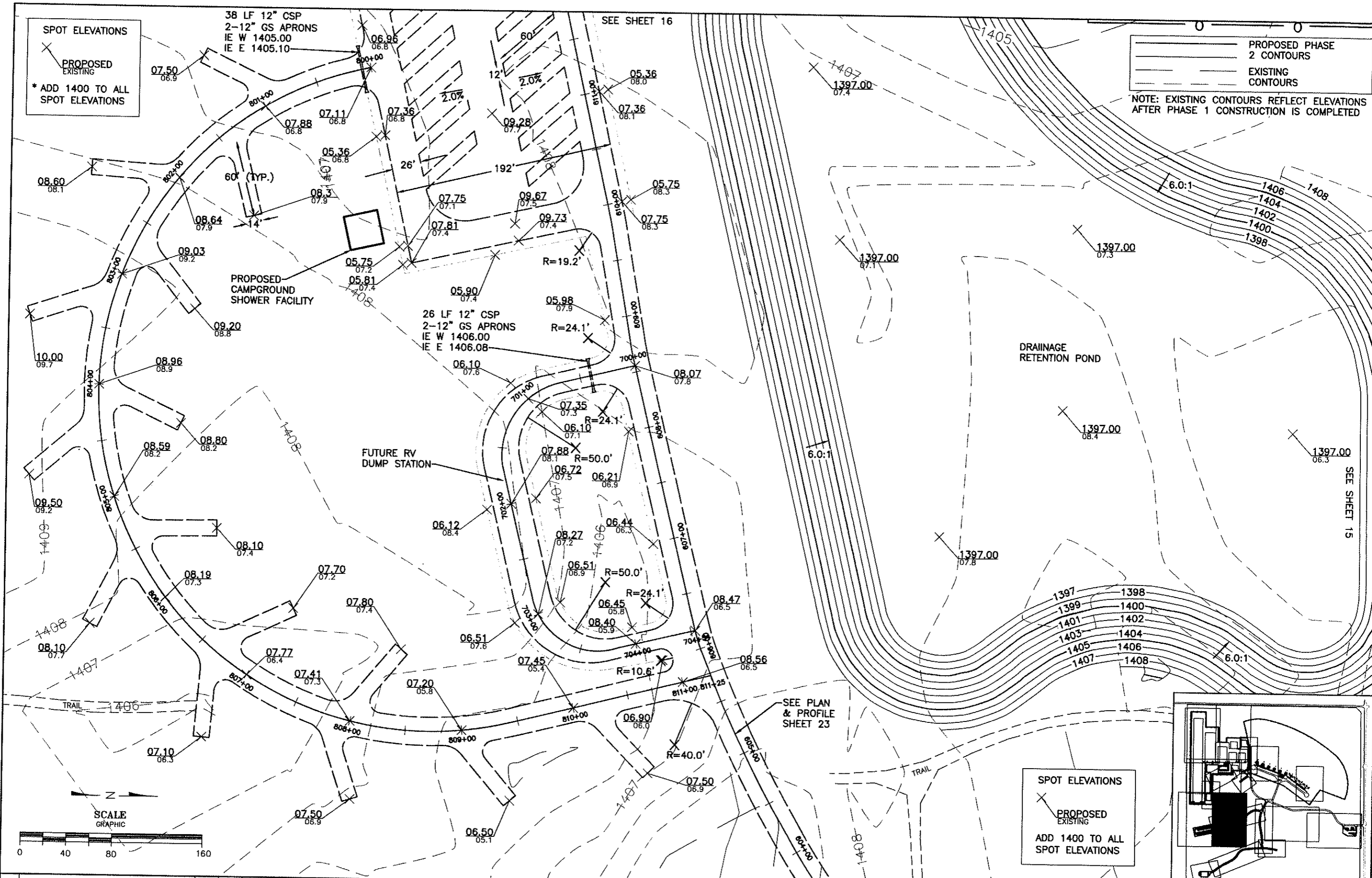
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SPOT ELEVATIONS  
 X PROPOSED  
 O EXISTING  
 \* ADD 1400 TO ALL SPOT ELEVATIONS

PROPOSED PHASE 2 CONTOURS  
 EXISTING CONTOURS

NOTE: EXISTING CONTOURS REFLECT ELEVATIONS AFTER PHASE 1 CONSTRUCTION IS COMPLETED



SPOT ELEVATIONS  
 X PROPOSED  
 O EXISTING  
 ADD 1400 TO ALL SPOT ELEVATIONS

NO.	REVISIONS	BY	APR.	DATE

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DRAWN JMM	APPROVED MJK
DATE 12/14/09	JOB NO. 08-011

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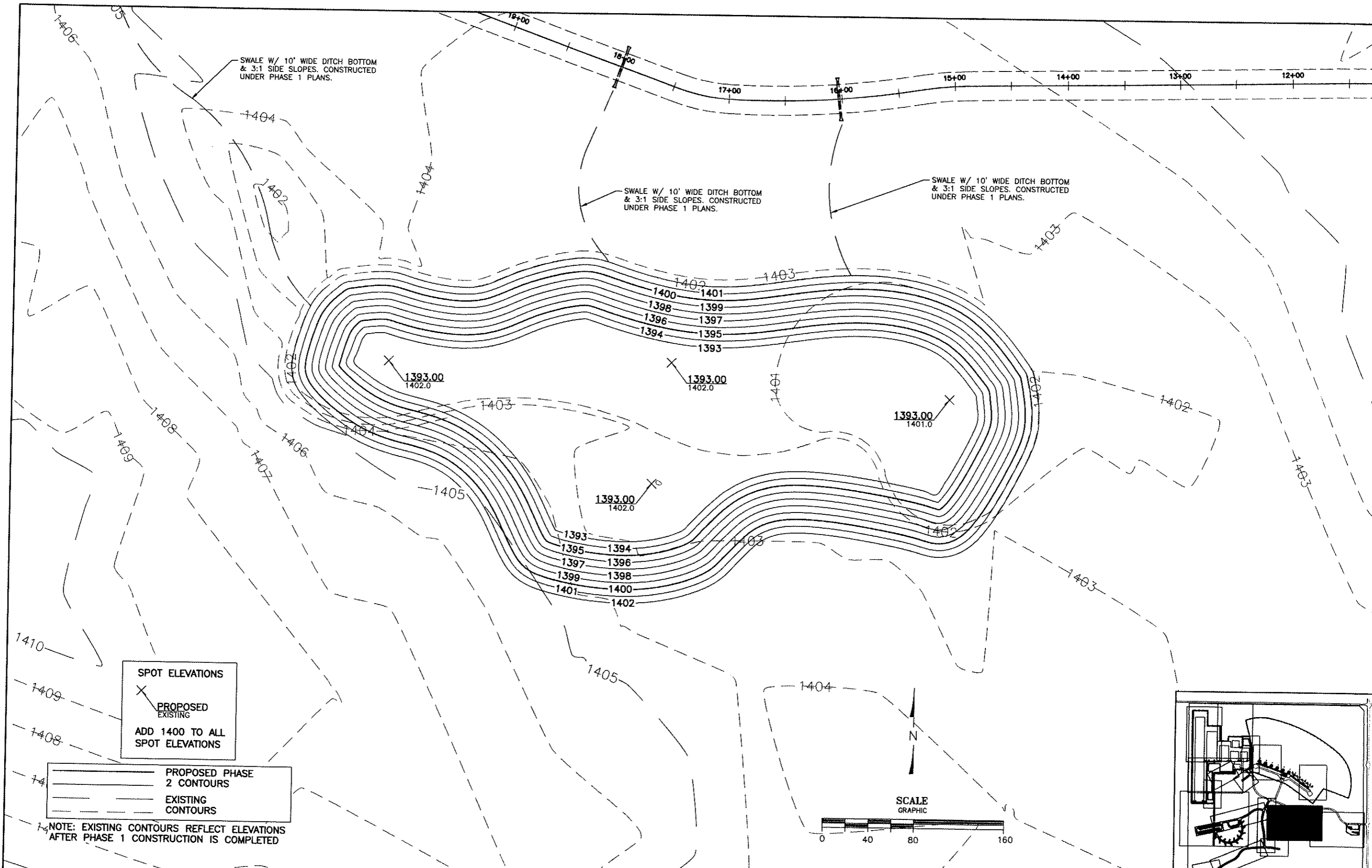
**KARVAKKO Engineering**  
 144 PAUL BURNAN DRIVE NW - P.O. BOX 785 - BEMIDJI MN 56619  
 PHONE: (218) 444-8004 FAX: (218) 444-8502



BELTRAMI COUNTY SHOOTING SPORTS PARK PHASE 2  
**GRADING PLAN**

SHEET 17  
 OF 33

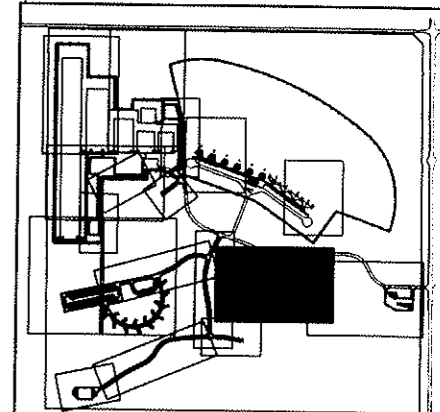
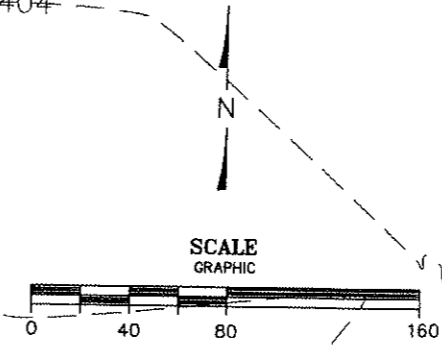
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**SPOT ELEVATIONS**  
 X PROPOSED  
 EXISTING  
 ADD 1400 TO ALL  
 SPOT ELEVATIONS

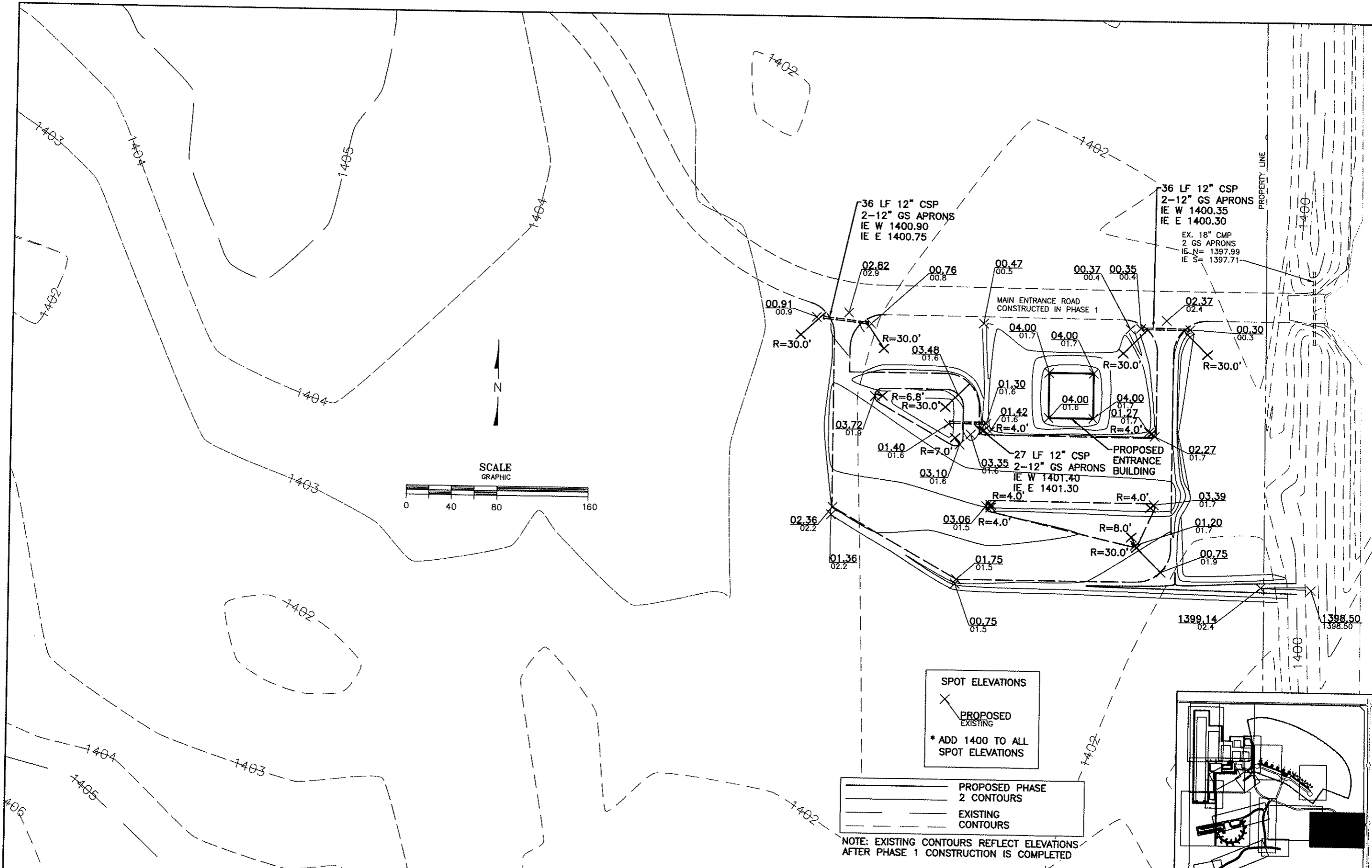
PROPOSED PHASE  
 2 CONTOURS  
 EXISTING  
 CONTOURS

NOTE: EXISTING CONTOURS REFLECT ELEVATIONS  
 AFTER PHASE 1 CONSTRUCTION IS COMPLETED



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				DRAWN JMM	APPROVED MJK				<b>GRADING PLAN</b>		OF 33
NO.	REVISIONS	BY	DATE	DATE 12/14/09	JOB NO. 08-011						

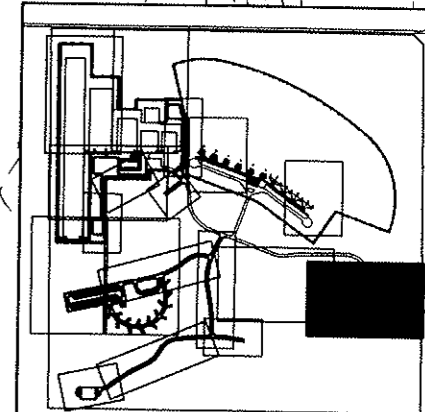
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SPOT ELEVATIONS  
 X PROPOSED  
 O EXISTING  
 \* ADD 1400 TO ALL SPOT ELEVATIONS

PROPOSED PHASE 2 CONTOURS  
 EXISTING CONTOURS

NOTE: EXISTING CONTOURS REFLECT ELEVATIONS AFTER PHASE 1 CONSTRUCTION IS COMPLETED



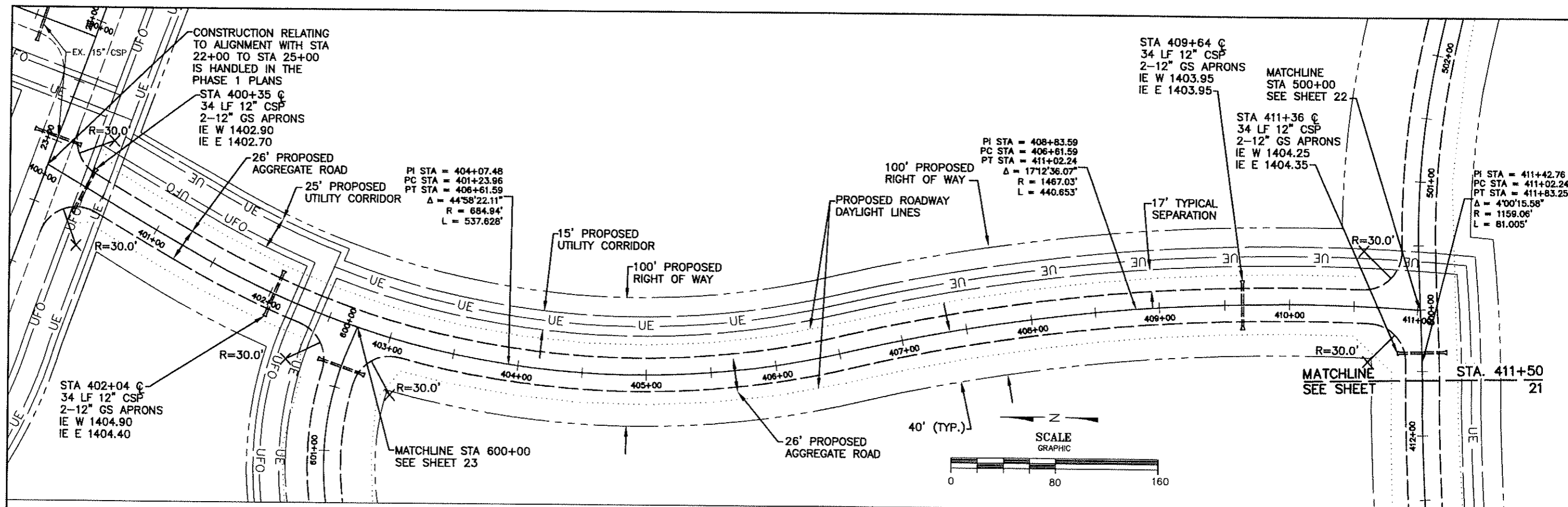
NO.	REVISIONS	BY	APR.	DATE

DESIGNED MJK	CHECKED MJK
DRAWN JMM	APPROVED MJK
DATE 12/14/09	JOB NO. 08-011

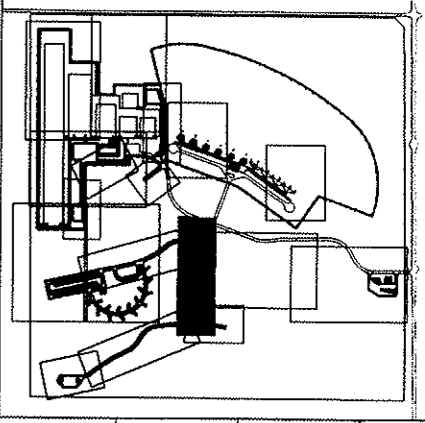
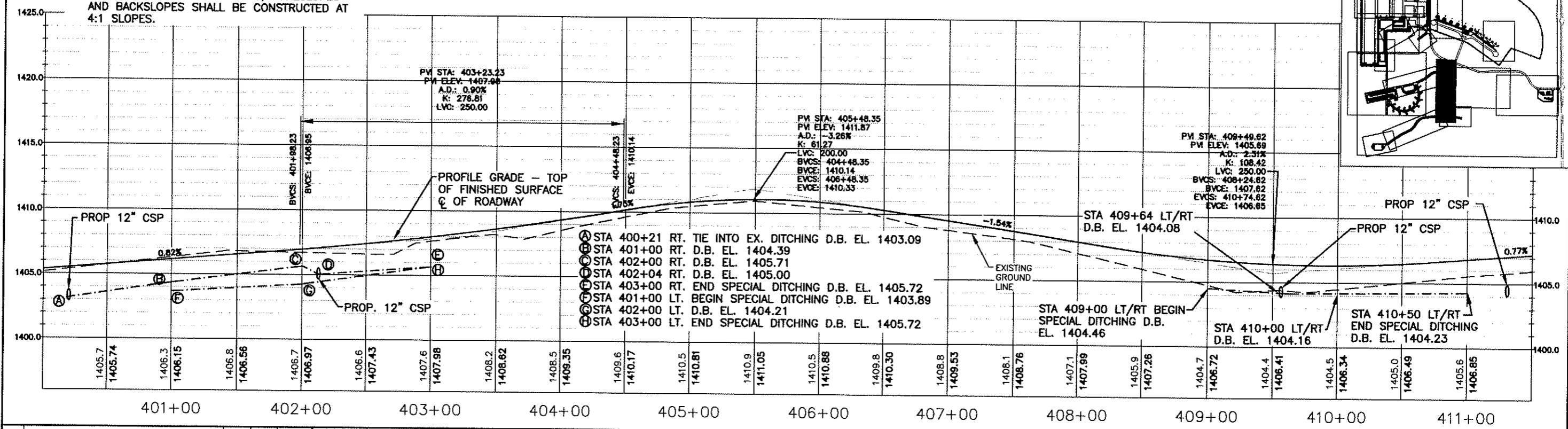
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Certified By: *[Signature]* Lic. No. 44624  
 Printed Name: Michael J. Karvako Date 12/14/09

**KARVAKKO Engineering**  
 144 PAUL BUNYAN DRIVE NW - P.O. BOX 785 - BEMIDJI MN 56618  
 PHONE: (218) 444-8004 FAX: (218) 444-6562



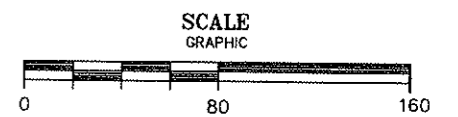
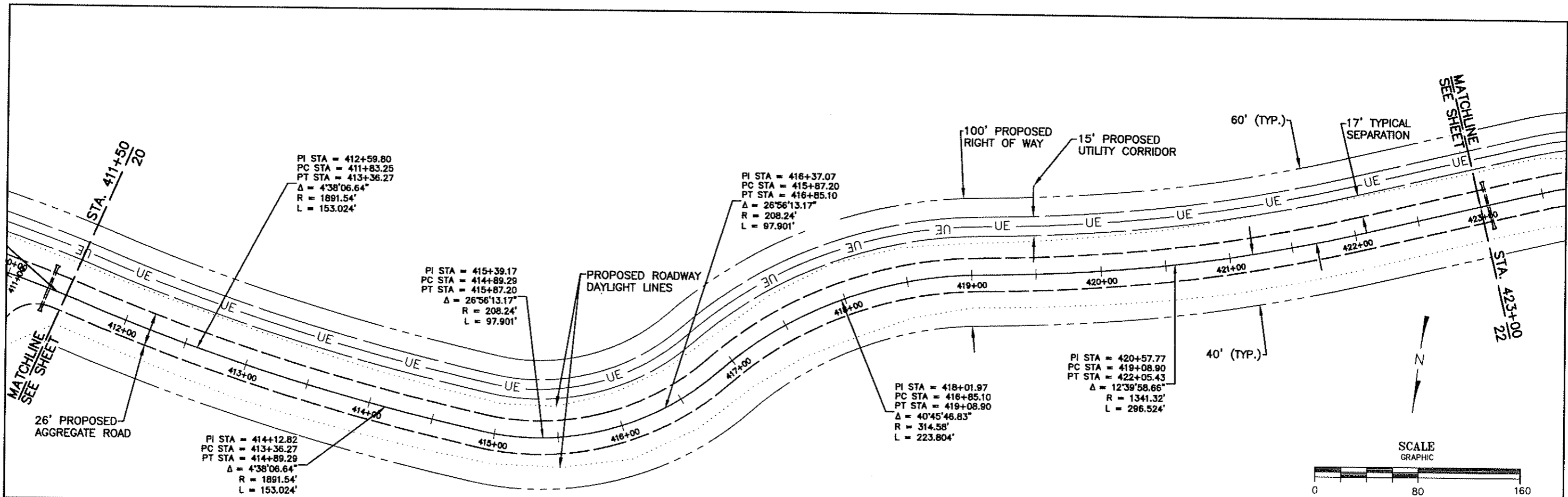


- NOTES:**
1. TYPICAL SECTION 1/11 TO BE FOLLOWED IN ALL AREAS EXCEPT WHERE SPECIAL DITCHING IS SHOWN IN PROFILE VIEW.
  2. IN SPECIAL DITCHING SECTIONS, FORESLOPES AND BACKSLOPES SHALL BE CONSTRUCTED AT 4:1 SLOPES.



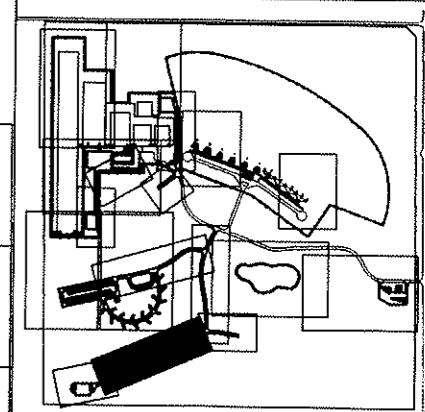
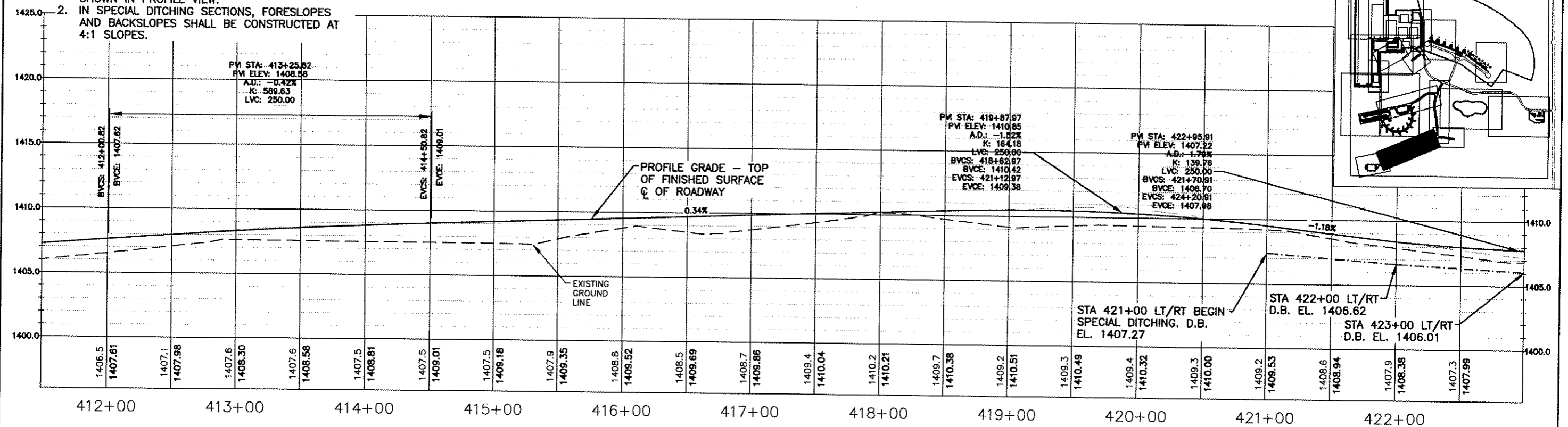
DESIGNED MJK	CHECKED MJK	I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  Certified By: <i>[Signature]</i> Lic. No. 44624 Printed Name: Michael J. Karvako Date 12/14/08	 144 PAUL BUNYAN DRIVE NW - P.O. BOX 785 - BEMIDJI MN 56619 PHONE: (218) 444-8004 FAX: (218) 444-8562	 BELTRAMI COUNTY SHOOTING SPORTS PARK PHASE 2	SHEET <b>20</b> OF <b>33</b>
DRAWN JWM	APPROVED MJK				
NO.	REVISIONS	DATE	BY	APR.	DATE
		12/14/08			08-011

S:\Project Drawings\08-011 GSN CLUB\DESIGN\DWG\PHASE 2 DRAWINGS\PLAN & PROFILE TRAILHEAD ROAD.dwg, 12/17/2009 11:07:20 AM, 1:1



**NOTES:**

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DESIGNED MJK	CHECKED MJK
DRAWN JWM	APPROVED MJK
DATE 12/14/09	JOB NO. 08-011
REVISIONS	
BY	APR. DATE

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 Certified By: *[Signature]* Lic. No. 44824  
 Printed Name: Michael J. Karvacko Date 12/14/09

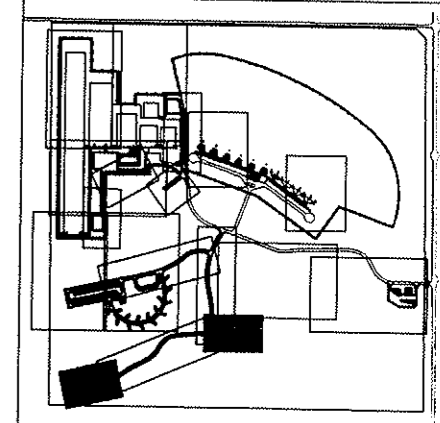
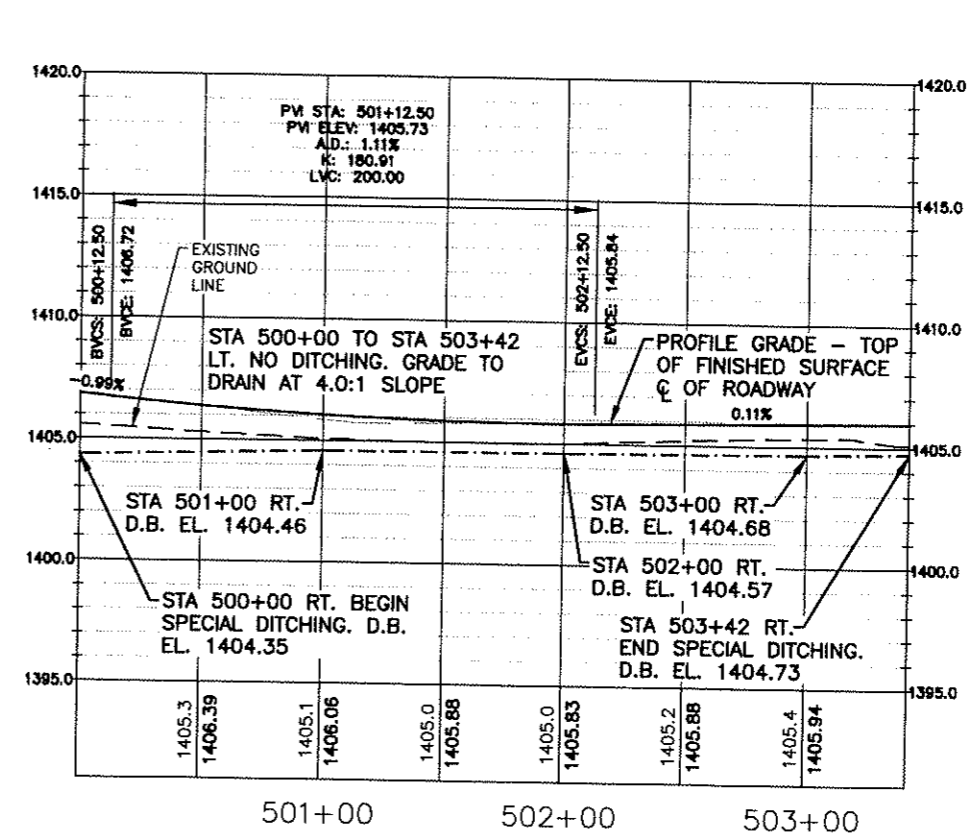
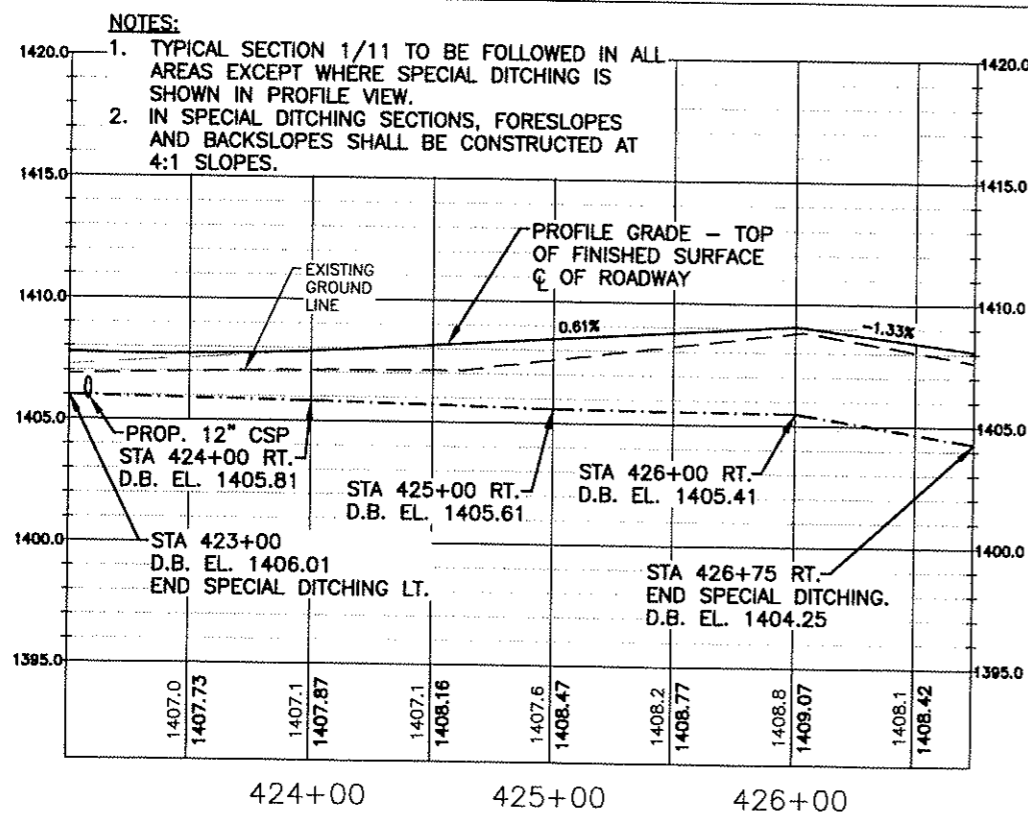
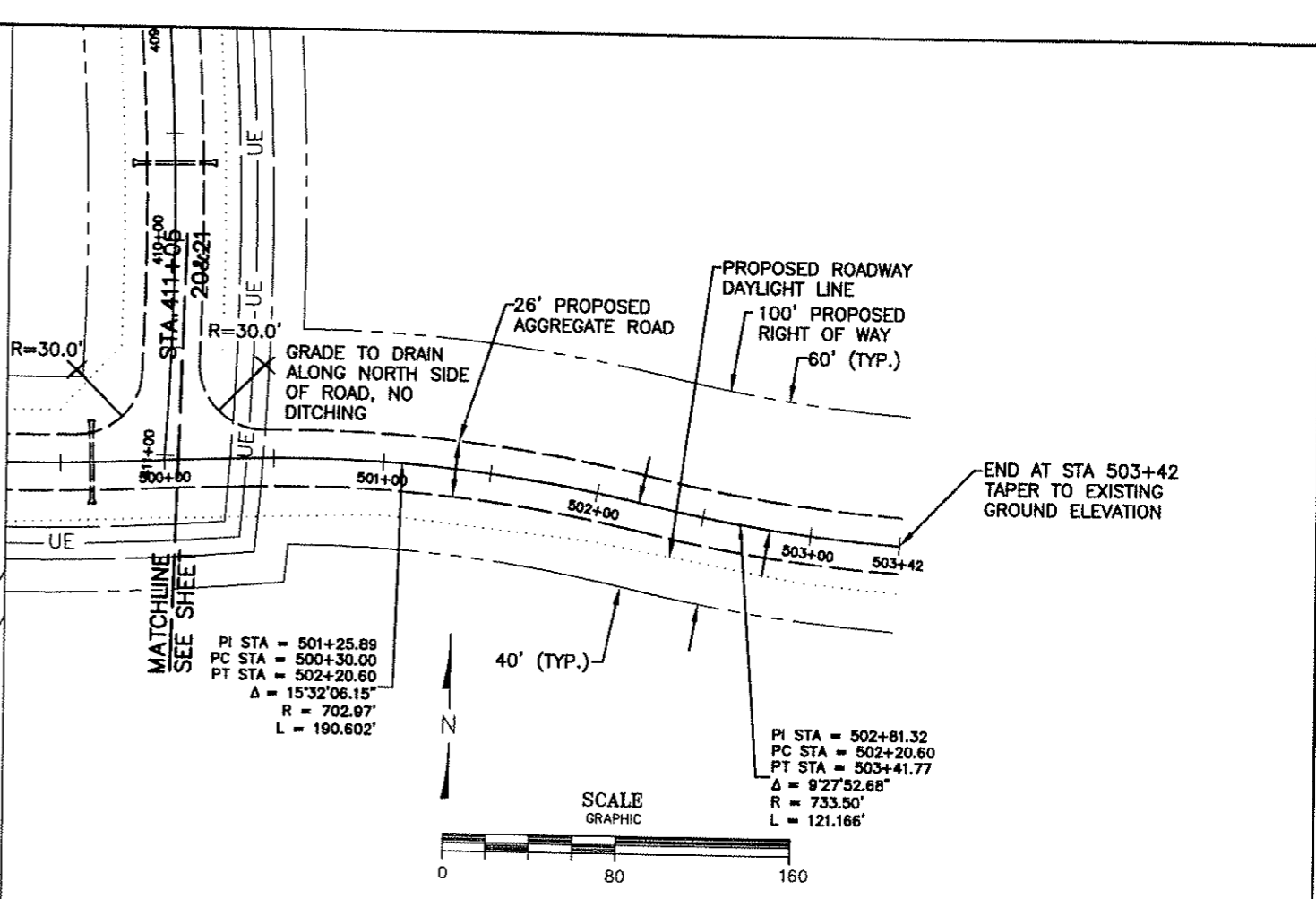
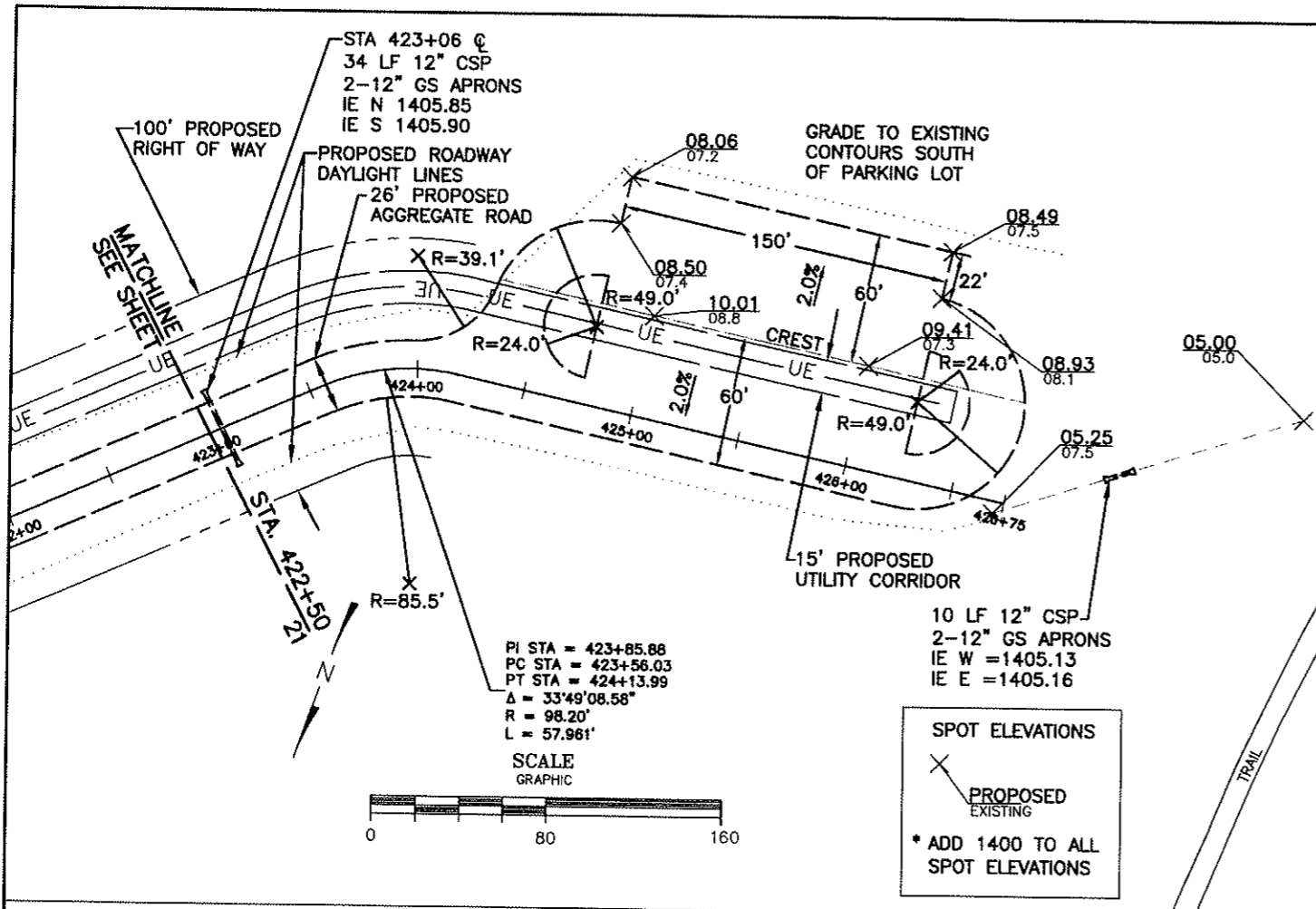
**KARVACKO Engineering**  
 144 PAUL BUNYAN DRIVE NW - P.O. BOX 785 - BEMIDJI MN 56619  
 PHONE: (218) 444-8004 FAX: (218) 444-8562



**BELTRAMI COUNTY SHOOTING SPORTS PARK PHASE 2**  
**PLAN & PROFILE**

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NO.	REVISIONS	BY	APR.	DATE

DESIGNED MJK  
 CHECKED MJK  
 DRAWN JWM  
 APPROVED MJK  
 DATE 12/14/09  
 JOB NO. 08-011

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 Certified By: *[Signature]* Lic. No. 44824  
 Printed Name: Michael J. Karvacko Date 12/14/09

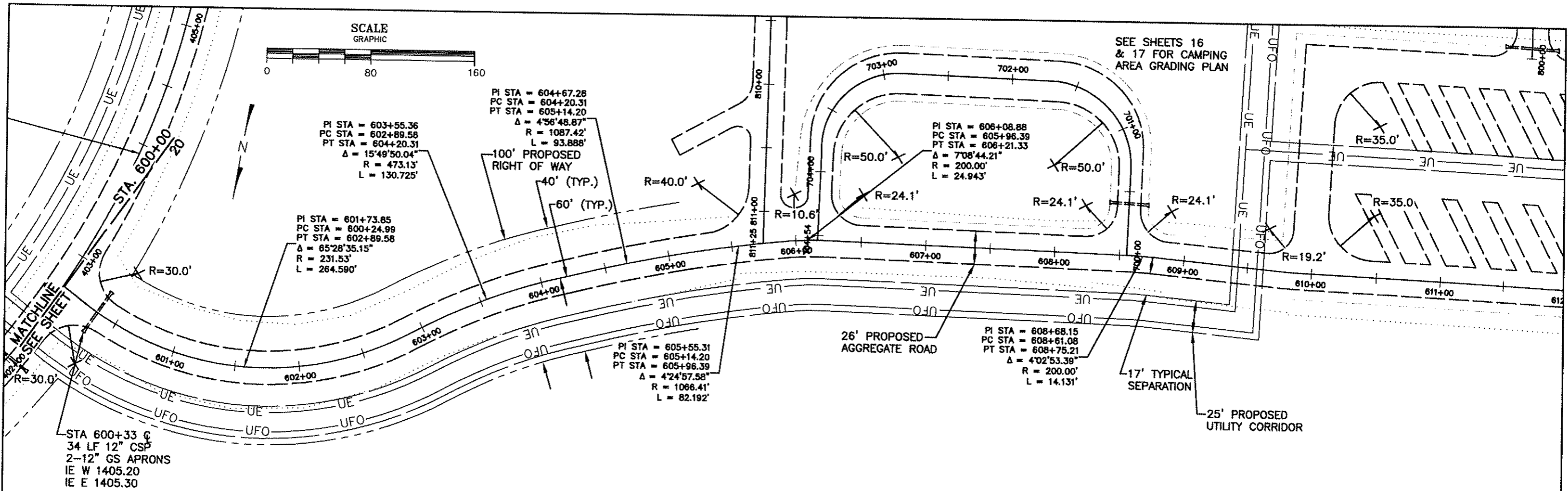
**KARVACKO Engineering**  
 144 PAUL BUNYAN DRIVE NW - P.O. BOX 785 - BEMIDJI MN 56610  
 PHONE: (218) 444-8004 FAX: (218) 444-8562



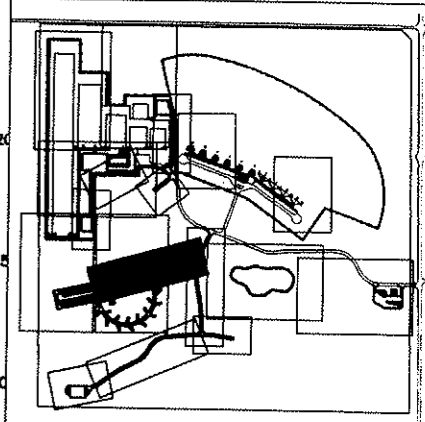
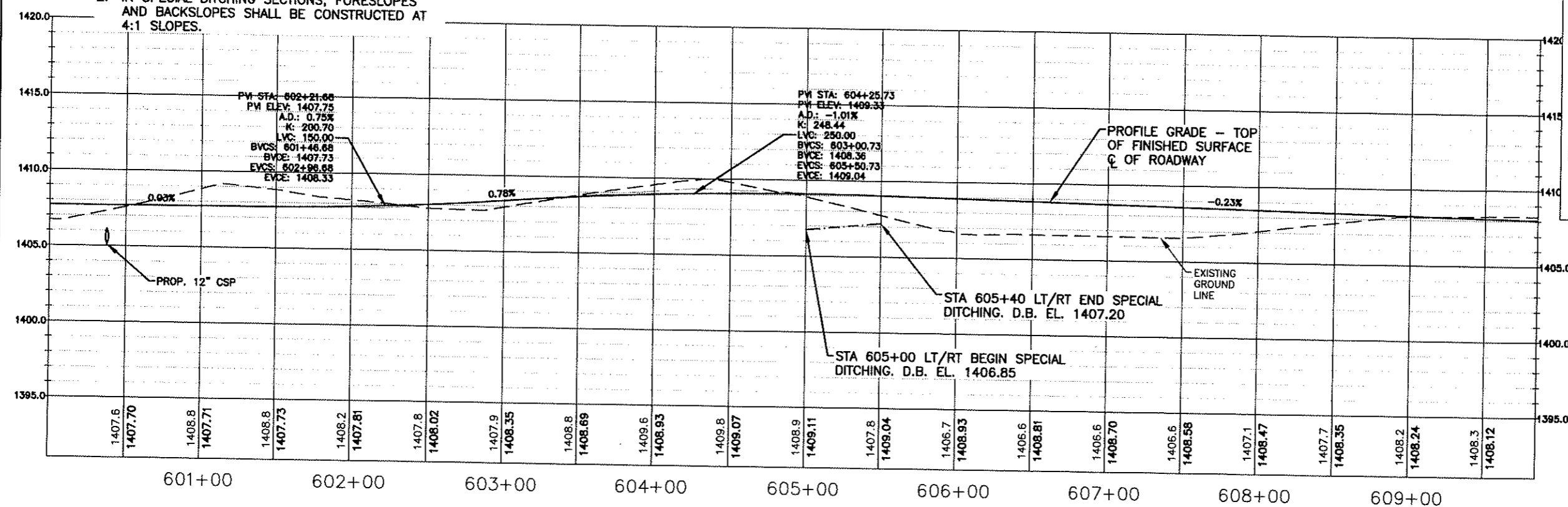
**BELTRAMI COUNTY SHOOTING SPORTS PARK PHASE 2**

PLAN & PROFILE

SHEET 22 OF 33

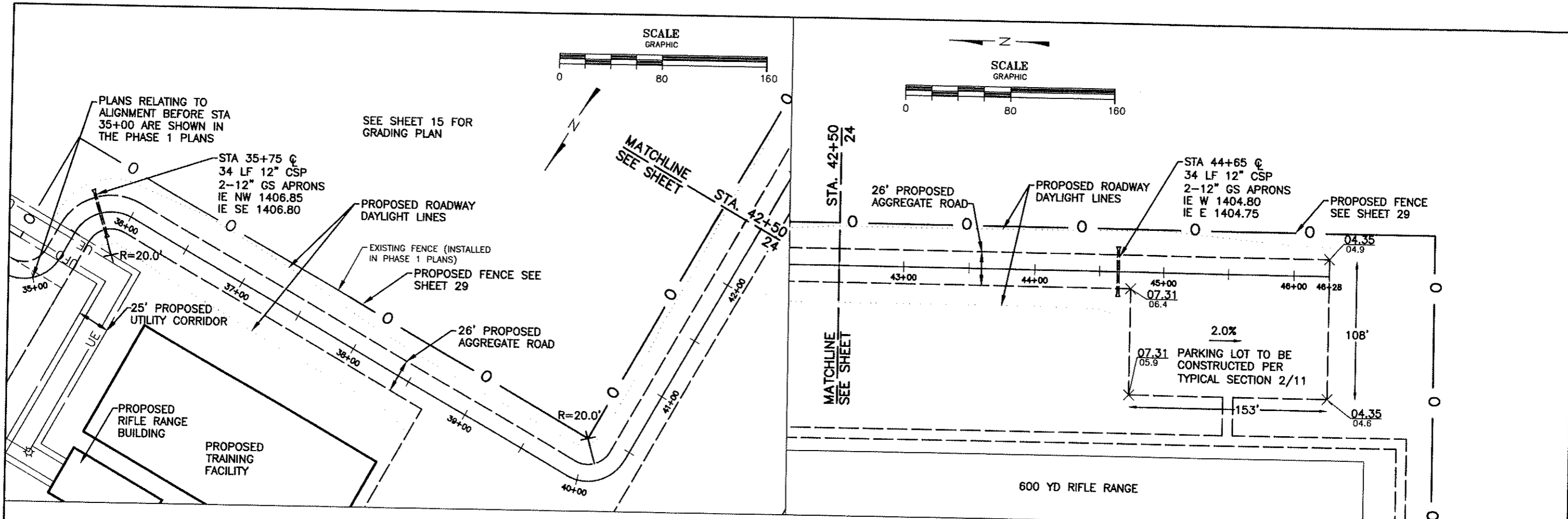


- NOTES:**
1. TYPICAL SECTION 1/11 TO BE FOLLOWED IN ALL AREAS EXCEPT WHERE SPECIAL DITCHING IS SHOWN IN PROFILE VIEW.
  2. IN SPECIAL DITCHING SECTIONS, FORESLOPES AND BACKSLOPES SHALL BE CONSTRUCTED AT 4:1 SLOPES.

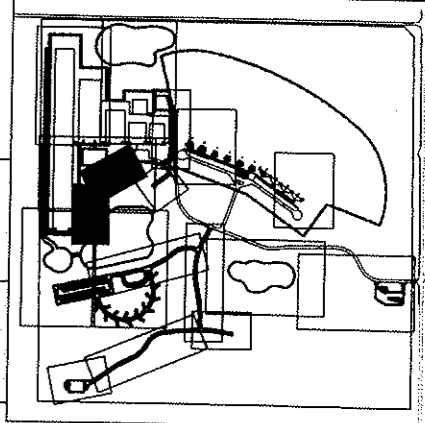
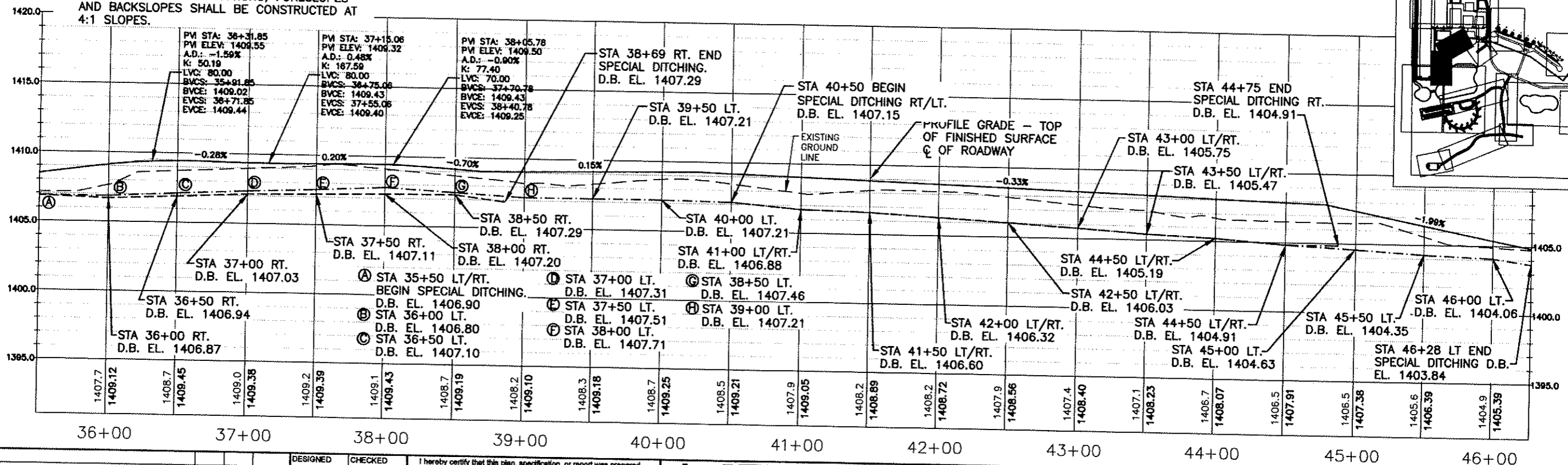


DESIGNED MJK				CHECKED MJK				I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Certified By: <i>[Signature]</i> Lic. No. 44624 Printed Name: Michael J. Karvako Date: 12/14/09												BELTRAMI COUNTY SHOOTING SPORTS PARK PHASE 2				SHEET 23			
DRAWN JMM				APPROVED MJK																144 PAUL BUNYAN DRIVE NW - P.O. BOX 785 - BEMIDJI MN 56619 PHONE: (218) 444-8004 FAX: (218) 444-8562				DEPARTMENT			
DATE 12/14/09				JOB NO. 08-011				NO.				REVISIONS				BY				APR.				DATE			

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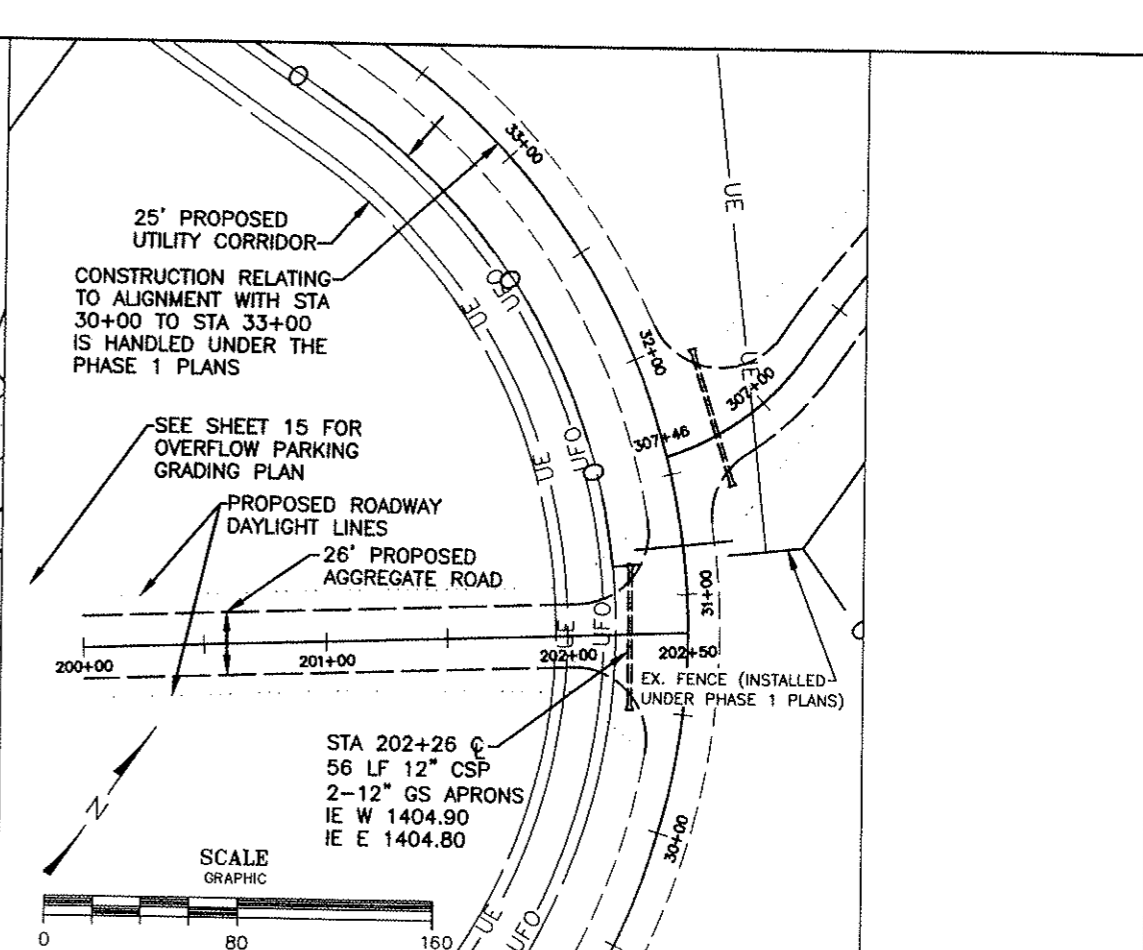
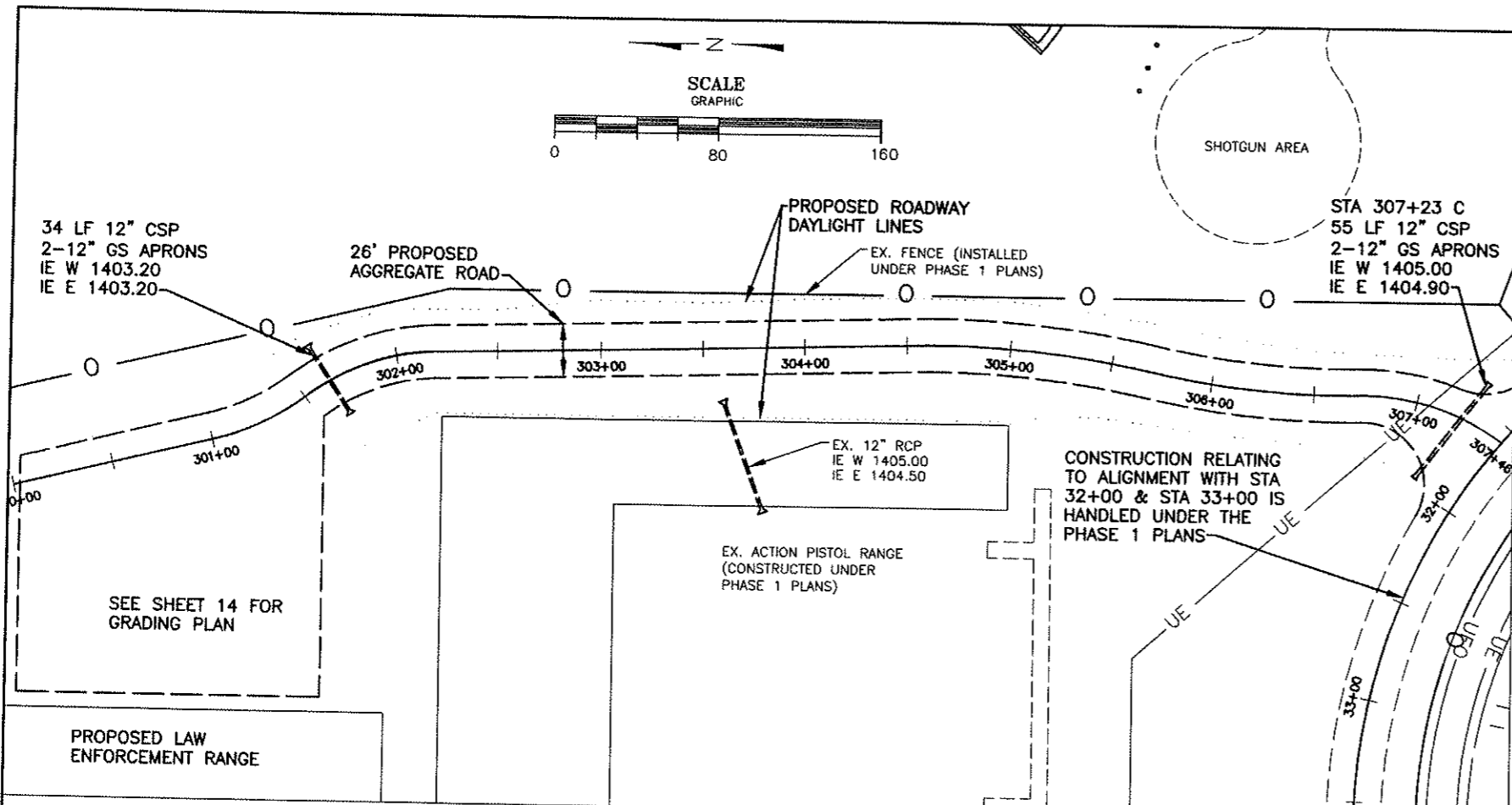


- NOTES:**
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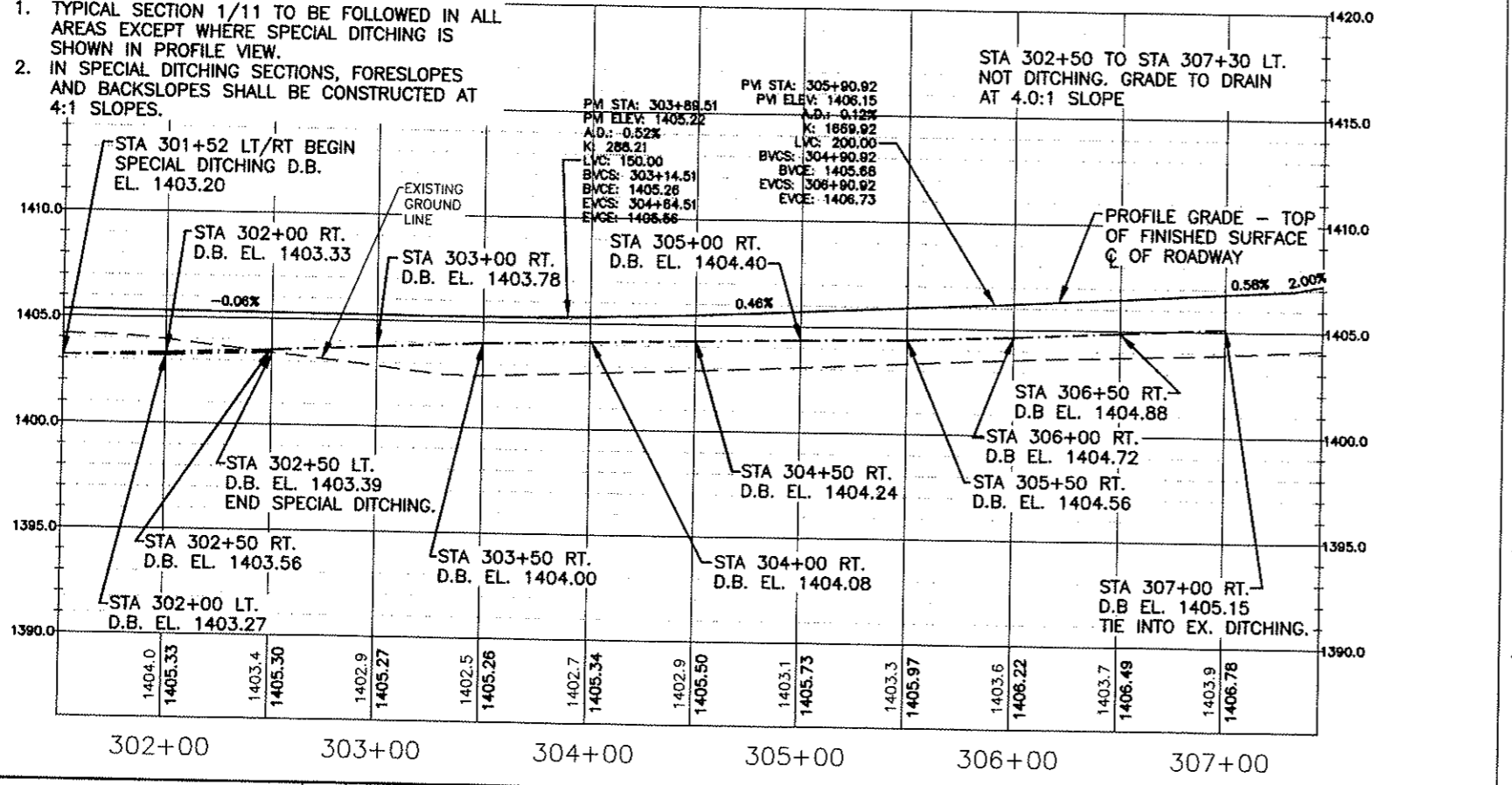
DESIGNED: MJK		CHECKED: MJK		I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Certified By: <i>[Signature]</i> Lic. No. 44824 Printed Name: Michael J. Karvako Date: 12/14/09	<b>KARVAKKO Engineering</b> 144 PAUL BUNYAN DRIVE NW - P.O. BOX 785 - BEMIDJIAN MN 56610 PHONE: (218) 444-8004 FAX: (218) 444-8562	<b>BELTRAMI COUNTY DEPARTMENT</b>	<b>BELTRAMI COUNTY SHOOTING SPORTS PARK PHASE 2</b>		SHEET
DRAWN: JWM		APPROVED: MJK					<b>PLAN &amp; PROFILE</b>		24
NO.	REVISIONS	BY	APR.				DATE		
				12/14/09			33		





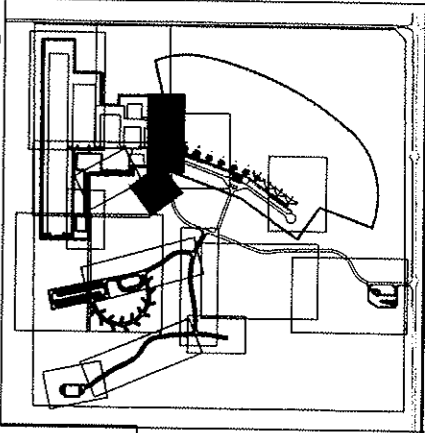
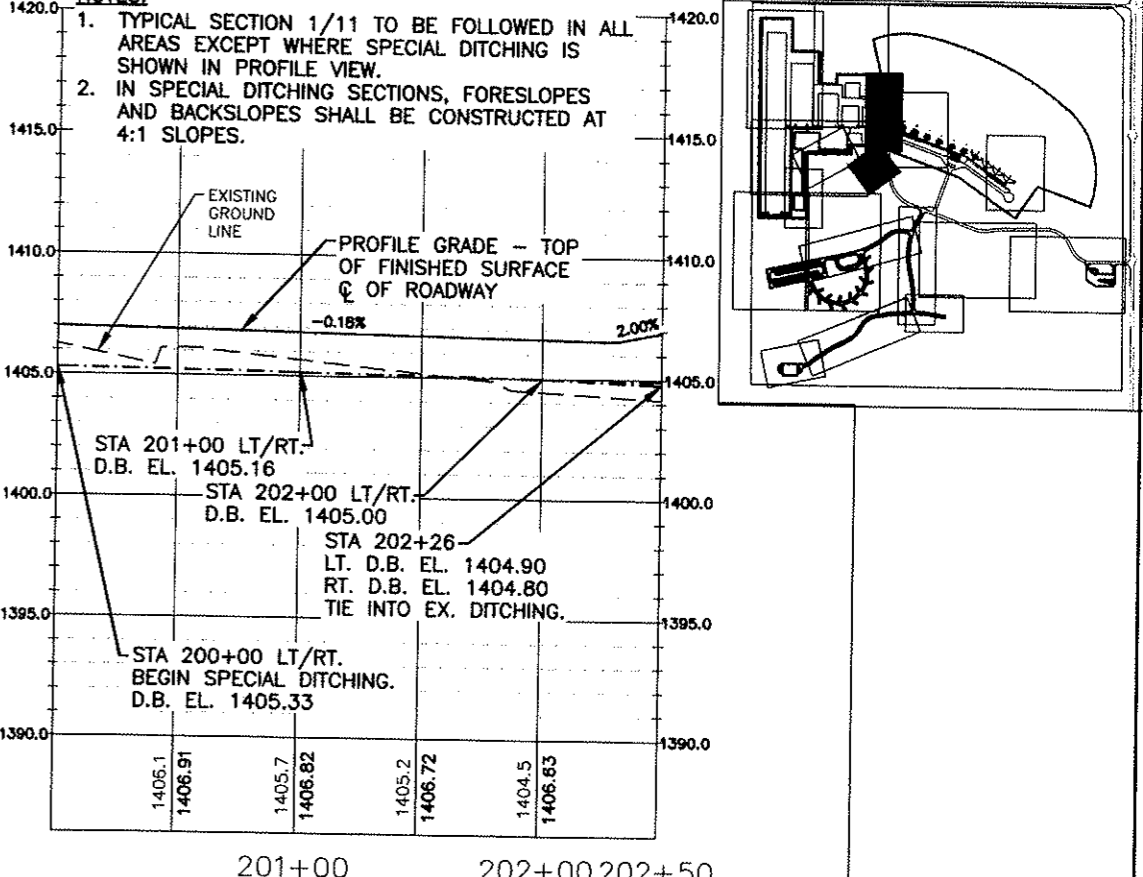
**NOTES:**

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DRAWN JMM	APPROVED MJK
DATE 12/14/09	JOB NO. 08-011

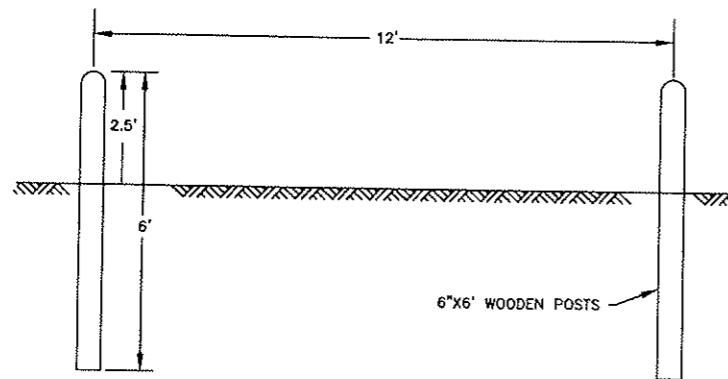
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Certified By: *[Signature]* Lic. No. 44824  
 Printed Name: Michael J. Karvako Date: 12/14/09

**KARVAKKO Engineering**

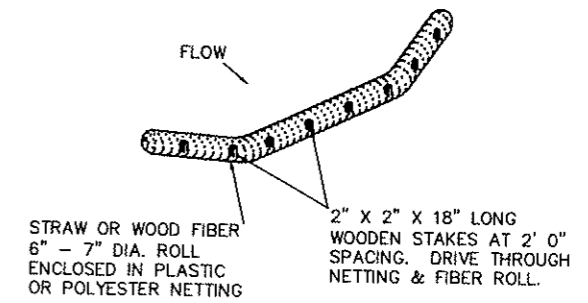
144 PAUL BUNYAN DRIVE NW - P.O. BOX 785 - BEMIDJIE MN 56619  
 PHONE: (218) 444-8004 FAX: (218) 444-8562



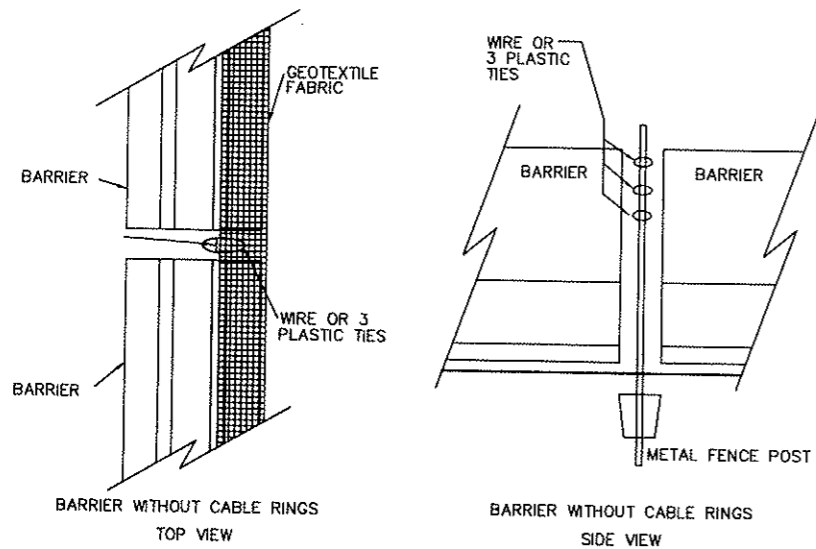


1 BOLLARDS AT SHOTGUN CLUBHOUSE  
26 NO SCALE

EROSION CONTROL



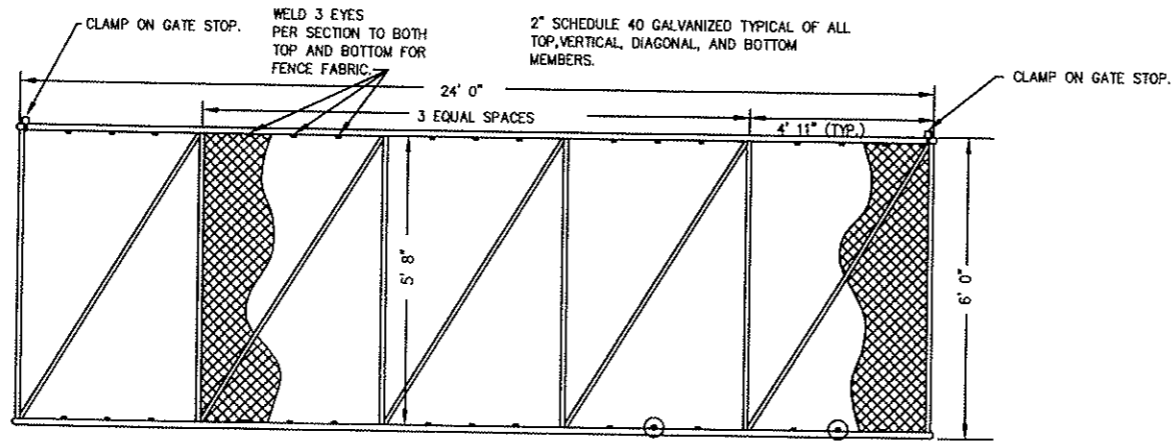
2 FILTER LOG  
26 NO SCALE



3 SILT FENCE  
26 NO SCALE

				DESIGNED MJK	CHECKED MJK	I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Certified By:  Lic. No. 44624 Printed Name: Michael J. Karvako Date 12/14/09	 144 PAUL BUNYAN DRIVE NW - P.O. BOX 785 - BEMIDJI MN 56619 PHONE: (218) 444-8004 FAX: (218) 444-6562		BELTRAMI COUNTY SHOOTING SPORTS PARK PHASE 2	SHEET 26
				DRAWN JMM	APPROVED MJK				CIVIL DETAILS	OF 33
NO.	REVISIONS	BY	APR. DATE	DATE 12/14/09	JOB NO. 08-011					

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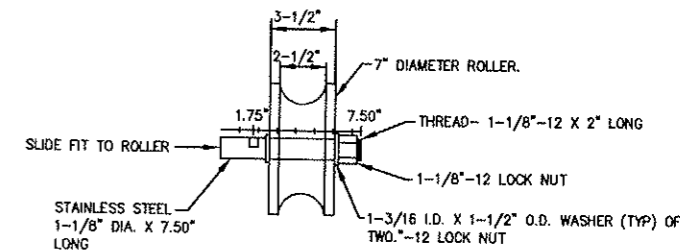


ALL WELDS OF VERTICAL MEMBERS AND DIAGONAL MEMBERS SHALL BE COMPLETE AROUND THE ENTIRE BRACE. BRACE ENDS SHALL NOT BE DEFORMED BY MORE THAN 1/3 THE BRACE DIAMETER. ALL WELDS SHALL BE PAINTED WITH ZINC PAINT.

- NOTES:**
- GATE FRAME SHALL BE (ASTM A1200).
  - TOTAL LENGTH AND THE LENGTHS OF BACK AND FRONT FRAMES MAY VARY WITH OPENING SIZE, SEE MANUFACTURER SPECIFICATION.

1 SINGLE GATE DETAIL  
27

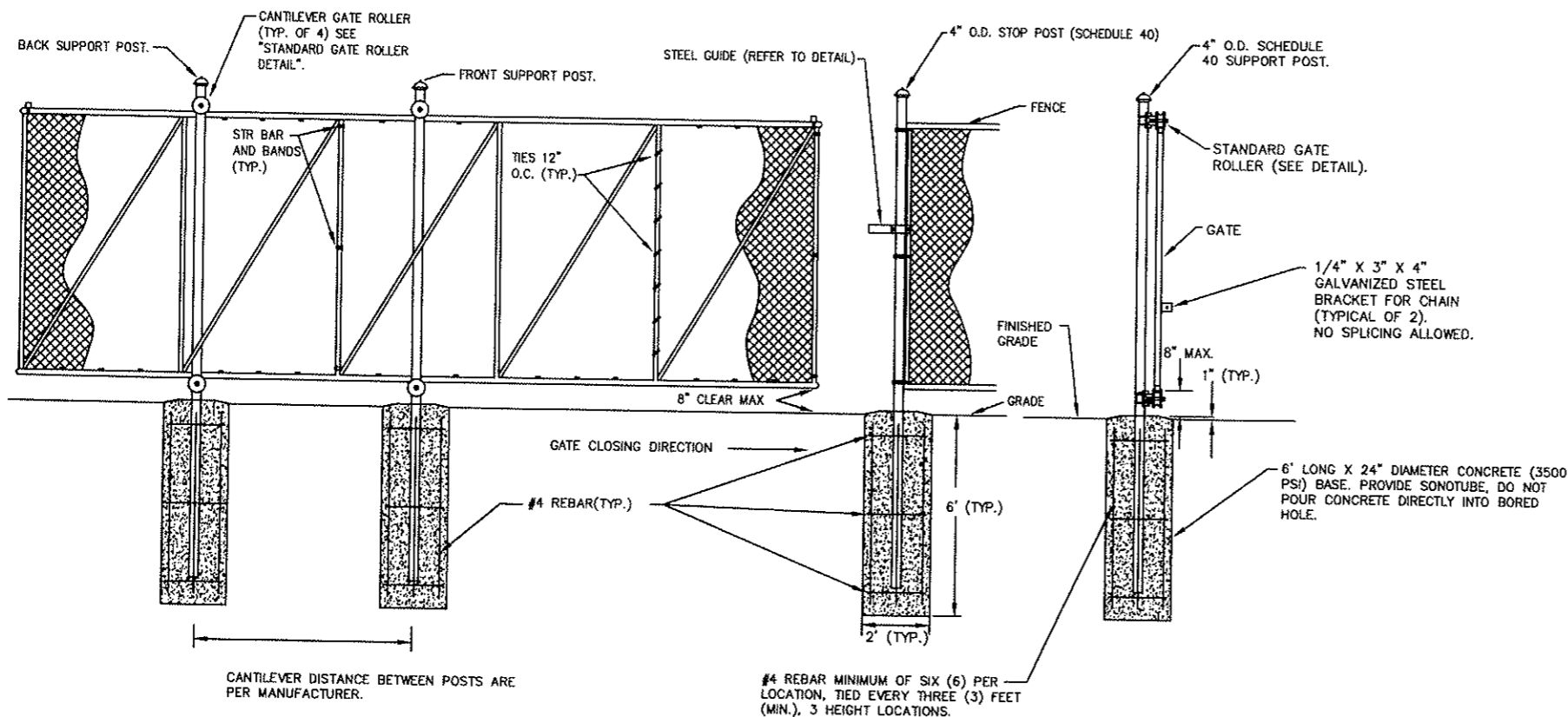
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**NOTE:**  
ROLLERS TO BE MACHINED OF CAST NYLON COMPOSITE AS MANUFACTURED BY LOCAL DECISIONS, INC. OR APPROVED EQUAL

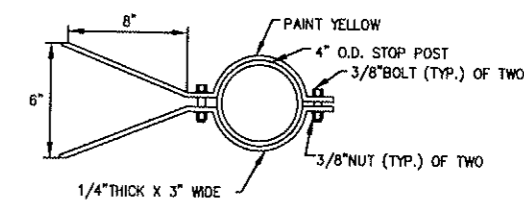
3 STANDARD GATE ROLLER DETAIL  
27

NO SCALE



CANTILEVER DISTANCE BETWEEN POSTS ARE PER MANUFACTURER.

#4 REBAR MINIMUM OF SIX (6) PER LOCATION, TIED EVERY THREE (3) FEET (MIN.), 3 HEIGHT LOCATIONS.



4 STANDARD STEEL GUIDE DETAIL  
27

NO SCALE

2 TYPICAL CANTILEVER GATE SECTION AND SUPPORT POST DETAIL  
27

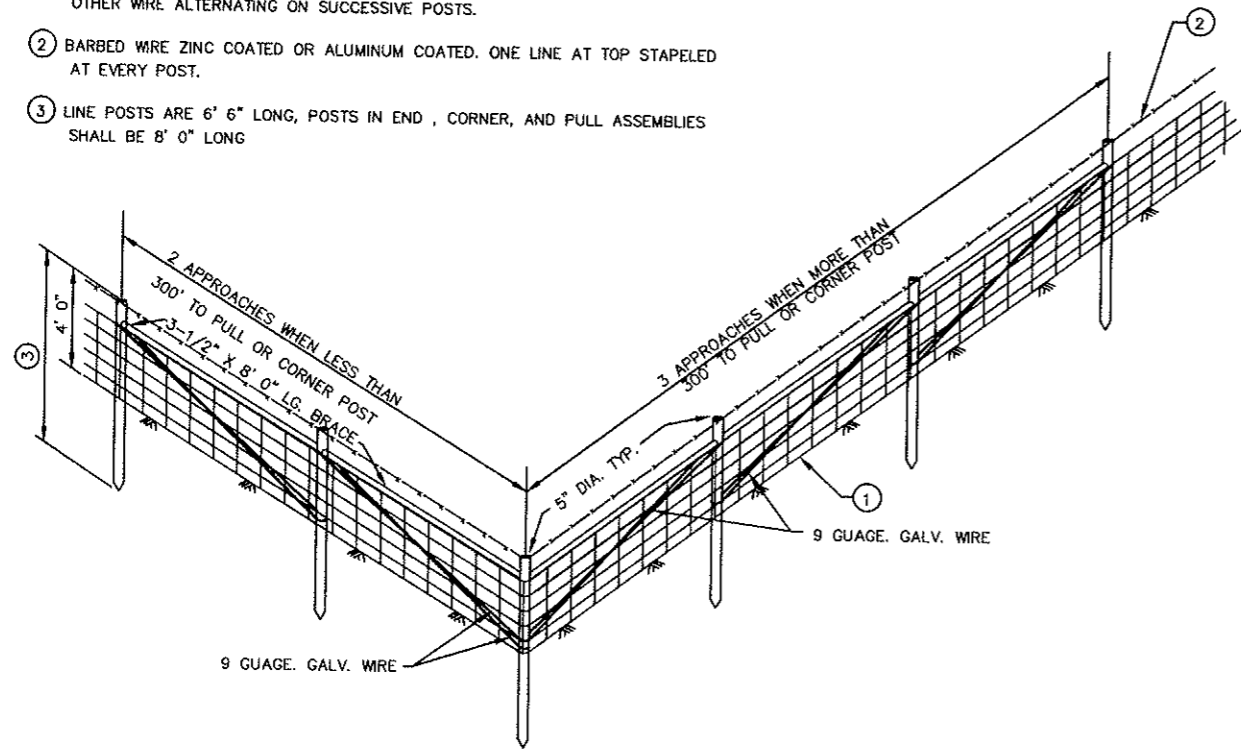
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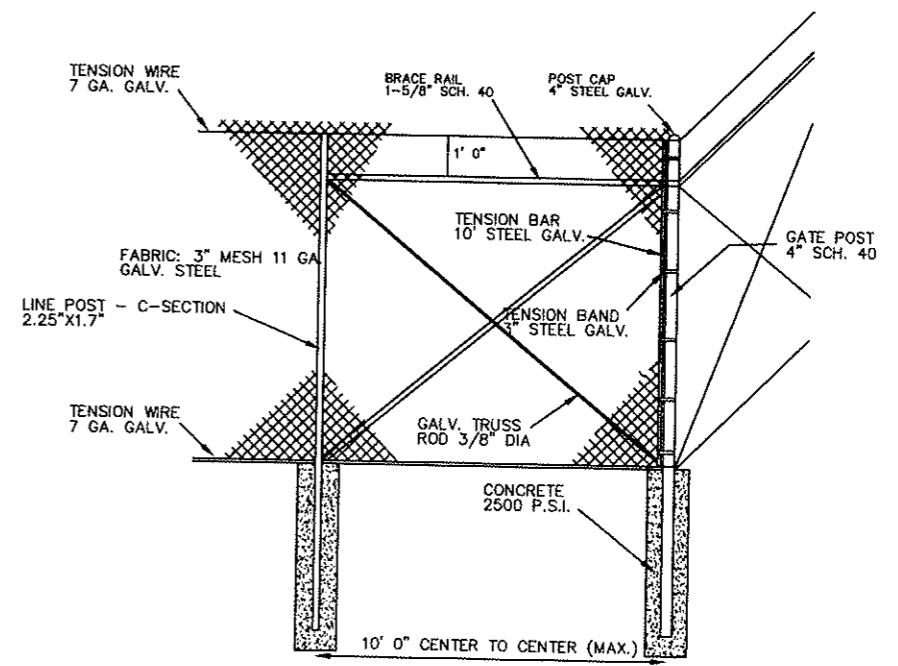
NO.	REVISIONS	BY	APR.	DATE	DESIGNED MJK	CHECKED JM	I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Certified By: <i>[Signature]</i> Lic. No. 44824 Printed Name: Michael J. Karvacko Date 12/14/09			BELTRAMI COUNTY SHOOTING SPORTS PARK PHASE 2	SHEET 27
					12/14/09	08-011				FENCING DETAILS	OF 33

NOTES:

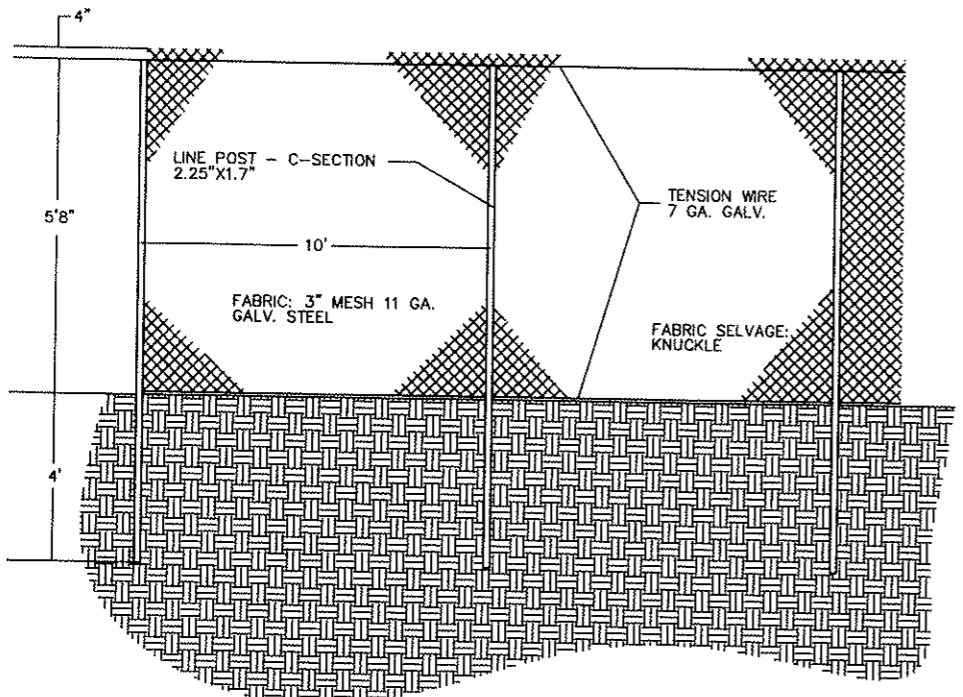
- ① WOVEN WIRE FARM FENCE DESIGN 832-6-11, ZINC COATED (TABLE A1 ASTM A116) OR DESIGN 832-6-11, ALUMINUM COATED TABLE X1 ASTM A584). STAPLE EVERY OTHER WIRE ALTERNATING ON SUCCESSIVE POSTS.
- ② BARBED WIRE ZINC COATED OR ALUMINUM COATED. ONE LINE AT TOP STAPELED AT EVERY POST.
- ③ LINE POSTS ARE 6' 6" LONG, POSTS IN END, CORNER, AND PULL ASSEMBLIES SHALL BE 8' 0" LONG



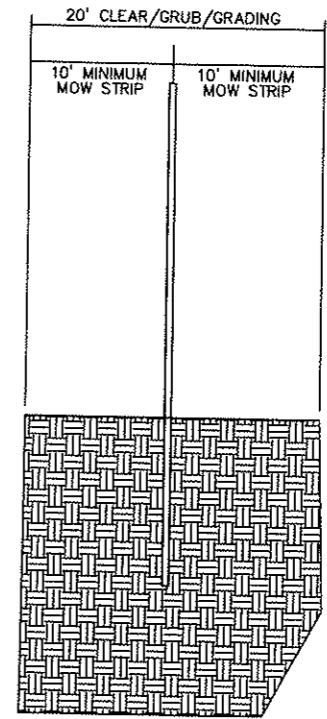
① WOVEN WIRE FENCE  
NO SCALE



③ PULL END OR CORNER POST & ADJACENT LINE POST  
NO SCALE



② LINE SECTION - CHAIN LINK FENCE  
NO SCALE



④ CLEARING/GRUBBING/GRADING  
NO SCALE

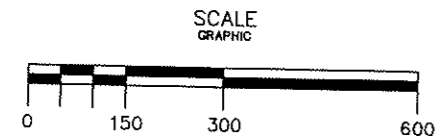
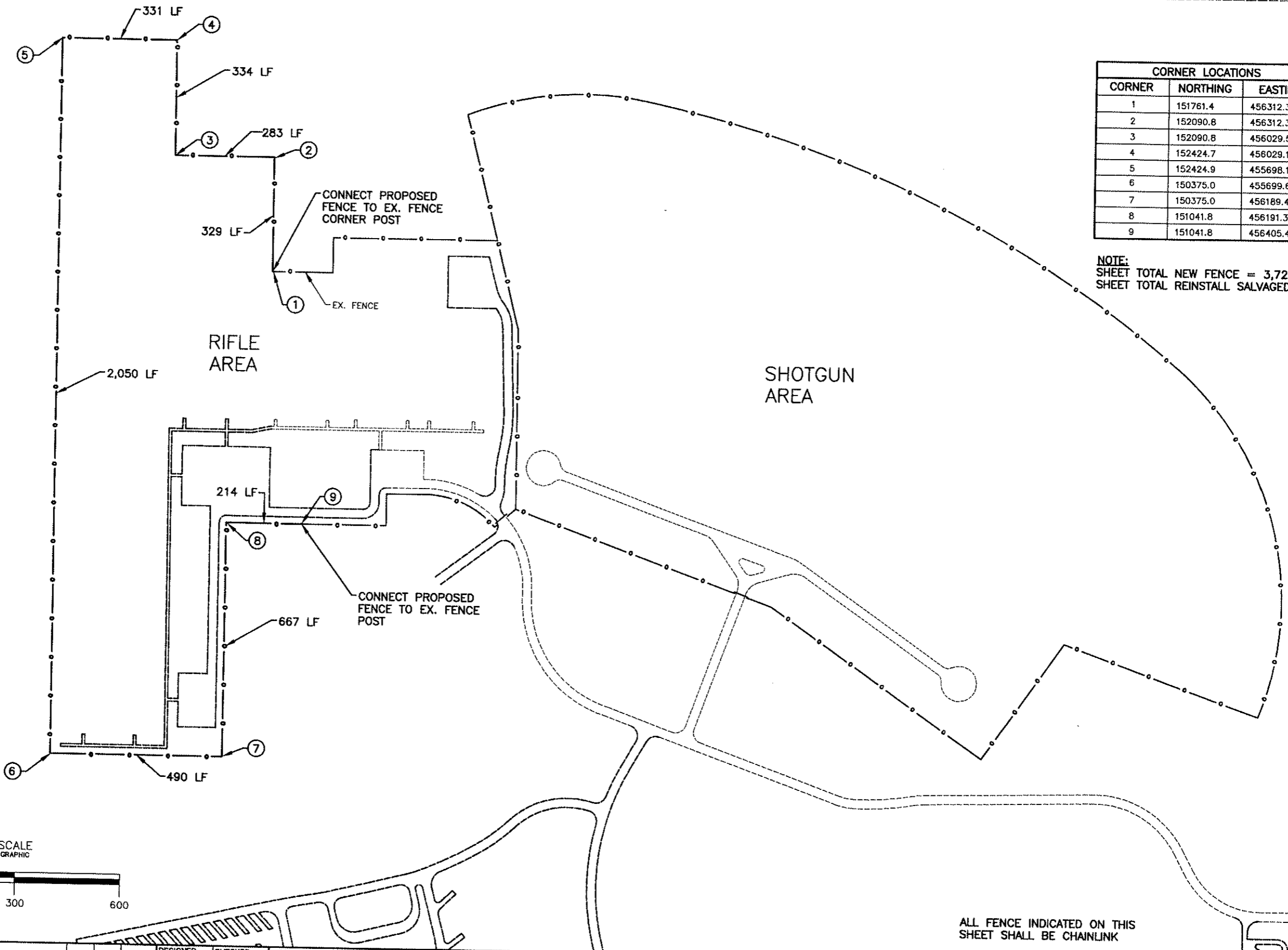
DESIGNED: MJK DRAWN: SWH DATE: 12/14/09				CHECKED: JM APPROVED: MJK JOB NO.: 08-011		I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Certified By: <i>[Signature]</i> Lic. No. 44824 Printed Name: Michael J. Karvacko Date 12/14/09		<b>KARVACKO Engineering</b> 144 PAUL BUNYAN DRIVE NW - P.O. BOX 785 - BEMIDJIE MN 56619 PHONE: (218) 444-8004 FAX: (218) 444-8562		Beltrami County Natural Resources Management DEPARTMENT		BELTRAMI COUNTY SHOOTING SPORTS PARK PHASE 2 FENCING DETAILS		SHEET 28 OF 33	
NO. REVISIONS BY APR. DATE															

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JACK PINE ROAD (AGG.)

CORNER LOCATIONS		
CORNER	NORTHING	EASTING
1	151761.4	456312.3
2	152090.8	456312.3
3	152090.8	456029.5
4	152424.7	456029.1
5	152424.9	455698.1
6	150375.0	455699.6
7	150375.0	456189.4
8	151041.8	456191.3
9	151041.8	456405.4

NOTE:  
SHEET TOTAL NEW FENCE = 3,729 LF  
SHEET TOTAL REINSTALL SALVAGED FENCE = 969 LF



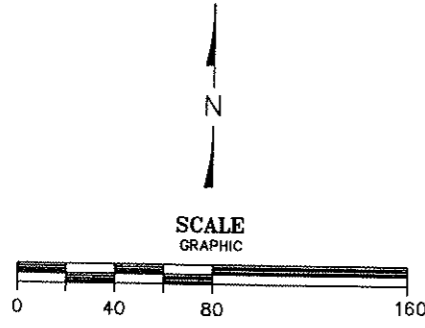
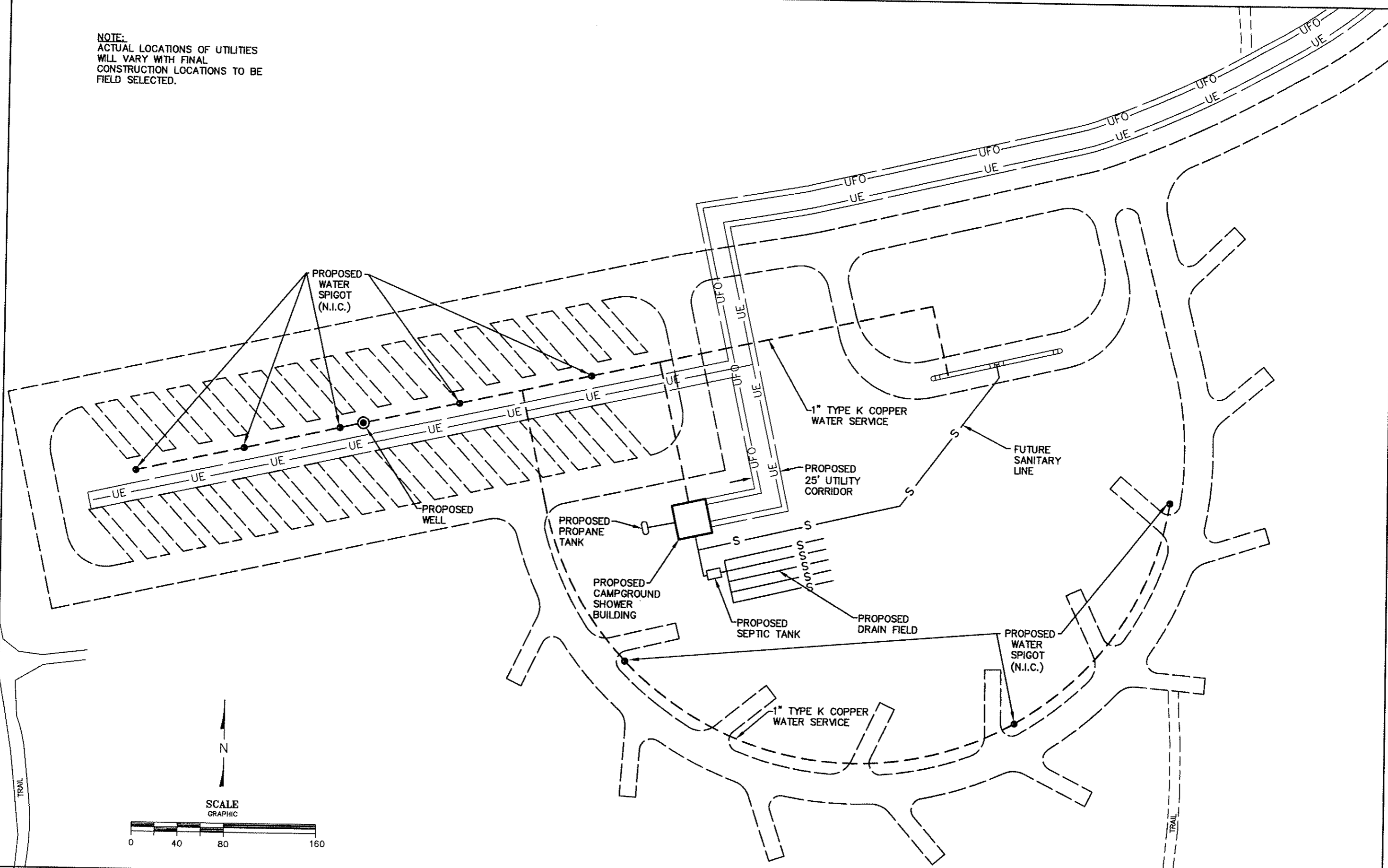
ALL FENCE INDICATED ON THIS SHEET SHALL BE CHAINLINK

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MIN. STATE HIGHWAY 89 (BRT.)

DESIGNED MJK		CHECKED MJK		I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Certified By: <i>[Signature]</i> Lic. No. 44824 Printed Name: Michael J. Karvako Date 12/14/09			BELTRAMI COUNTY SHOOTING SPORTS PARK PHASE 2		SHEET 29
DRAWN JMM		APPROVED MJK					GENERAL AREA FENCING PLAN		OF 33
DATE	JOB NO.	NO.	REVISIONS				BY	APR.	DATE

**NOTE:**  
 ACTUAL LOCATIONS OF UTILITIES  
 WILL VARY WITH FINAL  
 CONSTRUCTION LOCATIONS TO BE  
 FIELD SELECTED.



DESIGNED MJK	CHECKED MJK
DRAWN JMM	APPROVED MJK
DATE 12/14/09	JOB NO. 08-011

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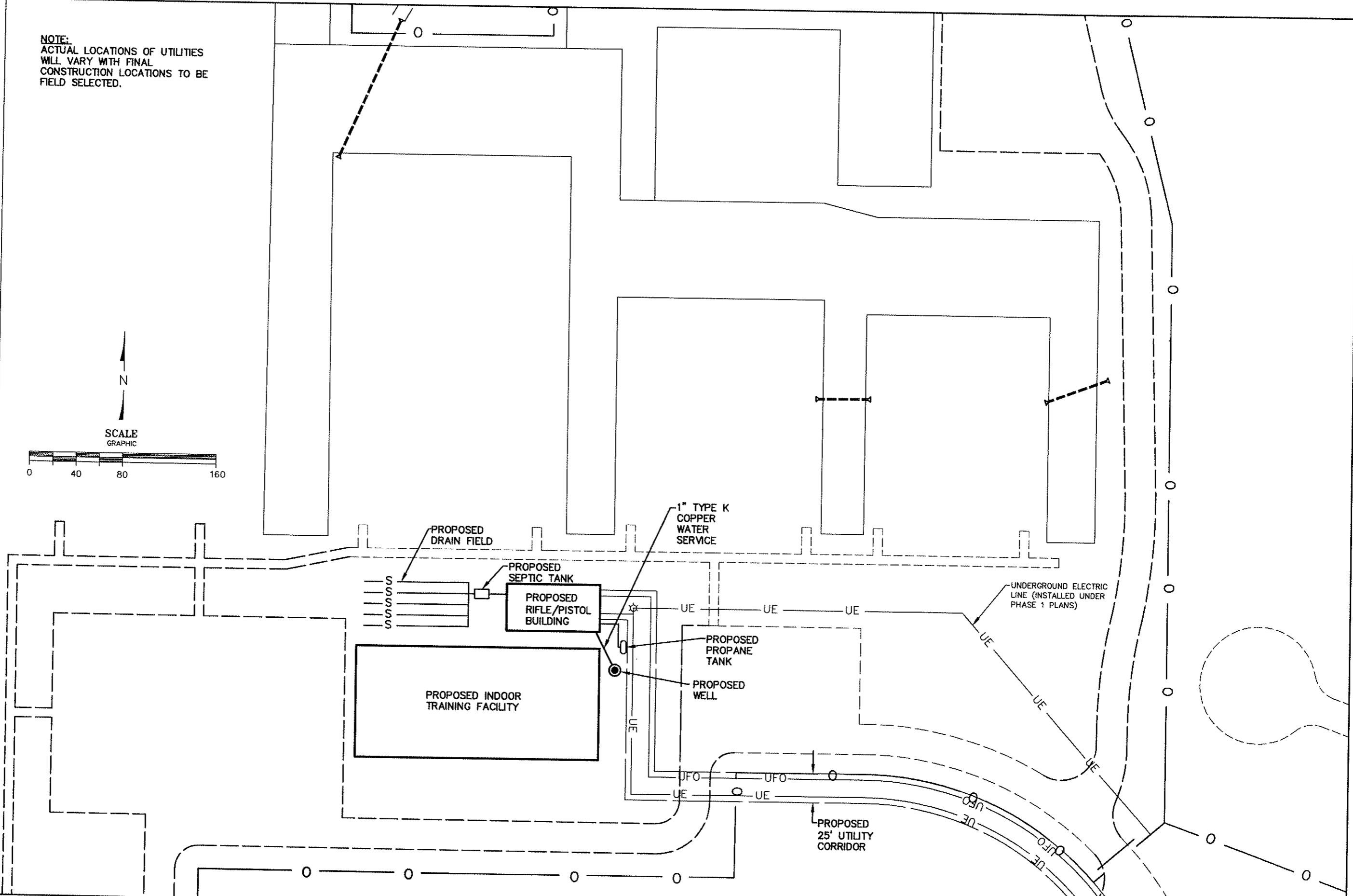
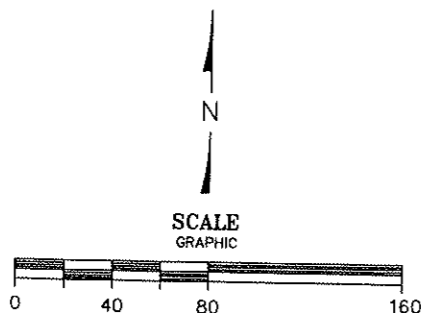
**KARVAKKO Engineering**  
 144 PAUL BUNYAN DRIVE NW - P.O. BOX 785 - BEMIDJI MN 56619  
 PHONE: (218) 444-8004 FAX: (218) 444-8562



**BELTRAMI COUNTY SHOOTING SPORTS PARK PHASE 2**  
**CAMPGROUND AREA UTILITY PLAN**

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NOTE:  
ACTUAL LOCATIONS OF UTILITIES  
WILL VARY WITH FINAL  
CONSTRUCTION LOCATIONS TO BE  
FIELD SELECTED.



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NO.	REVISIONS	BY	APR.	DATE

DESIGNED MJK	CHECKED MJK
DRAWN JMM	APPROVED MJK
DATE 12/11/09	JOB NO. 08-011

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Certified By: *[Signature]* Lic. No. 44824  
Printed Name: Michael J. Karvacko Date 12/14/09

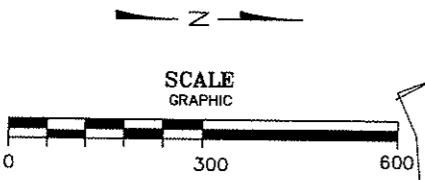
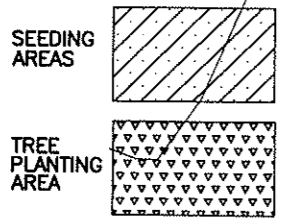
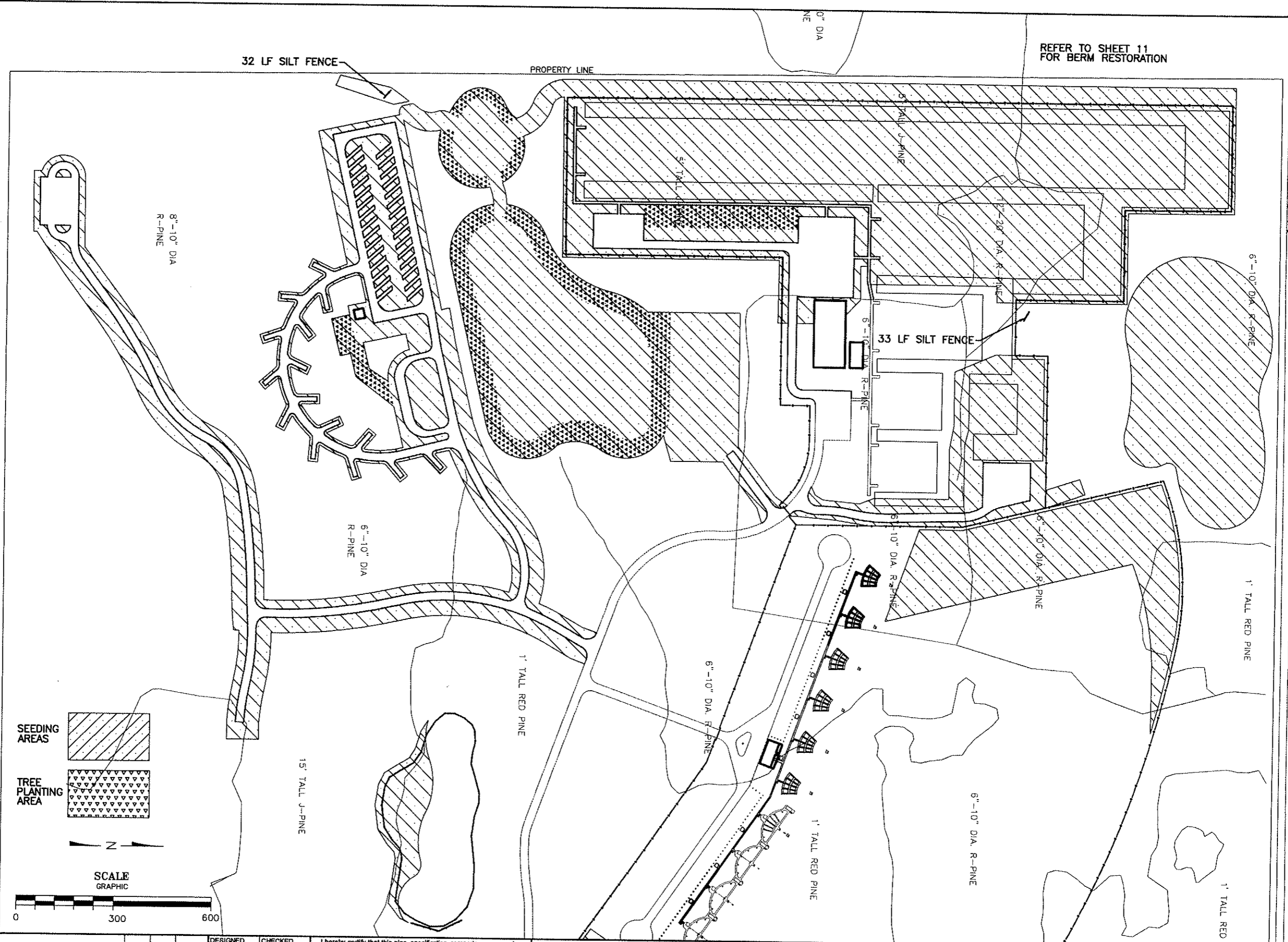
**KARVACKO Engineering**  
144 PAUL BUNYAN DRIVE NW - P.O. BOX 785 - BEMIDJI MN 56619  
PHONE: (218) 444-8004 FAX: (218) 444-8562



BELTRAMI COUNTY SHOOTING SPORTS PARK PHASE 2  
RIFLE/PISTOL AREA UTILITY PLAN

SHEET 31  
OF 33

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NO.	REVISIONS	BY	APR	DATE

DESIGNED MJK	CHECKED MJK
DRAWN JWM	APPROVED MJK
DATE 12/14/09	JOB NO. 08-011

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Certified By: Michael J. Karvako Lic. No. 44824  
 Printed Name: Michael J. Karvako Date 12/14/09

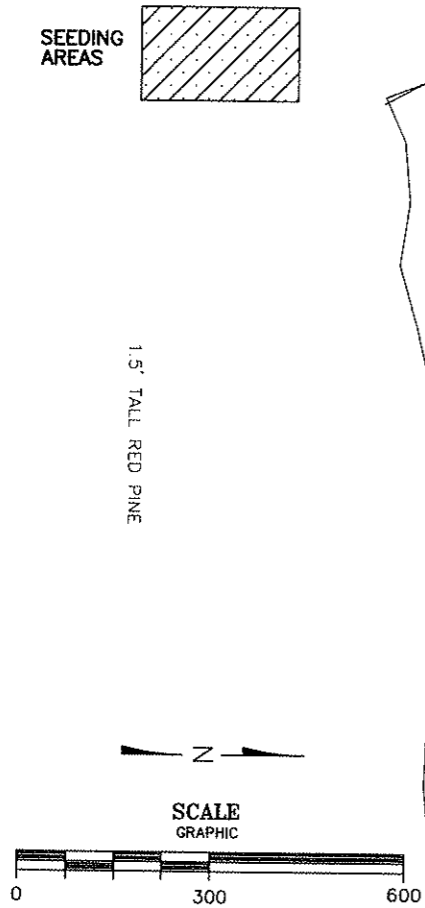
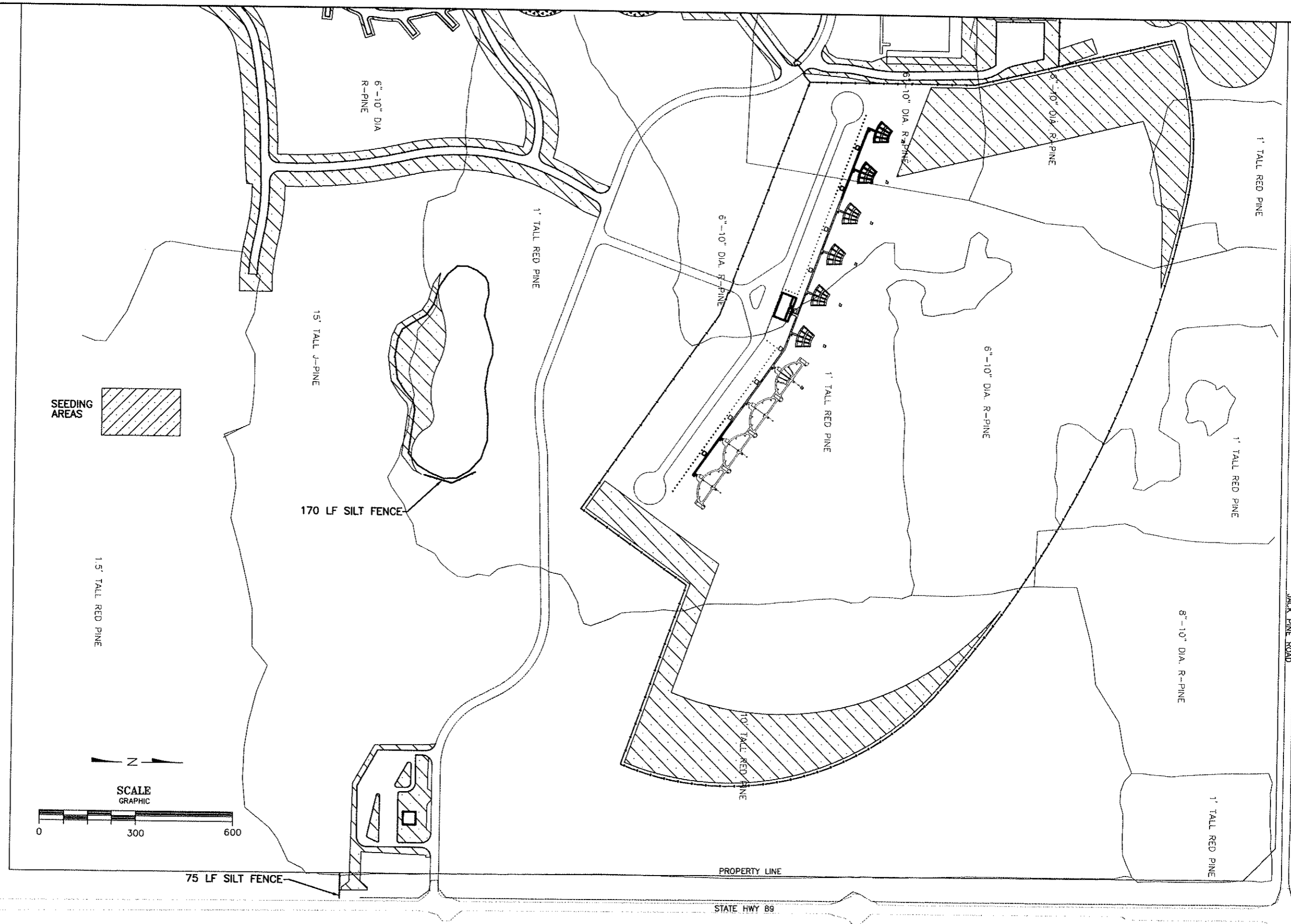
**KARVAKKO Engineering**  
 144 PAUL BUNYAN DRIVE NW - P.O. BOX 785 - BEMIDJI MN 56619  
 PHONE: (218) 444-8004 FAX: (218) 444-8562

**Beltrami County**  
 Natural Resource Management  
 DEPARTMENT

**BELTRAMI COUNTY SHOOTING SPORTS PARK PHASE 2**  
**WEST LANDSCAPE & EROSION CONTROL**



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NO.	REVISIONS	BY	APR.	DATE

DESIGNED MJK	CHECKED MJK
DRAWN JWM	APPROVED MJK
DATE 12/14/09	JOB NO. 08-011

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Certified By: *[Signature]* Lic. No. 44824  
 Printed Name: Michael J. Karvako Date 12/14/09

**KARVAKKO Engineering**  
 144 PAUL BUNYAN DRIVE NW - P.O. BOX 785 - BEMIDJI MN 56619  
 PHONE: (218) 444-8004 FAX: (218) 444-8562



BELTRAMI COUNTY SHOOTING SPORTS PARK PHASE 2  
**EAST LANDSCAPE & EROSION CONTROL**

# BELTRAMI COUNTY SHOOTING SPORTS PARK SHOOTING RANGE PLANS

## GENERAL CONCRETE NOTES:

- ALL WORK SHALL CONFORM TO THE REQTS. OF THE MN. STATE BUILDING CODE, AND THE INCORPORATED 2006 INT'L BUILDING CODE.
  - DESIGN IS IN CONFORMANCE WITH ACI 318-02
  - GEN. CONSTRUCTION SHALL BE IN CONFORMANCE WITH ACI 301-99
  - SLAB CONSTRUCTION SHALL BE IN CONFORMANCE WITH ACI 302-99
- CONCRETE MINIMUM 28 DAY COMPRESSIVE STRENGTH SHALL BE: SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE ON THE DRAWINGS.
 

FOOTINGS	3500 PSI
WALLS AND SLABS AND PIERS	3500 PSI
- CONCRETE EXPOSED TO WEATHER SHALL BE AIR ENTRAINED.
- REINFORCING:
  - REINFORCING STEEL-DEFORMED BARS CONFORMING TO ASTM A 615 GR.60
  - WELDED WIRE FABRIC REINFORCING SHALL CONFORM TO ASTM A 185.
  - MINIMUM CONCRETE COVER OVER REINFORCING BARS SHALL BE:
    - CONCRETE DEPOSITED AGAINST SOIL 3 IN.
    - CONCRETE IN CONTACT WITH SOIL OR WEATHER 2 IN.
    - BEAMS & COLUMNS (STIRRUPS, TIES) 1 1/2"
    - SLABS 1 IN.
  - ALL FOOTING, WALL, SLAB & BOND BM. LONGITUDINAL REINFORCING SHALL BE CONTINUOUS UNLESS NOTED OTHERWISE. CARRY CONTINUITY OF LONGITUDINAL BARS AROUND CORNERS. MINIMUM LAP SPLICES SHALL BE: IN ACCORD WITH CURRENT ACI CRITERIA AND MINIMUMS OF:
 

FTGS. & BOND BMS,	#4 - 18", #5 - 20", #6 - 23"
DOW. & VERT. WALL STL.	#4 - 20", #5 - 26", #6 - 31"
  - REINFORCING BARS, CHAIRS, SPACERS BARS AND OTHER ACCESSORIES SHALL BE DETAILED, FABRICATED AND PLACED IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE (CURRENT EDITION).
  - TAG ALL REINFORCING BUNDLES, ANCHOR BOLTS ETC. WITH WATER-PROOF MARKINGS ON DURABLE TAG MATERIAL.
- METAL FORM DECK (NOT APPLICABLE)
- DOWELS (NOT APPLICABLE)
- ALL EMBEDDED PLATES, BARS AND STEEL SHAPES SHALL BE ASTM A36 AND SHOP PRIMED WITH ONE COAT OF ALKYD RUST-INHIBITIVE PRIMER, TMEC 10-99 OR APPROVED EQUAL EXCEPT FOR SURFACES IN CONTACT WITH CONCRETE OR WITH-IN 2 INCHES OF FIELD WELDS. SURFACE PREPARATION SHALL BE IN ACCORD. WITH SSPC-SP2 AND SP3. MINIMUM DRY FILM THICKNESS SHALL BE 1.5 MILS.
- CONTRACTION OR CONTROL JOINTS (NOTED AS "C. JT.") SHALL BE SPACED AS NOTED OR A MAX. OF 24 FT. O.C. AND A PLANE OF WEAKNESS CREATED BY FORMING, INSERTS OR SAW CUT AND EVERY OTHER REINFORCING BAR OR WIRE SHALL BE CUT OR BE DISCONTINUOUS AT JT.
- CONSTRUCTION JOINTS MAY BE USED IN LIEU OF CONTRACTION JOINTS AND SHALL BE KEYED FOR GRADE SLABS & WALLS TO INSURE SHEAR TRANSFER. (NO KEYS IN HORIZONTAL WALL TO FOOTING JOINTS ALLOWED)
- EXPANSION JOINTS (NOTED AS "EXP. JT.") SHALL BE INSTALLED WHERE NOTED ON THE DRAWINGS IN CONFORMANCE WITH ACI 301-99 6.2.
- CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EMBEDDED PLATES, SLEEVES, FLOOR DRAINS, CONDUITS, BLOCK OUTS, ETC. BEFORE CONCRETE IS PLACED
- DESIGN LIVE LOADS:
 

DESIGN ALLOWABLE SOIL BEARING PRESSURE	= 3000 PSF.
(SEE BRAUN INTERTEC PROJECT SOIL REPORT DATED 4/1/09)	
BUILDING ROOF SNOW LOAD	= 42 PSF.
DESIGN WIND LOAD VELOCITY	= 90 MPH
BLDG. FLOOR LOADS:	
STORAGE: TARGETS, CLAY PIGEONS ETC.	= 175 PSF.
OCCUPANTS: PUBLIC GATHERINGS	= 100 PSF.
OCCUPANTS: OFFICE & OTHER	= 50 PSF.

## GENERAL STEEL NOTES:

- MATERIALS, FABRICATIONS, CONSTRUCTION AND WORKMANSHIP FOR ALL STRUCTURAL STEEL FRAMING, JOISTS, AND RELATED STEEL WORK SHALL BE IN ACCORDANCE WITH THE FOLLOWING:
- DESIGN FABRICATION AND ERECTION SHALL BE IN CONFORMANCE WITH THE 2006 INTERNATIONAL BUILDING CODE CHAPTER 22 AND THE FOLLOWING:
- THE "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS" OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), 9TH EDITION, MANUAL OF STEEL CONSTRUCTION (ALLOWABLE STRESS DESIGN).
- GENERAL:
    - ALL STRUCTURAL STEEL PLATES AND SHAPES SHALL CONFORM TO ASTM A 992 - 50, UNLESS SPECIFIED OTHERWISE ON THE DRAWINGS.
  - CONNECTIONS:
    - ALL SHOP CONNECTIONS MAY BE BOLTED OR WELDED
    - ALL FIELD CONNECTIONS SHALL BE BOLTED UNLESS DETAILED OTHERWISE ON THE DWGS.
    - WHERE REACTIONS ARE NOT INDICATED ON DRAWINGS, SHOP AND FIELD BEAM CONNECTIONS SHALL BE DETAILED FOR HALF THE TOTAL ALLOWABLE UNIFORM LOAD CAPACITY OF THE BEAM AS TABULATED ON PAGE 2 37 THROUGH 2- 140 OF THE A.I.S.C. "MANUAL OF STEEL CONSTRUCTION", 9TH EDITION.
    - MEMBER CONNECTIONS SHALL BE DESIGNED FOR A MINIMUM FORCE OF NO LESS THAN 6 KIPS AS PER A.I. S.C SPEC. SECT. J1.6
    - GUSSET PLATES SHALL BE A MINIMUM THICKNESS OF 3/8".
    - BOLTED CONNECTIONS:
      - ALL BOLTED CONNECTIONS, SHOP AND FIELD, SHALL CONFORM TO "SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM BOLTS WITH 3/4" DIAMETER ASTM A - 325 HEAVY HEX HEAD, HIGH STRENGTH BOLTS UNLESS NOTED OTHERWISE. SECONDARY MEMBERS, INCLUDING MISCELLANEOUS METAL, STAIR TREADS, HANDRAIL POSTS ETC. MAY BE CONNECTED WITH ASTM A 307, STD. MACHINE BOLTS.
      - HIGH STRENGTH BOLTED CONNECTIONS SHALL BE BEARING TYPE WITH THREADS ALLOWED IN THE SHEAR PLANE UNLESS NOTED OTHERWISE ON THE DRAWINGS, WITH A MINIMUM OF TWO PER CONNECTION.
      - HIGH STRENGTH BOLTS (ASTM A-325) SHALL BE TIGHTENED TO THE REQUIRED LOAD EITHER WITH A CALIBRATED TORQUE WRENCH OR BY THE "TURN OF THE NUT" METHOD.
      - SLOTTED HOLE DIMENSION CALLS INDICATED ARE OUTSIDE TO OUTSIDE OF SLOTS UNLESS DETAILED OTHERWISE.
    - WELDED CONNECTIONS:
      - WELDED CONNECTIONS SHALL BE WITH ELECTRIC ARC E70XX ELECTRODES IN ACCORDANCE WITH LATEST AMERICAN WELDING SOCIETY (AWS) SPECIFICATIONS.
      - MINIMUM SIZE OF WELD SHALL BE 3/16" UNLESS NOTED OTHERWISE AND A MINIMUM CONNECTION CAPACITY SHALL BE 6000 LBS
      - SURFACES TO BE FIELD WELDED SHALL BE CLEAN AND FREE OF PAINT, DIRT, GREASE OF OTHER FOREIGN MATERIAL.
  - CONSTRUCTION PROCEDURES:
 

TEMPORARY BRACING AND GUYING SHALL BE FURNISHED BY THE CONTRACTOR TO INSURE STABILITY OF FRAMES, TRUSSES, ROOF ASSEMBLY AND COLUMN BRACING PRIOR TO THE STABILIZING OF THE STRUCTURAL UNIT BY THE COMPLETION OF THE BRACING INSTALLATIONS AND FLOOR, ROOF AND WALL DIAPHRAGMS. SUCH TEMPORARY BRACING SHALL BE ADEQUATE TO RESIST NORMAL WIND LOADS AT EXTERIOR UNITS FOR WINDS UP TO 60 MPH.

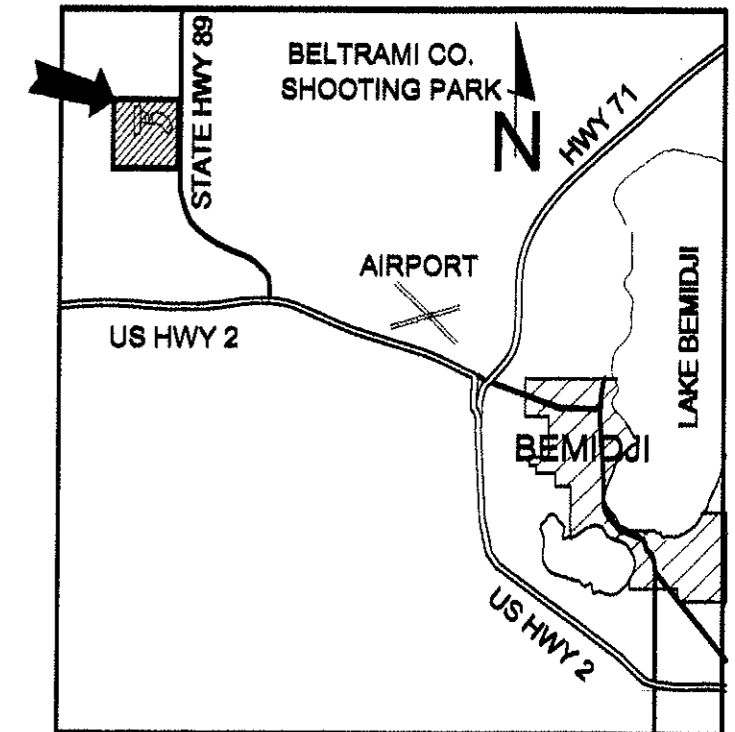
    - METAL ROOF DECK:
 

METAL ROOF DECK SHALL BE 24 GAGE FLEXRIB ROOF PANELS AS MANF. BY FLEXOSPAN CORP. OF SANDY LAKE, PA., OR APPROVED EQUAL. FINISH SHALL BE FLEXOSPAN'S FLEXSHIELD OR EQUAL IN NO.240 GREEN.
    - METAL SIDING: SKEET HOUSE FASCIA TRIM, SAME AS ROOF PANELS.
  - FINISH:
    - PRIMER: ALL STRUCTURAL AND MISCELLANEOUS METAL SHALL BE SHOP PAINTED WITH ONE COAT OF RUSTOLEUM NO. 675 QUICK DRY RED PRIMER AS MANUFACTURED BY THE RUSTOLEUM CORPORATION OF EVANSTON IL. OR AN APPROVED EQUAL. A DRY FILM THICKNESS OF ONE MIL MINIMUM TO TWO MILS IS REQUIRED.
    - FINISH COAT: ALL STRUCTURAL AND MISCELLANEOUS METAL SHALL BE FINISH COAT PAINTED WITH TWO COATS OF RUSTOLEUM "NEW COLOR HORIZONS" SEMI GLOSS FINISHES IN # 762 BROWN COLOR, AS MANUFACTURED BY THE RUSTOLEUM CORPORATION.

## FOUNDATIONS & EARTHWORK:

- ALL EARTHWORK AND FOUNDATION WORK SHALL BE IN CONFORMANCE WITH THE PROJECT SPECIFICATIONS, THEIR INCORPORATED MN DOT STANDARDS AND THE REQUIREMENTS OF THE MN STATE BLDG. CODE AND ITS INCORPORATED INTERNATIONAL BUILDING CODE, CHAP. 18, AND THE FOLLOWING:
  - EARTHWORK BERMS MAY BE OF IMPORTED BORROW OR SITE RANDOM EXCAVATION MATERIAL, AND SHALL BE COMPACTED IN PLACE TO A MINIMUM OF 95% STANDARD PROCTOR DENSITY. (ASTM 998). FIRING LINE BERMS WITH ENCLOSURE STRUCTURES AND FOUNDATION SLABS SHALL BE COMPACTED TO 98% OF STANDARD PROCTOR FOR THEIR TOP TWO FEET.
  - ALL BERMS SHALL BE PLACED TO A MINIMUM SLOPE OF 1.75 HORIZONTAL TO 1.0 VERTICAL. ALL SLOPES SHALL BE SEEDED WITH APPROPRIATE GRASSES TO PREVENT FUTURE EROSION
  - ALL IMPACT BACKSTOP BERMS BEHIND RESPECTIVE TARGET LINES SHALL CONTAIN NO ROCKS OR STONES OVER 3/4" IN SIZE IN THE IMPACT AREAS FOR A DEPTH OF TWO FEET TO PREVENT RICOCHETS.
  - ALL ROADWAYS, PARKING AREAS, SHOOTING RANGE AREAS THAT ARE EXCAVATED OR ALTERED SHALL HAVE THEIR FINAL GRADES ADJUSTED TO INSURE PROPER DRAINAGE AND TO PREVENT PONDING (SEE SEPARATE CIVIL SITE DWGS).
  - EXISTING CONTOURS & GRADES ARE SET FROM THE PRELIMINARY PROJECT SITE TOPO SURVEY. DUE TO MINOR SHIFTING OF THE LAYOUT PLANS AS THE PROJECT DEVELOPED, THE FINAL GRADES DEFINED MAY VARY SLIGHTLY FROM THEIR RELATIONSHIP TO THE EXISTING CONTOUR GRADES NOW SHOWN.
 

ADJUST FINAL SET GRADE CONTROL FOR THE TRAP & SKEET HOUSES & SHOOTING STATIONS TO FIT THE ACTUAL SITE CONDITIONS. HOWEVER, FOR ANY GRADE ADJUSTMENTS, INSURE THERE IS GOOD DRAINAGE.
  - A PROJECT GEOTECHNICAL EVALUATION REPORT COVERING THE PROJECT SITE WAS PREPARED BY BRAUN INTERTEC CORP. AND IS INCLUDED IN THE PROJECT SPECIFICATIONS.

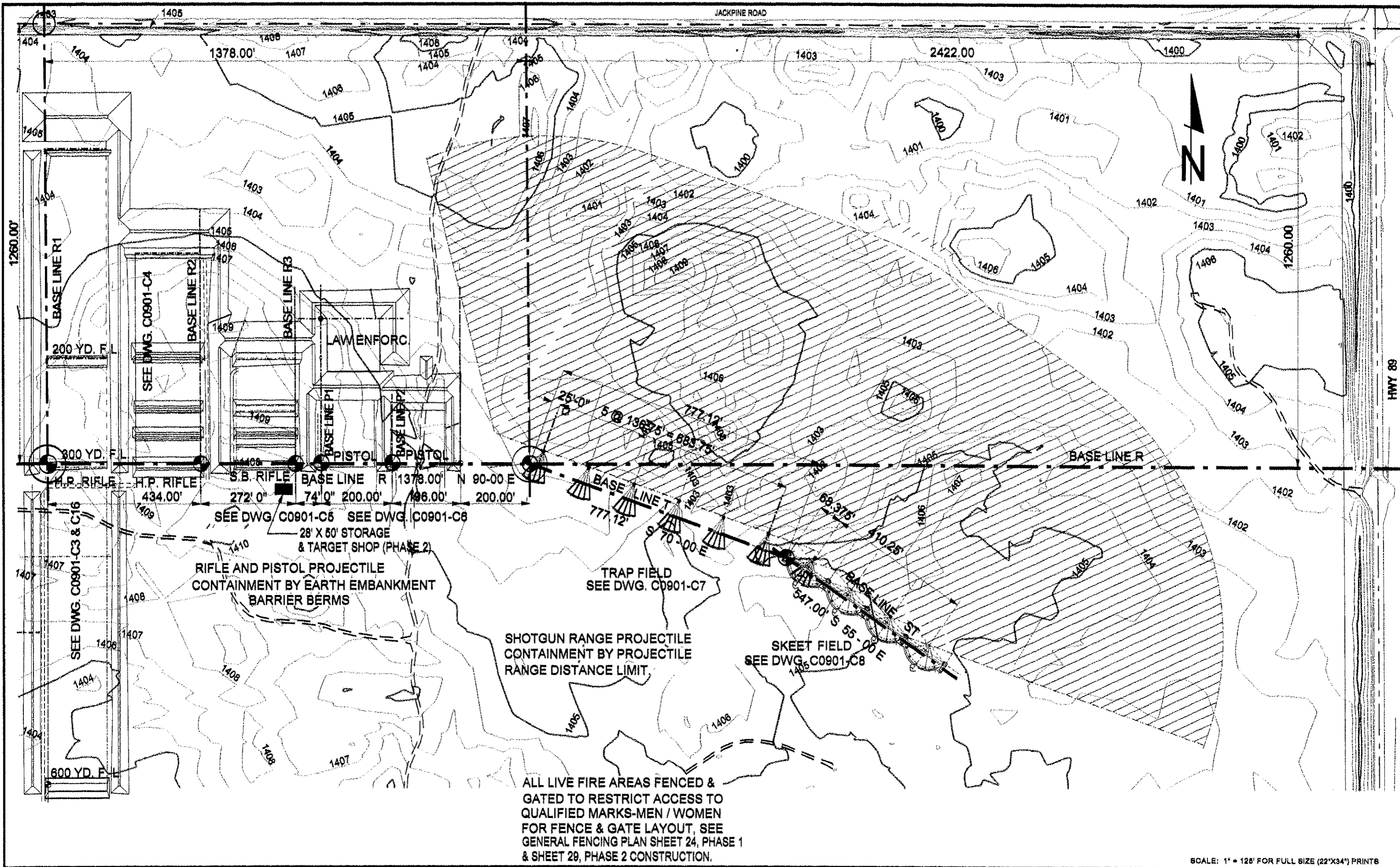


KEY LOCATION PLAN

## DRAWING SCHEDULE: SHOOTING RANGE PLANS

NO.	DESCRIPTION	PHASE ONE & PHASE TWO WORK
C0901 - C1	KEY PLAN, GEN. NOTES & DWG. SCHEDULE	PHASE ONE & PHASE TWO WORK
C0901 - C2	GENERAL SITE RANGE SAFETY PLAN, BASE LINE LAYOUT & PROJECTILE CONTAINMENT DIAGRAM	PHASE ONE & PHASE TWO WORK SHOWN
C0901 - C3	300 YD. HIGH POWER RIFLE RANGE PLAN, PROFILE & DETAILS	PHASE TWO WORK ONLY SHOWN
C0901 - C4	200 YD. HIGH POWER RIFLE RANGE PLAN, PROFILE & DETAILS	PHASE TWO WORK ONLY SHOWN
C0901 - C5	100 YD. SMALL BORE RIFLE RANGE PLAN, PROFILE & DETAILS	PHASE ONE WORK ONLY SHOWN
C0901 - C6	50 YD. PISTOL & LAW ENFORCEMENT RANGE PLANS & PROFILES	PHASE ONE & PHASE TWO WORK SHOWN
C0901 - C7	SHOTGUN RANGE FIRING LINE PLAN & TRAP RANGE DETAILS	PHASE ONE & PHASE TWO WORK SHOWN
C0901 - C8	SKEET RANGE FIRING LINE SINGLE UNIT PLAN & SKEET HSE. PLANS	PHASE ONE & PHASE TWO WORK SHOWN
C0901 - C9	SKEET/TRAP COMBO RANGE FIRING LINE PLAN & SKEET HSE. ELEVNS.	PHASE ONE & PHASE TWO WORK SHOWN
C0901 - C10	SKEET HOUSE & RIFLE RANGE FIRING LINE STRUCTURE DETAILS	PHASE ONE & PHASE TWO WORK SHOWN
C0901 - C11	PISTOL RANGE COVER STRUCTURE & BULLET CATCHER DETAILS	PHASE ONE & PHASE TWO WORK SHOWN
C0901 - C12	50 YD. PISTOL RANGE SECTION-ELEVATIONS & DETAILS	PHASE ONE WORK ONLY SHOWN
C0901 - C13	RIFLE RANGE CROSS SECTION-ELEVATION VIEWS FROM THE FIRING LINE	PHASE ONE & PHASE TWO WORK SHOWN
C0901 - C14	RIFLE RANGE PIT RETAINING WALL & MISC. DETAILS	PHASE TWO WORK ONLY SHOWN
C0901 - C15	MISCELLANEOUS SHOOTING RANGE DETAILS	PHASE ONE & PHASE TWO WORK SHOWN
C0901 - C16	600 YARD EXPANSION TO THE 300 YARD RANGE, PLAN, PROFILE & DETAILS	PHASE TWO WORK ONLY SHOWN

0	REV. 0 ISSUED FOR CONSTRUCTION	SCA	11/30/09	DESIGNED	SCA	11/30/09	I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	STUART ANDERSON PROFESSIONAL ENGINEERING SERVICES INC. 218-248-2398 BELTRAMI, MN, 56519	KARVAKKO Engineering 144 PAUL BUNYAN DRIVE NW, P.O. BOX 785 BELTRAMI, MN, 56519 TEL. 218-444-8004, FAX 218-444-8882	BELTRAMI COUNTY SHOOTING SPORTS PARK SHOOTING RANGE CONSTRUCTION PLANS	DWG. NO. C0901 REV. C1 0
B	REV. 0 SCHED. KEY PLAN, NOTES	SCA	6/28/09	DRAWN	SCA	6/28/09					
A	ISSUED FOR APPROVAL	SCA	6/27/09	DATE	SCA	6/27/09					
P1	PRELIM. STUDY REVIEW ISSUE	SCA	3/27/09	DATE	SCA	3/27/09					
NO.	REVISION DESCRIPTION	BY	APPR.	DATE	NO.	DATE	STUART ANDERSON REG. NO. 6721 DATE 11/30/09	35640 CO. RD. 238, DEER RIVER, MN			KEY PLAN, GENERAL NOTES & DRAWING SCHEDULE



NO.	REVISION DESCRIPTION	BY	DATE
0	REV. 0 ISSUED FOR CONSTRUCTION	SCA	11/30/09
B	REV. SPACING & WIDTH TO FIT BERM WIDTHS	SCA	9/28/09
A	ISSUED FOR APPROVAL	SCA	5/27/09
P1	PRELIM. STUDY REVIEW ISSUE	SCA	3/25/09
NO.	REVISION DESCRIPTION	BY	DATE

DESIGNED	CHECKED
SCA	SCA
DRAWN	APPR'D
SCA	SCA
DATE	JOB NO.
11/30/09	C0901

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION, AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

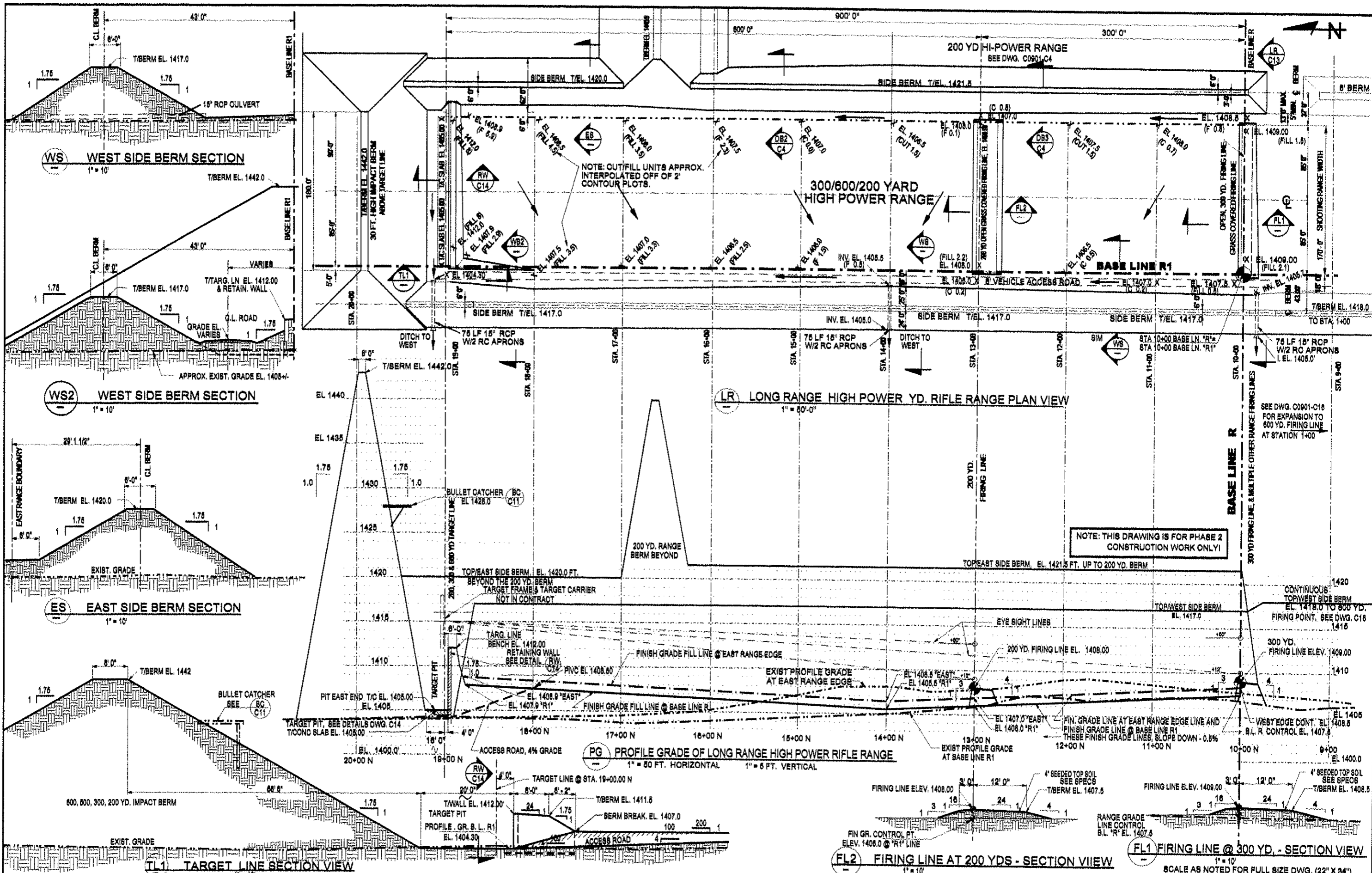
STUART SANDERSON  
 35640 CO. RD. 236, DEER RIVER, MN  
 REG. NO. 2171 DATE 11/30/09

**STUART SANDERSON PROFESSIONAL SERVICES INC.**  
**SAPES Engineering**  
 144 PAUL BUNYAN DRIVE NW - P.O. BOX 785 - BEMIDJI MN 56619  
 PHONE: (218) 444-8954 FAX: (218) 444-8952

**BELTRAMI COUNTY SHOOTING SPORTS PARK**  
 SHOOTING RANGE CONSTRUCTION PLANS  
 GENERAL SITE SAFETY PLAN & BASE LINE LAYOUT  
 & PROJECTILE CONTAINMENT DIAGRAM

DWG. NO. C0901  
 REV. C2 0

SCALE: 1" = 125' FOR FULL SIZE (22"X34") PRINTS



NO.	REVISION DESCRIPTION	BY	APPR.	DATE
0	REV. 0 ISSUED FOR CONSTRUCTION	SCA		11/30/09
B	REV. WIDTH TO FIT WITH BERMS	SCA		6/30/09
A	ISSUED FOR APPROVAL	SCA		9/27/09
P1	PRELIM. STUDY REVIEW ISSUE	SCA		3/2/09

DESIGNED: SCA  
CHECKED: SCA  
DRAWN: SCA  
APPR'D: SCA  
DATE: 11/30/09  
JOB NO.: C0901

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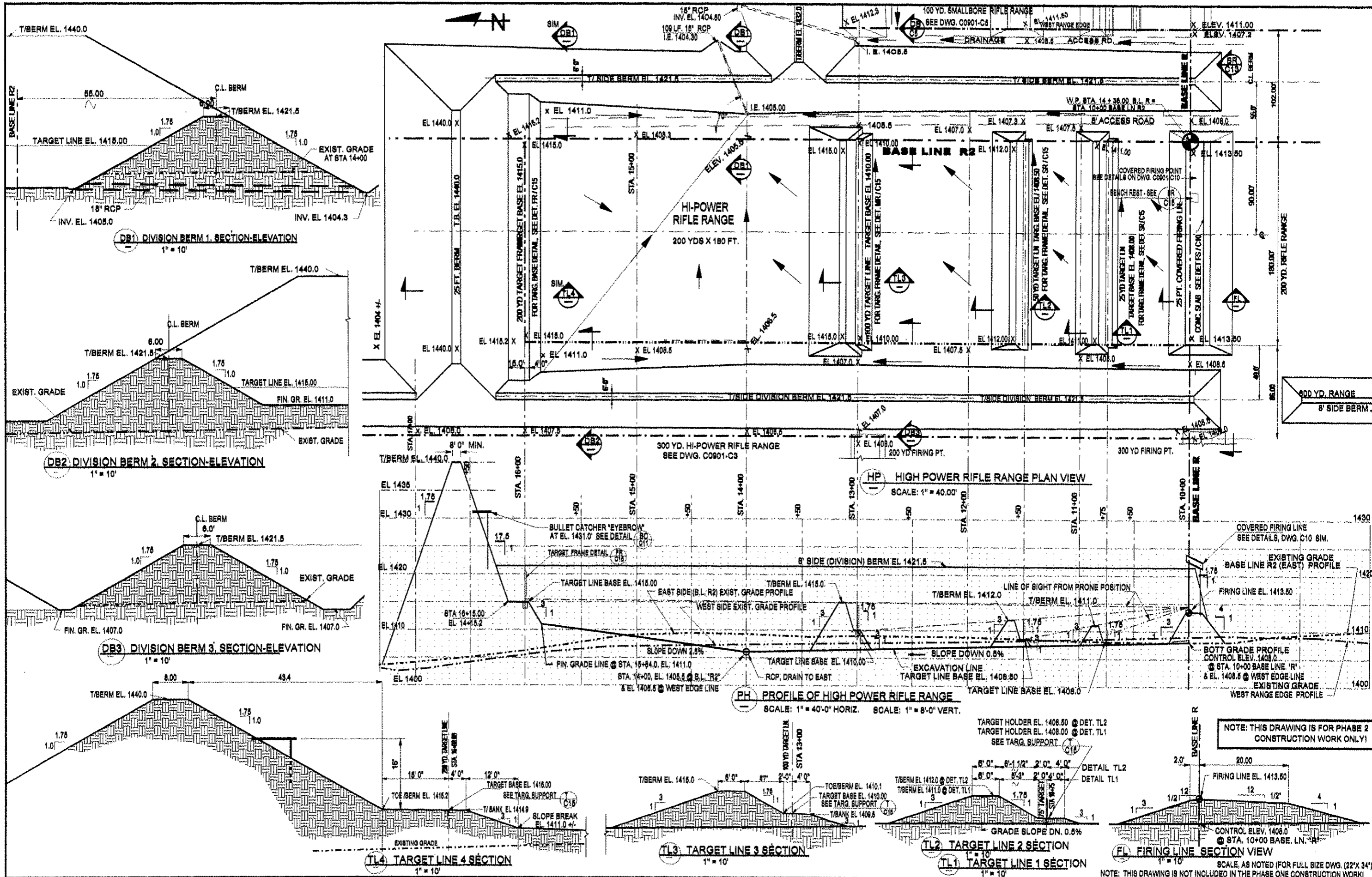
STUART ANDERSON  
REGISTERED PROFESSIONAL ENGINEER  
NO. 4741  
DATE: 11/30/09

**SAPES**  
STUART ANDERSON  
REGISTERED PROFESSIONAL ENGINEERING SERVICES INC.  
TEL 218-240-2398  
35840 CO. RD. 238, DEER RIVER, MN

**KARVAKKO Engineering**  
144 PAUL BUNYAN DRIVE NW, P.O. BOX 785  
MINN. DR., MN. 55819  
TEL. 218-444-8004, FAX 218-444-8582

**BELTRAMI COUNTY SHOOTING SPORTS PARK**  
SHOOTING RANGE CONSTRUCTION PLANS  
300 YD. HIGH POWER RANGE PLAN, PROFILE & DETAILS

DWG. NO. C0901  
REV. C3 0



NO.	REVISION DESCRIPTION	BY	APPR.	DATE
0	REV. 0 ISSUED FOR CONSTRUCTION	SCA	SCA	12/01/08
B	REV. WIDTH TO 180'	SCA	SCA	6/18/09
A	ISSUED FOR APPROVAL	SCA	SCA	8/27/09
P1	PRELIM. STUDY REVIEW ISSUE	SCA	SCA	5/18/09
NO.	REVISION DESCRIPTION	BY	APPR.	DATE

DESIGNED: SCA  
 CHECKED: SCA  
 DRAWN: SCA  
 DATE: 12/01/08

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION, AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

STUART C. ANDERSON REG. NO. 5721 DATE: 12/01/08

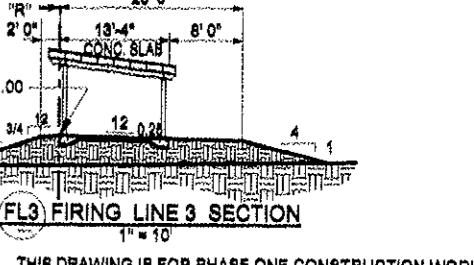
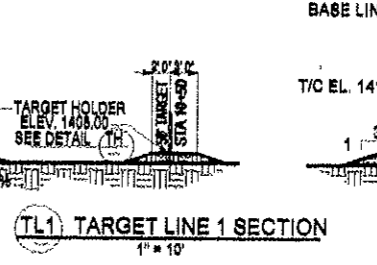
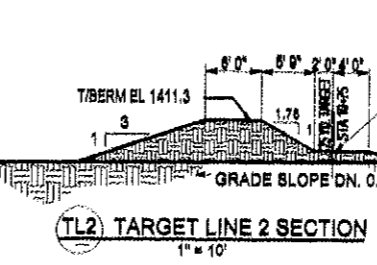
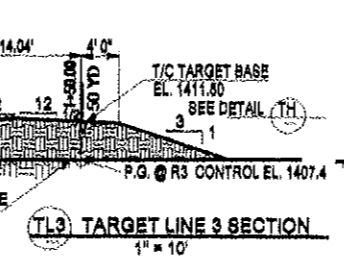
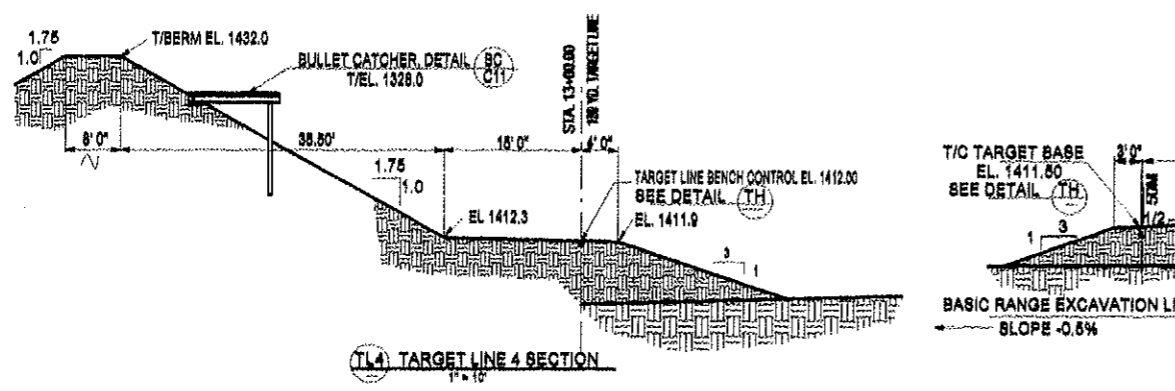
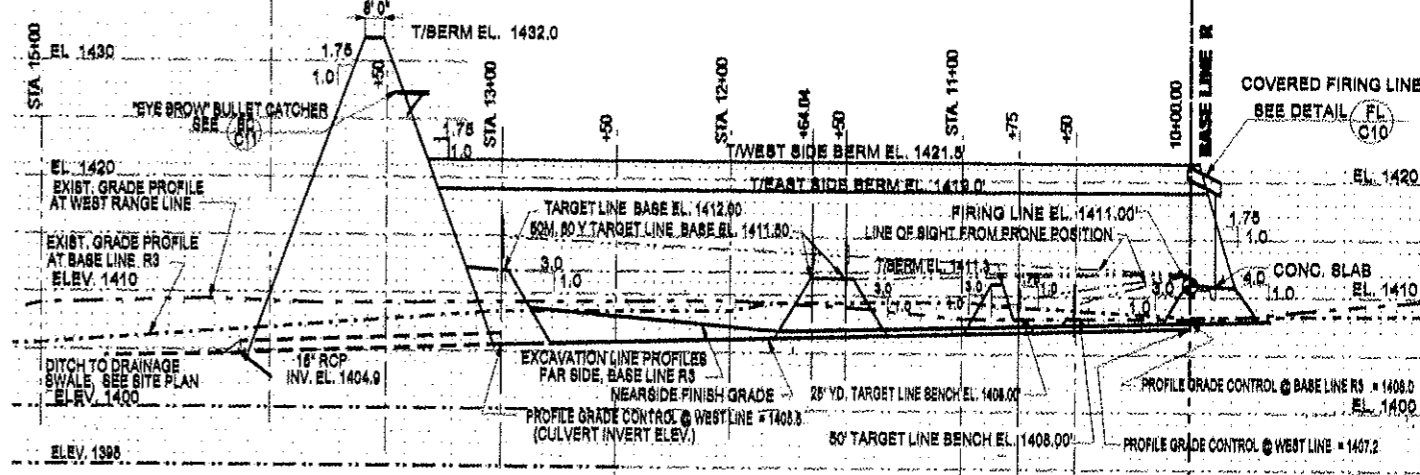
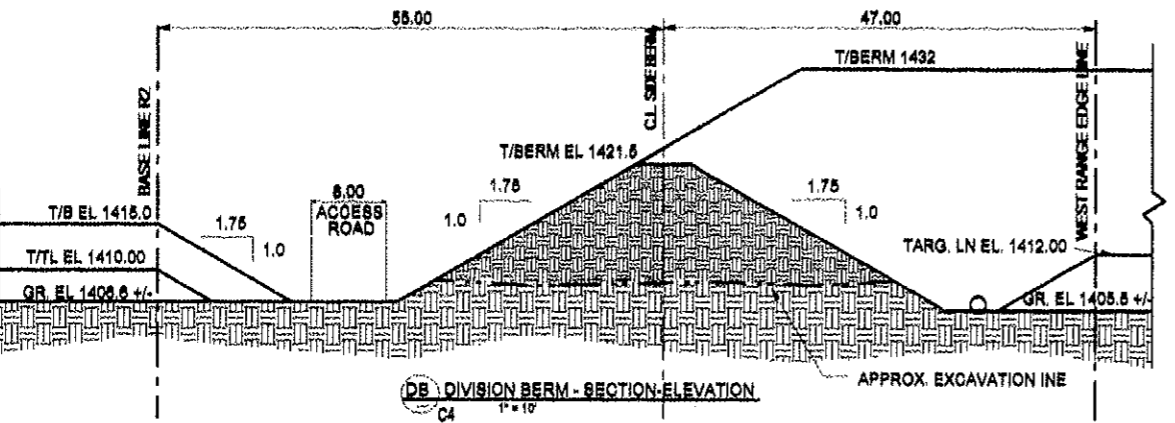
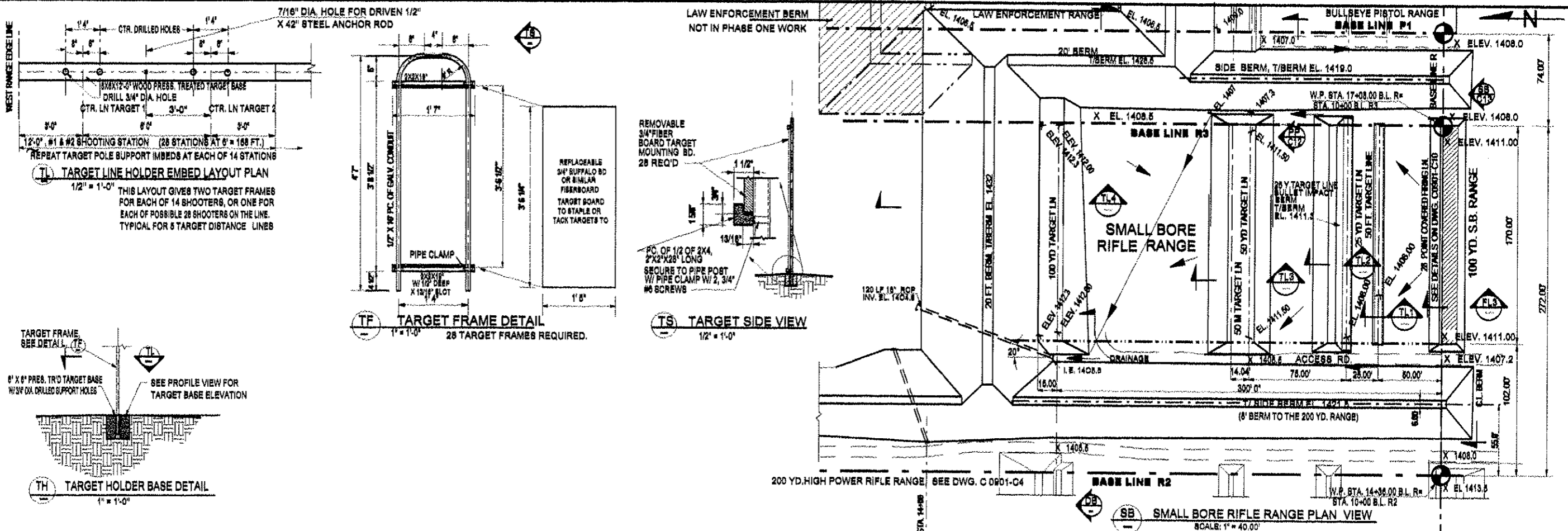
STUART ANDERSON PROFESSIONAL SERVICES INC.  
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 TEL. 218-248-2398

KARVAKKO Engineering  
 144 PAUL WINSTON DRIVE NW, P.O. BOX 785  
 MINNAPOLIS, MN. 55418  
 TEL. 218-444-8004, FAX 218-444-8852

BELTRAMI COUNTY SHOOTING SPORTS PARK  
 SHOOTING RANGE CONSTRUCTION PLANS  
 200 YD. HIGH POWER RIFLE RANGE PLAN, PROFILE & DETAILS

DWG. NO. C0901  
 REV. C4 0

NOTE: THIS DRAWING IS NOT INCLUDED IN THE PHASE ONE CONSTRUCTION WORK



THIS SHOOTING RANGE AND ENTIRE DRAWING IS INCLUDED IN THE PHASE ONE CONSTRUCTION WORK

THIS DRAWING IS FOR PHASE ONE CONSTRUCTION WORK. SEE DWG. C0901-D1 FOR GENERAL NOTES. SCALE AS NOTED FOR FULL SIZE DRAWINGS (22" X 34")

0	REV. 0 ISSUED FOR CONSTRUCTION	SCA	12/01/09	DESIGNED	SCA	CHCKED	SCA
B	REVISED FIRE LINE SPACING TO 8'-0"	SCA	7/8/09	DRAWN	SCA	APPROV	SCA
A	ISSUED FOR APPROVAL	SCA	6/27/09	DATE	SCA	JOB NO.	SCA
P1	PRELIM. STUDY REVIEW/ISSUE	SCA	3/2/09	DATE	SCA	JOB NO.	SCA
NO.	REVISION DESCRIPTION	BY	APPR.	DATE			

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION, AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

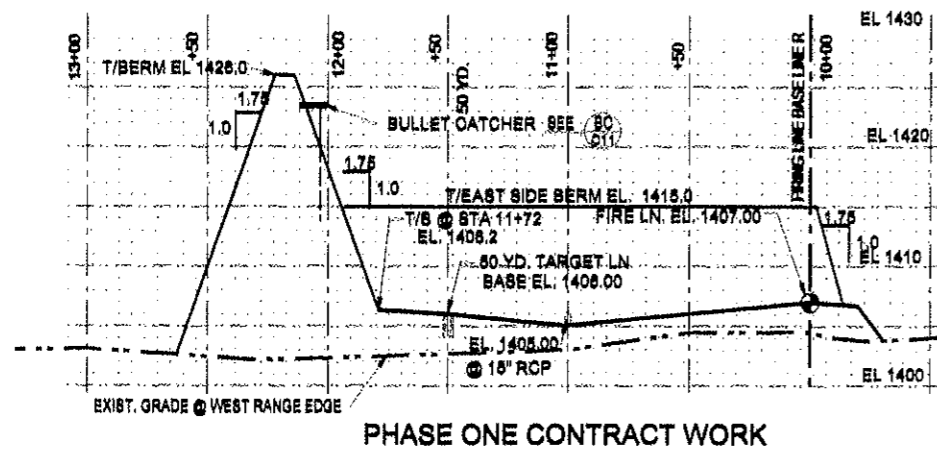
STUART O. ANDERSON  
REG. NO. 6741  
DATE 12/01/09

**STUART O. ANDERSON**  
PROFESSIONAL ENGINEER  
SERVICES INC.  
144 PAUL BUNYAN DRIVE NW, P.O. BOX 785  
BRANDT, MN. 55816  
TEL. 218-248-2395  
85840 CO. RD. 255, DEER RIVER, MN  
TEL. 218-444-8004, FAX 218-444-8002

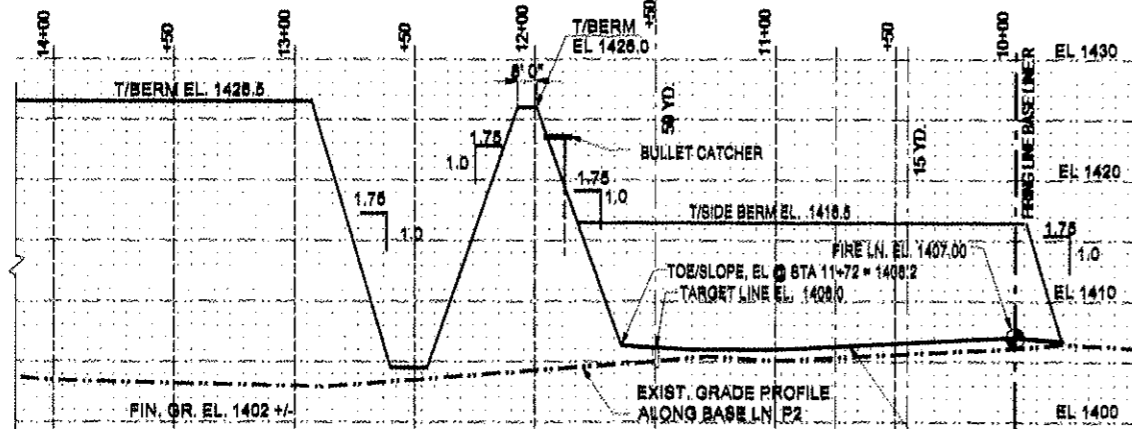
**KARVAKKO Engineering**  
144 PAUL BUNYAN DRIVE NW, P.O. BOX 785  
BRANDT, MN. 55816  
TEL. 218-444-8004, FAX 218-444-8002

**BELTRAMI COUNTY SHOOTING SPORTS PARK**  
SHOOTING RANGE CONSTRUCTION PLANS  
100 YARD SMALLBORE RIFLE RANGE PLAN, PROFILE & DETAILS

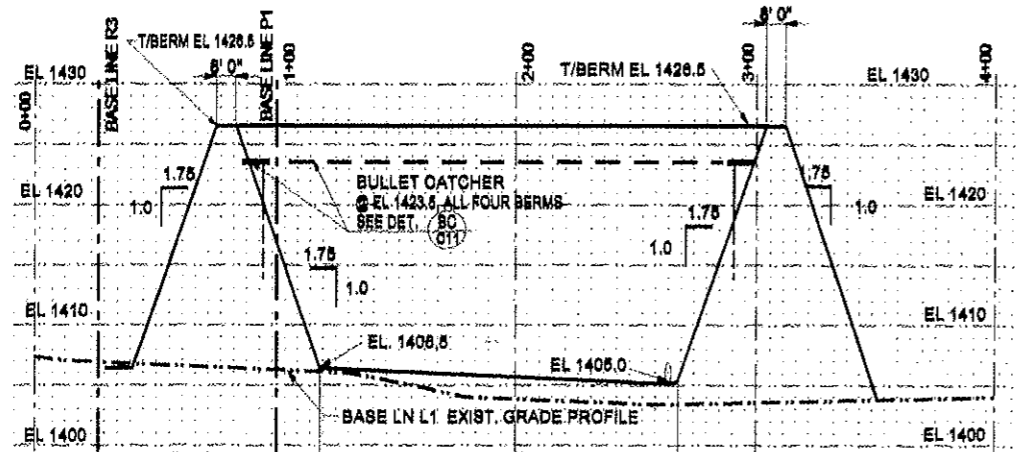
DWG. NO. C0901  
REV. C5  
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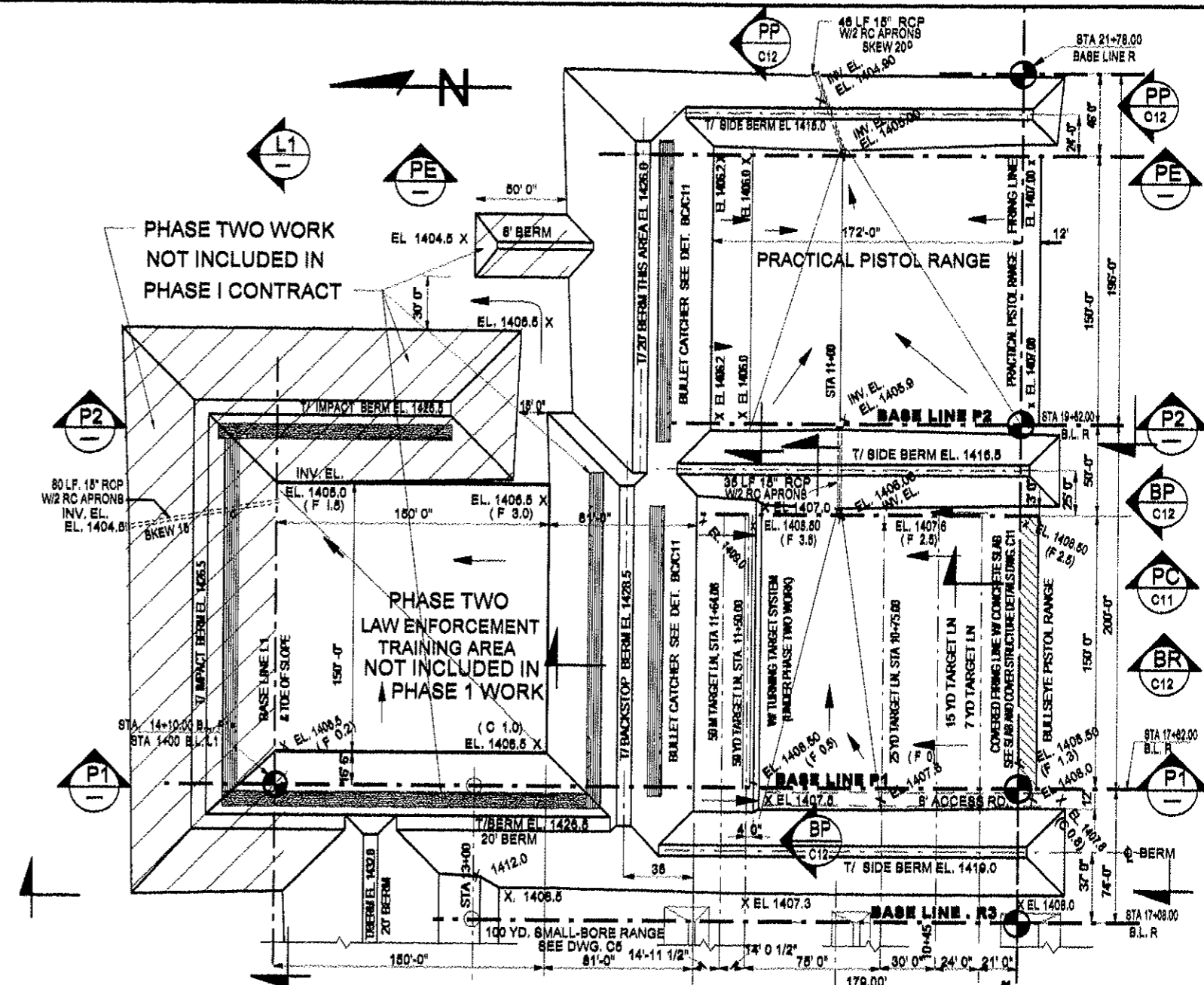
**PE PROFILE ALONG EAST EDGE, ACTION PISTOL RANGE**  
SCALE: 1" = 40' HORIZ., 1" = 8' VERT. LOOKING EAST



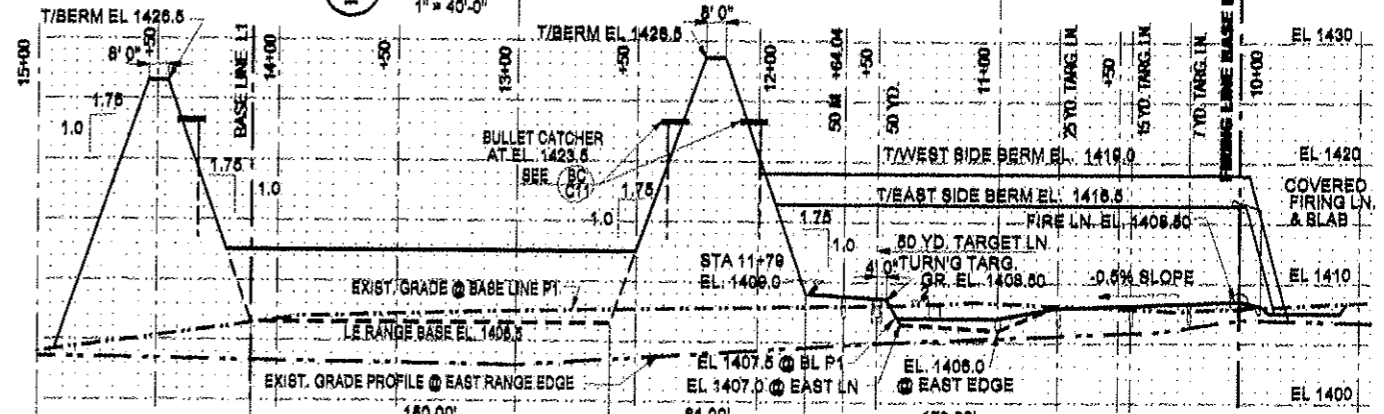
**P2 PROFILE ALONG ACTION PISTOL RANGE BASE LINE P2**  
SCALE: 1" = 40' HORIZ., 1" = 8' VERT. LOOKING EAST



**L1 PROFILE ALONG LAW ENFORCEMENT TRNG. AREA, BASE LINE L1**  
SCALE: 1" = 40' HORIZ., 1" = 8' VERT. LOOKING NORTH



**PL PISTOL & LAW ENFORCEMENT RANGE PLAN VIEWS**  
SCALE: 1" = 40'-0"



**P1 PROFILE ALONG BULLSEYE PISTOL RANGE, BASE LINE P1**  
SCALE: 1" = 40' HORIZ., 1" = 8' VERT. LOOKING EAST

SCALE, AS NOTED FOR FULL (22" X 34") SIZE PRINT.

NO.	REVISION DESCRIPTION	BY	APPR.	DATE
0	REV. 0 ISSUED FOR CONSTRUCTION	SCA		12/01/08
1	REV. 8 PACING TO FIT BERM SLOPE & MISC.	SCA		7/9/08
A	ISSUED FOR APPROVAL	SCA		8/12/08
P1	PRELIM. STUDY REVIEW ISSUE	SCA		3/2/08

DESIGNED	CHECKED	DATE	JOB NO.	NO.
SCA	SCA	12/01/08	C0901	

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION, AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

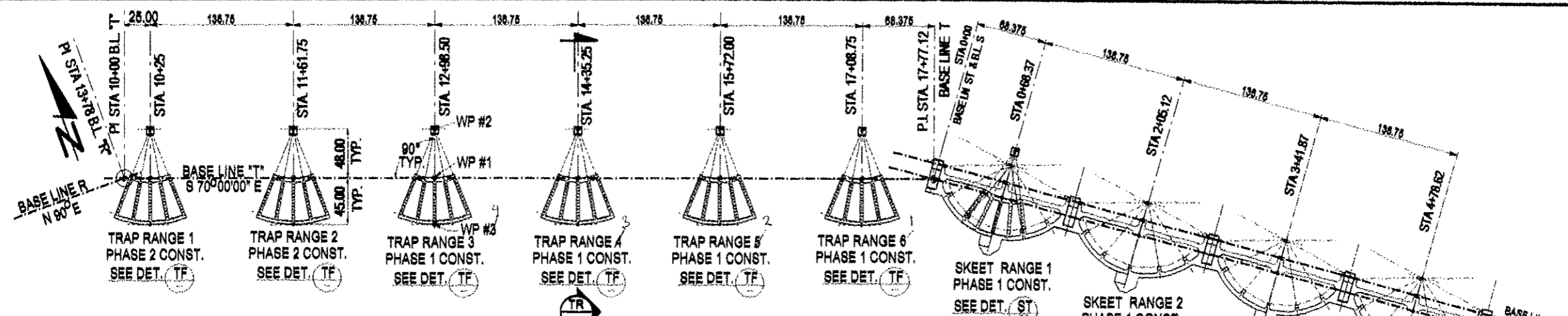
STUART C. ANDERSON REG. NO. 5721 DATE: 12/01/08

**STUART ANDERSON PROFESSIONAL ENGINEERING SERVICES INC.**  
35840 CO. RD. 239, DEER RIVER, MN

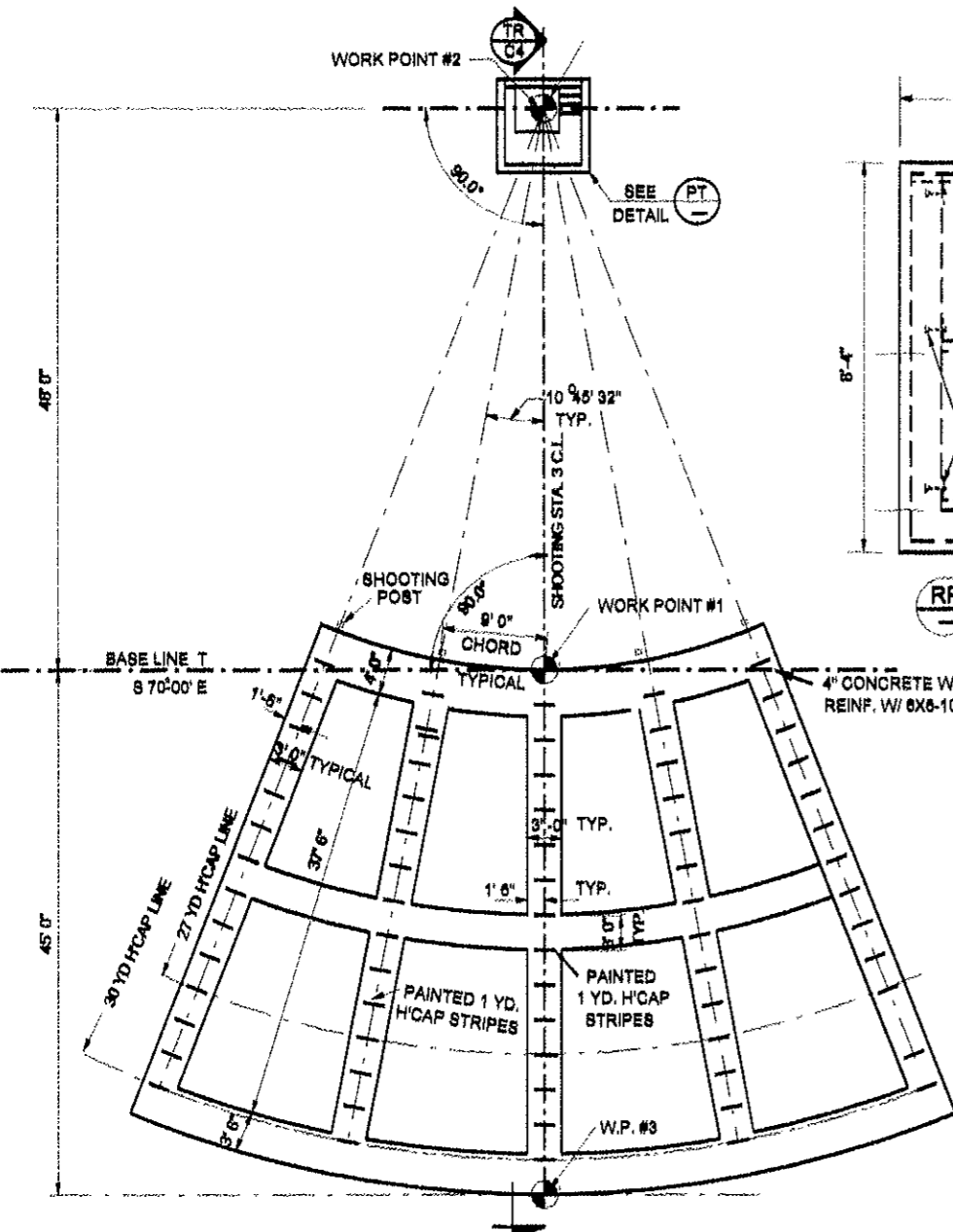
**KARVAKKO Engineering**  
144 PAUL BUNYAN DRIVE NW P.O. BOX 785  
BEMIDJIE, MN 56612  
TEL: 218-444-8004, FAX: 218-444-8862

**BELTRAMI COUNTY SHOOTING SPORTS PARK**  
SHOOTING RANGE CONSTRUCTION PLANS  
50 YD. PISTOL & LAW ENFORCEMENT RANGES PLAN & PROFILES

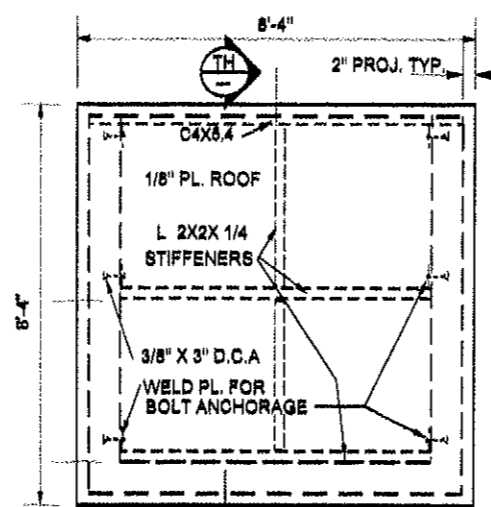
DWG. NO. C0901 REV. C6 0



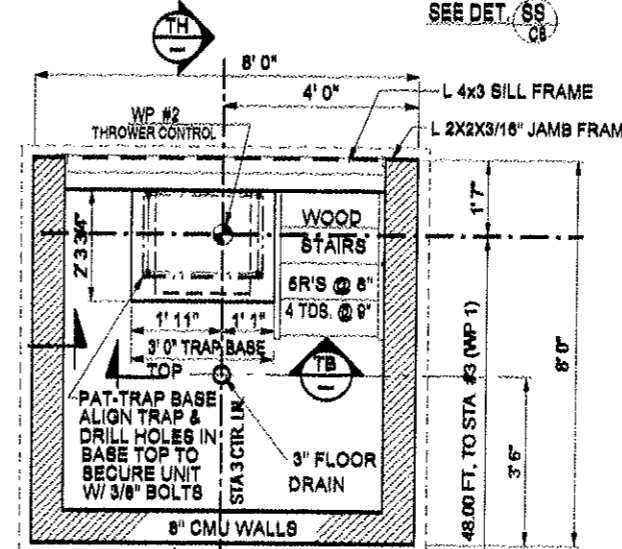
**SR SHOTGUN RANGE PLAN**  
1" = 60'



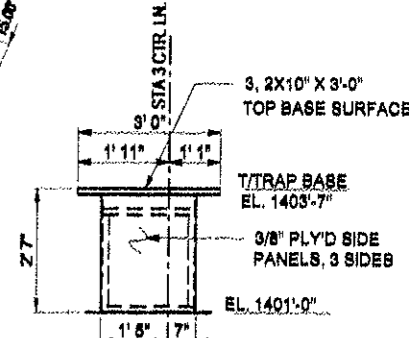
**TF TRAP FIELD LAYOUT PLAN**  
1/8" = 1'-0"



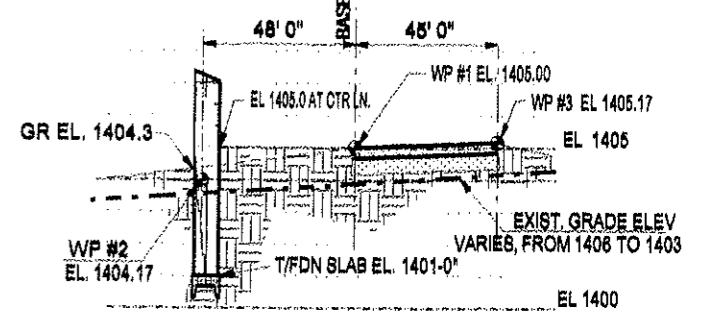
**RP ROOF PLAN - TRAP HSE**  
1/2" = 1'-0"



**PT PLAN OF TRAP HOUSE**  
1/2" = 1'-0"

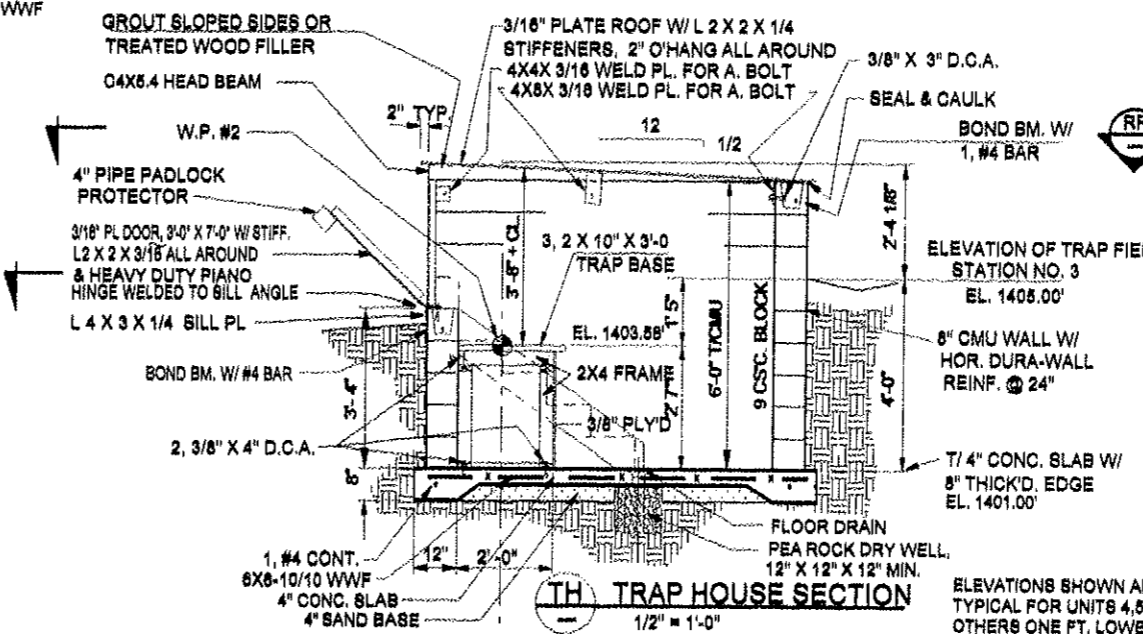


**TB TRAP BASE FRAME ELEVATION**  
1/2" = 1'-0"



**TR TRAP RANGE PROFILE SECTION**

TYPICAL AT TRAP RANGES 4, 5 & 6  
TRAP RANGES 1, 2 & 3; CONTROL ELEVATIONS ONE FOOT LOWER  
1" = 30' HORIZ., 1" = 3'-0" VERT.



**TH TRAP HOUSE SECTION**  
1/2" = 1'-0"

FOR GENERAL RANGE NOTES, SEE DWG. C0901-C1  
ADJUST FINAL GRADE CONTROL FOR THE TRAP HOUSES & SHOOTING STATIONS TO FIT THE FINAL SITE DRAINAGE CONTROL ELEVATIONS.  
SHOOTING STATIONS ON EACH TRAP RANGE UNIT MAY NOT VARY IN ELEVATION BY MORE THAN TWO INCHES.  
ALL WOOD MEMBERS TO BE PRESSURE TREATED  
ALL FILL FOR THE SHOOTING STATION WALKWAYS SHALL BE PLACED IN MAXIMUM LIFT DEPTHS OF 12" AND BE COMPACTED TO A MINIMUM OF 90% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR TEST (ASTM 608)

SCALE, AS NOTED FOR FULL SIZE (22"x34") DWG.

0	REV. 0 ISSUED FOR CONSTRUCTION	SCA	12/13/09
B	REV. TO FIT 10' SKEET HSE-138.75' GPC.	SCA	6/8/09
A	ISSUED FOR APPROVAL	SCA	5/27/09
P1	PRELIM. STUDY REVIEW ISSUE	SCA	3/2/09
NO.	REVISION DESCRIPTION	BY	APPR. DATE

DESIGNED	SCA
CHECKED	SCA
DRAWN	SCA
DATE	12/13/09
JOB NO.	C0901

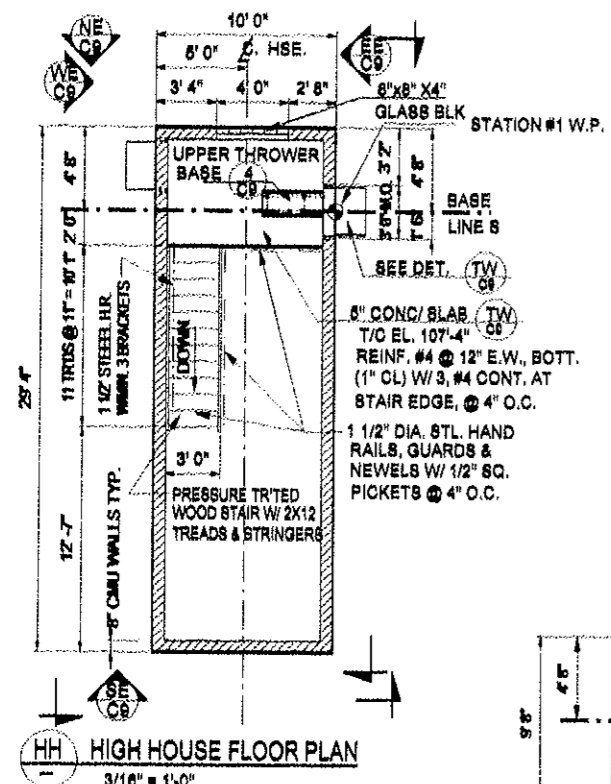
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION, AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
STUART O. ANDERSON REG. NO. 9721 DATE: 12/13/09

**STUART O. ANDERSON**  
PROFESSIONAL ENGINEER  
SAPES SERVICES INC.  
144 PAUL BUNYAN DRIVE, NW, P.O. BOX 785  
DEER RIVER, MN. 55816  
TEL. 218-248-2398  
35540 CO. RD. 238, DEER RIVER, MN

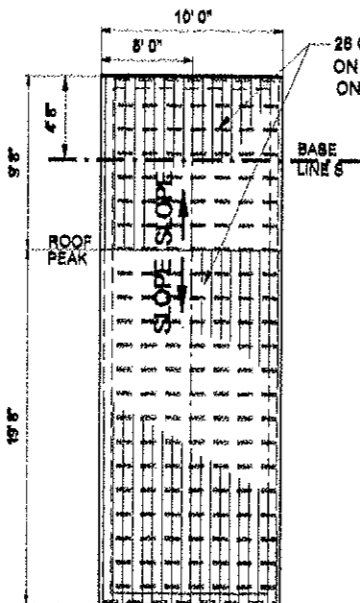
**KARVAKKO Engineering**  
144 PAUL BUNYAN DRIVE, NW, P.O. BOX 785  
DEER RIVER, MN. 55816  
TEL. 218-444-8004, FAX 218-444-8882

**BELTRAMI COUNTY SHOOTING SPORTS PARK**  
SHOOTING RANGE CONSTRUCTION PLANS  
SHOTGUN RANGE FIRING LINE PLAN & TRAP RANGE DETAILS  
DWG. NO. C0901  
REV. C7 0

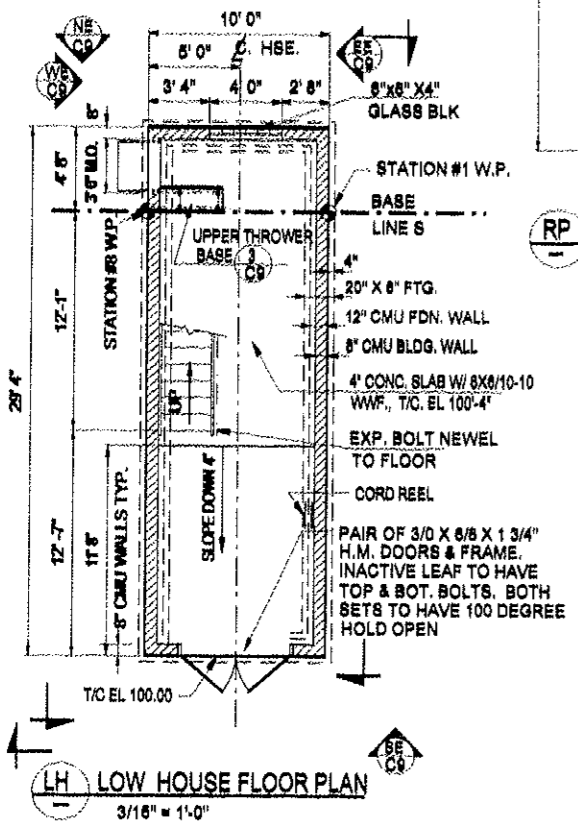




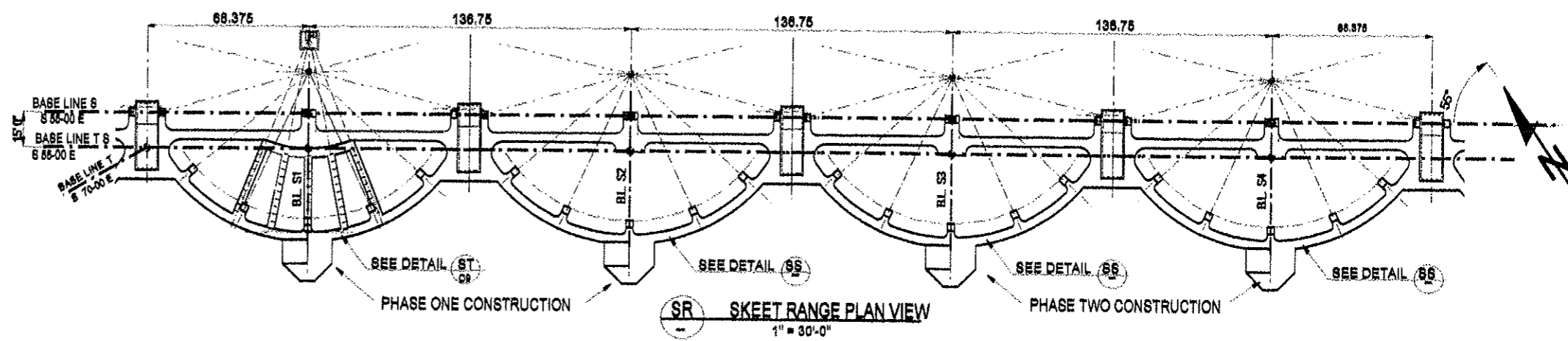
HH HIGH HOUSE FLOOR PLAN  
3/16" = 1'-0"



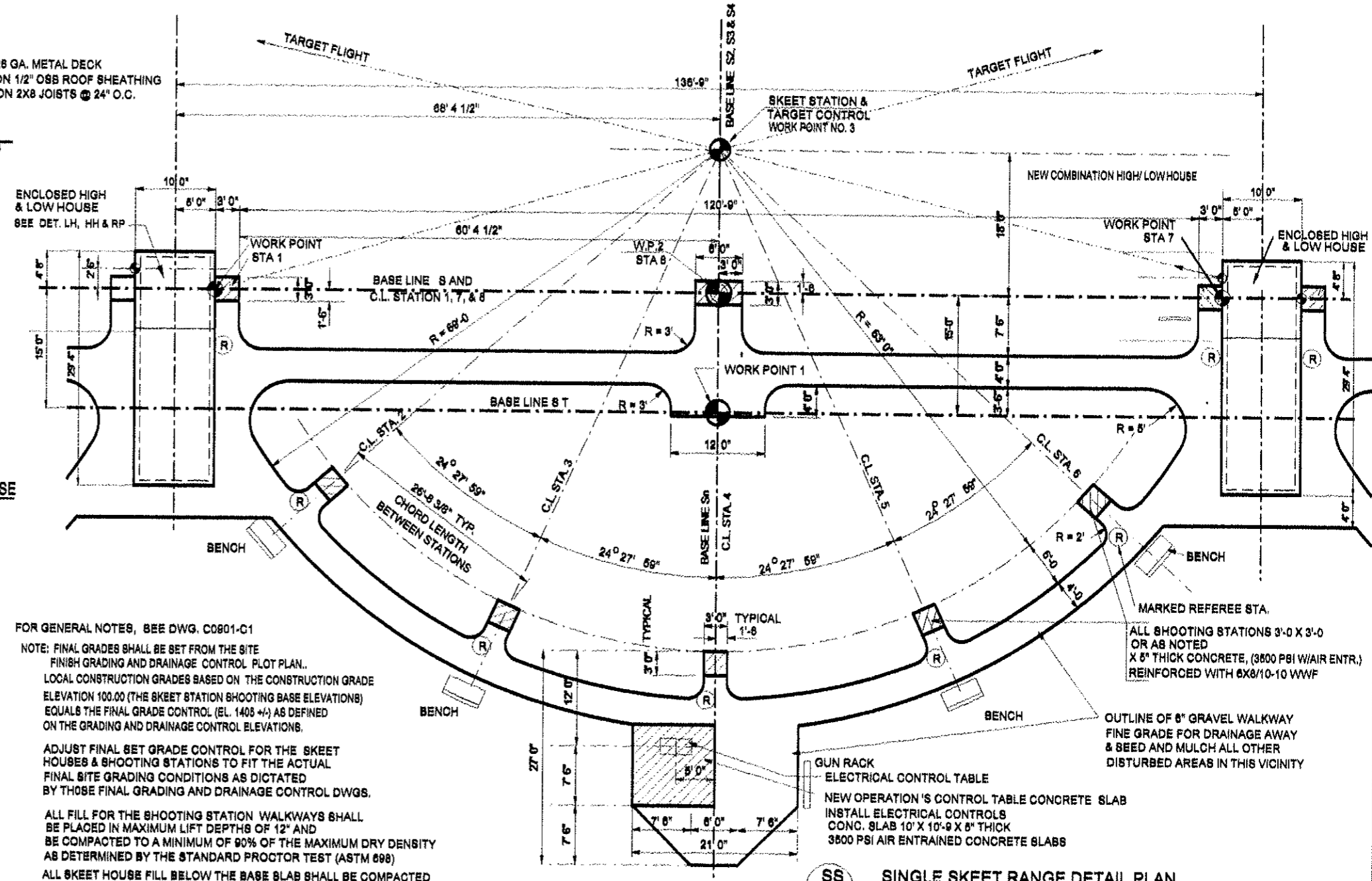
RP ROOF PLAN-SKEET HOUSE  
3/16" = 1'-0"



LH LOW HOUSE FLOOR PLAN  
3/16" = 1'-0"



SR SKEET RANGE PLAN VIEW  
1" = 30'-0"



SS SINGLE SKEET RANGE DETAIL PLAN  
SCALE 1" = 8'-0"

FOR GENERAL NOTES, SEE DWG. C0901-C1

NOTE: FINAL GRADES SHALL BE SET FROM THE SITE FINISH GRADING AND DRAINAGE CONTROL PLOT PLAN. LOCAL CONSTRUCTION GRADES BASED ON THE CONSTRUCTION GRADE ELEVATION 100.00 (THE SKEET STATION SHOOTING BASE ELEVATIONS) EQUALS THE FINAL GRADE CONTROL (EL. 1408 +4) AS DEFINED ON THE GRADING AND DRAINAGE CONTROL ELEVATIONS.

ADJUST FINAL SET GRADE CONTROL FOR THE SKEET HOUSES & SHOOTING STATIONS TO FIT THE ACTUAL FINAL SITE GRADING CONDITIONS AS DICTATED BY THOSE FINAL GRADING AND DRAINAGE CONTROL DWGS.

ALL FILL FOR THE SHOOTING STATION WALKWAYS SHALL BE PLACED IN MAXIMUM LIFT DEPTHS OF 12" AND BE COMPACTED TO A MINIMUM OF 90% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR TEST (ASTM 698)

ALL SKEET HOUSE FILL BELOW THE BASE SLAB SHALL BE COMPACTED TO 96% MAX. DRY DENSITY STD. PROCTOR TEST.

NO.	REVISION DESCRIPTION	BY	APPR.	DATE
0	REV. 0 ISSUED FOR CONSTRUCTION	SCA		12/02/09
B	REV. TO 10' SKEET HSE	SCA		8/7/09
A	ISSUED FOR APPROVAL	SCA		8/27/09
P1	PRELIM. STUDY REVIEW ISSUE	SCA		3/2/09

DESIGNED	CHECKED	DATE
SCA	SCA	12/02/09
SCA	SCA	12/02/09

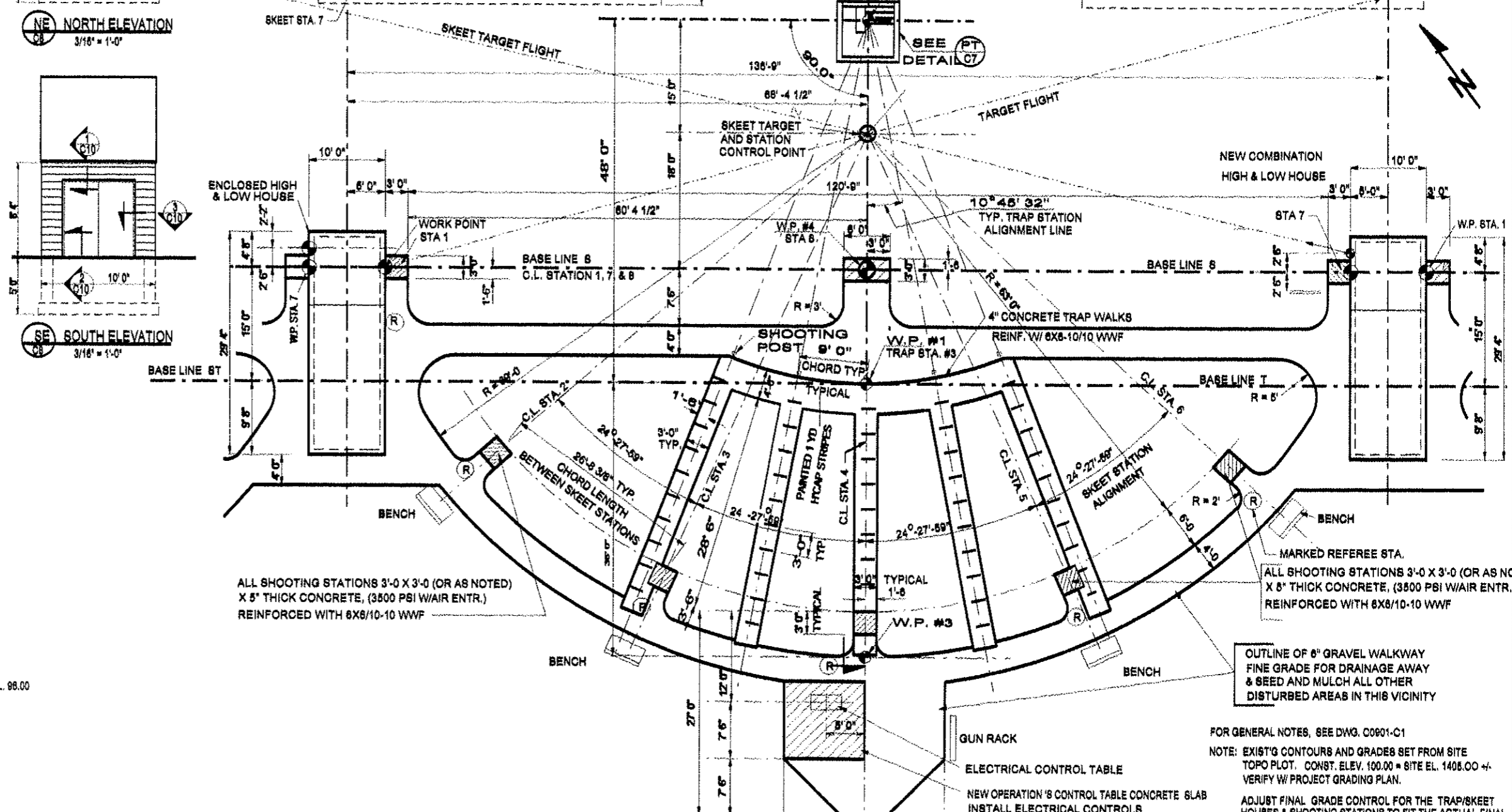
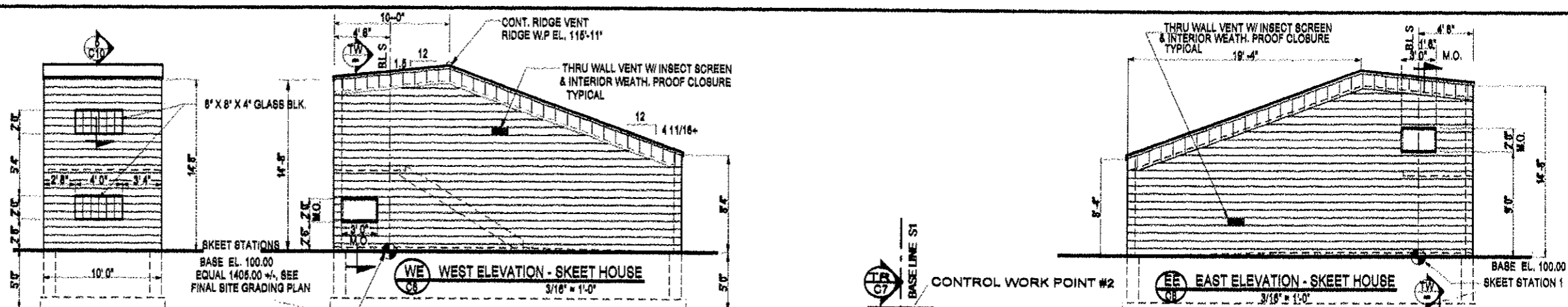
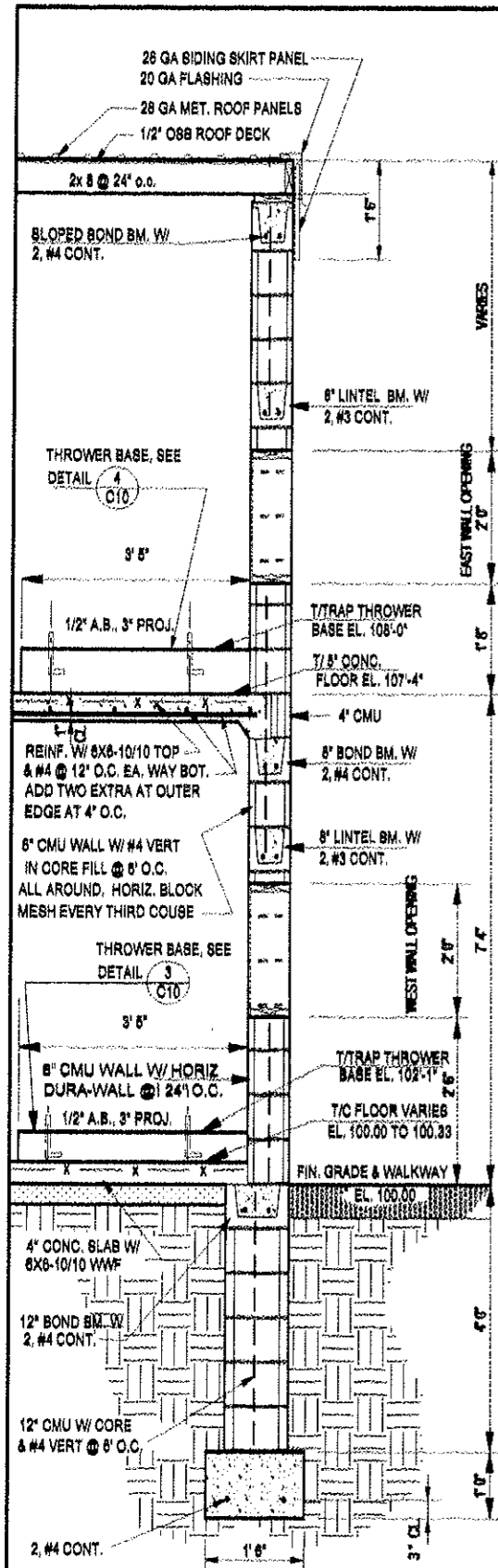
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STUART O. ANDERSON REG. NO. 6721 DATE: 12/02/09

STUART ANDERSON PROFESSIONAL ENGINEERING SERVICES INC.  
144 PAUL BUNYAN DRIVE NW P.O. BOX 785  
BEMIDJIE, MN. 56616  
TEL. 218-246-2398  
TEL. 218-444-8004, FAX 218-444-8852

BELTRAMI COUNTY SHOOTING SPORTS PARK  
SHOOTING RANGE CONSTRUCTION PLANS  
SKEET RANGE FIRING LINE SINGLE UNIT PLAN & SKEET HSE PLAN VIEWS

DWG. NO. C0901  
REV. C8  
0



**TW** TYPICAL WALL SECTION  
3/16" = 1'-0"

**ST** SKEET-TRAP COMBO STATION LAYOUT DIMENSIONS  
SCALE: 1" = 8'-0"

FOR GENERAL NOTES, SEE DWG. C0901-C1  
NOTE: EXIST'G CONTOURS AND GRADES SET FROM SITE TOPO PLOT. CONST. ELEV. 100.00 = SITE EL. 1405.00 +/- VERIFY W/ PROJECT GRADING PLAN.  
ADJUST FINAL GRADE CONTROL FOR THE TRAP/SKEET HOUSES & SHOOTING STATIONS TO FIT THE ACTUAL FINAL GRADE CONDITIONS AS DICTATED BY THE FINAL GRADING AND DRAINAGE CONTROL TO INSURE THERE IS GOOD SITE DRAINAGE.

NO.	REVISION DESCRIPTION	BY	APPR.	DATE
0	REV. 0 ISSUED FOR CONSTRUCTION	SCA	SCA	12/02/09
B	REV. SKEET HSE TO 10' WIDTH	SCA	SCA	6/12/09
A	ISSUED FOR APPROVAL	SCA	SCA	5/27/09
P-1	PRELIM. STUDY REVIEW ISSUE	SCA	SCA	3/2/09

DESIGNED	CHECKED	DATE	JOB NO.
SCA	SCA	12/02/09	C0901

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STUART O. ANDERSON REG. NO. 5721 DATE 11/02/09

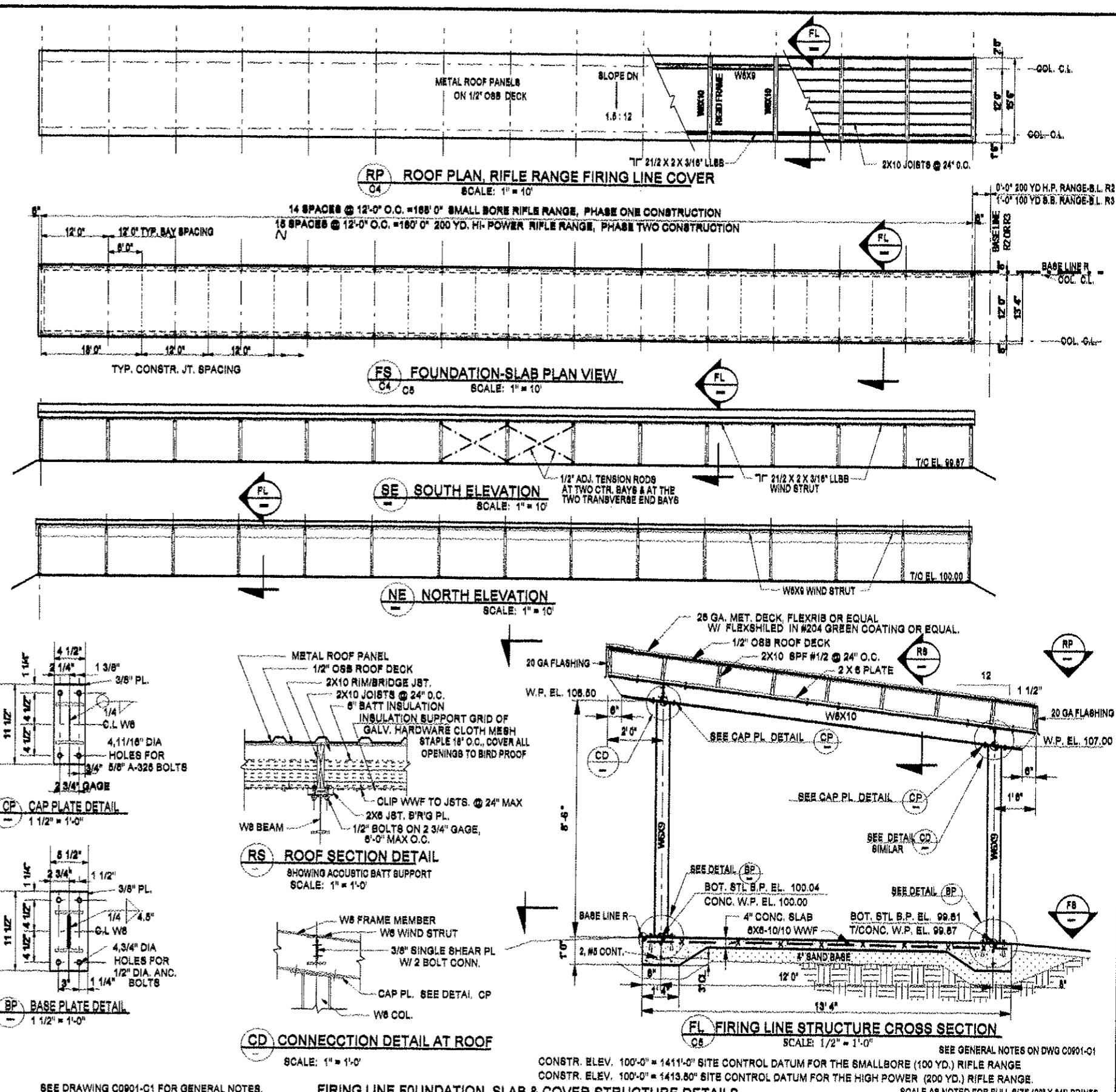
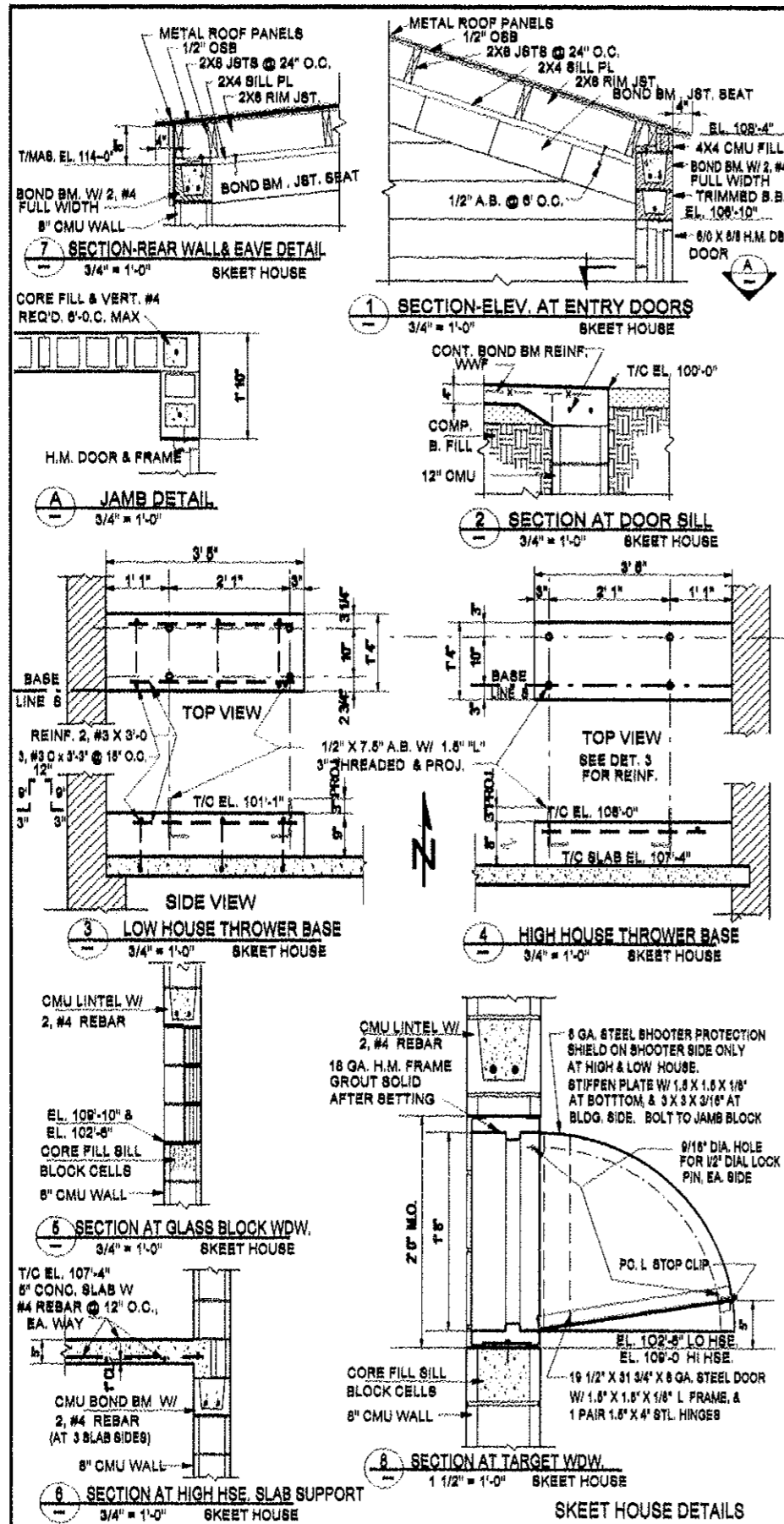
STUART O. ANDERSON  
PROFESSIONAL ENGINEERING SERVICES INC.  
144 PAUL BUNYAN DRIVE NW, P.O. BOX 785  
BEMIDJI, MN, 56619  
TEL 218-248-2396  
35540 CO. RD. 238, DEER RIVER, MN  
TEL 218-444-8004, FAX 218-444-8982

**KARVAKKO Engineering**  
144 PAUL BUNYAN DRIVE NW, P.O. BOX 785  
BEMIDJI, MN, 56619  
TEL 218-444-8004, FAX 218-444-8982

**BELTRAMI COUNTY SHOOTING SPORTS PARK**  
SHOOTING RANGE CONSTRUCTION PLANS  
SKEET/TRAP COMBO FIRING LINE PLAN & SKEET HOUSE, ELEV'S.

DWG. NO. C0901  
REV. C9 0

SCALE, AS NOTED FOR FULL (22" X 34") PRINTS



NO.	REVISION DESCRIPTION	BY	APPV.	DATE
0	REV. 0 ISSUED FOR CONSTRUCTION	SCA		12/01/09
1	REV. SKEET HSE. ADDED RIFLE RANGE COVER	SCA		8/23/09
2	ISSUED FOR APPROVAL	SCA		5/27/09
3	PRELIM. STUDY REVIEW ISSUE	SCA		3/2/09
4	REVISION DESCRIPTION	BY	APPV.	DATE

SEE DRAWING C0901-C1 FOR GENERAL NOTES.

**FIRING LINE FOUNDATION, SLAB & COVER STRUCTURE DETAILS**

CONSTR. ELEV. 100'-0" = 1411'-0" SITE CONTROL DATUM FOR THE SMALLBORE (100 YD.) RIFLE RANGE  
 CONSTR. ELEV. 100'-0" = 1413.50' SITE CONTROL DATUM FOR THE HIGH POWER (200 YD.) RIFLE RANGE.

SCALE AS NOTED FOR FULL SIZE (22" X 34") PRINTS

SEE GENERAL NOTES ON DWG C0901-C1

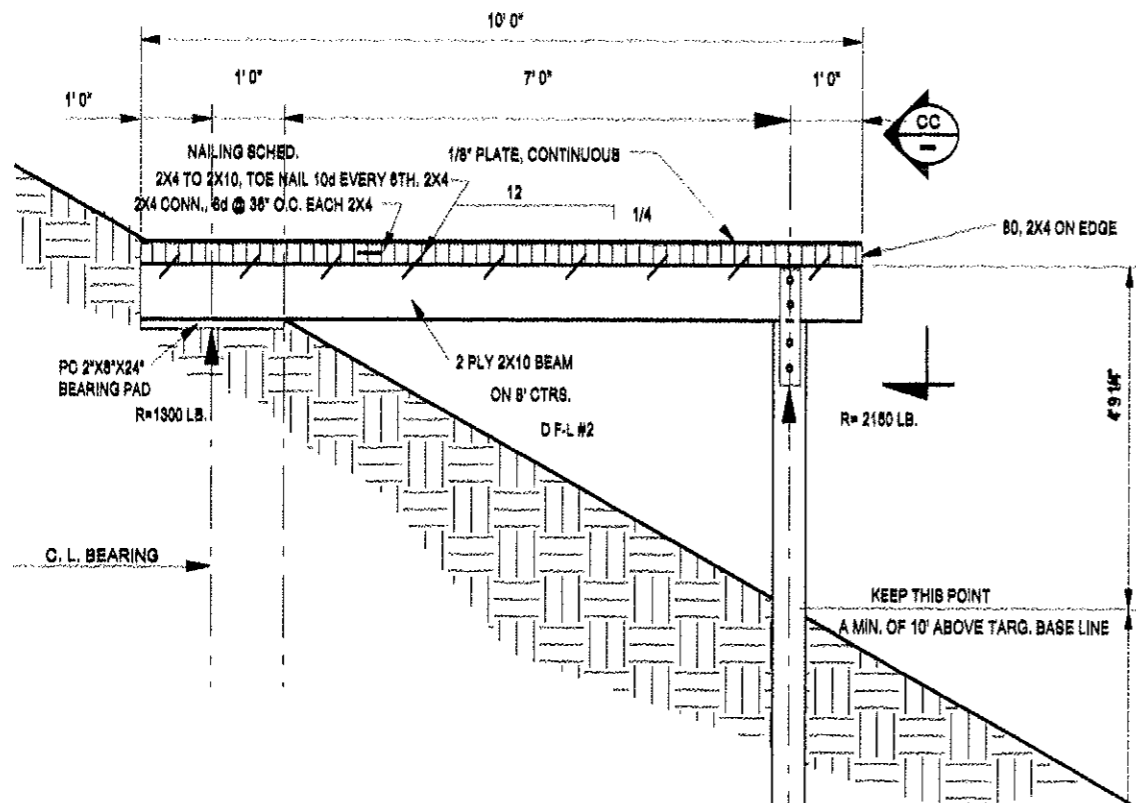
STUART ANDERSON PROFESSIONAL ENGINEERING SERVICES INC.  
 144 PAUL BUNYAN DRIVE NW PO. BOX 785  
 MN/DJ, MN 55615  
 TEL. 218-246-2395  
 TEL. 218-444-8004, FAX 218-444-8002

**KARVAKKO Engineering**  
 144 PAUL BUNYAN DRIVE NW PO. BOX 785  
 MN/DJ, MN 55615  
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**BELTRAMI COUNTY SHOOTING SPORTS PARK**  
 SHOOTING RANGE CONSTRUCTION PLANS

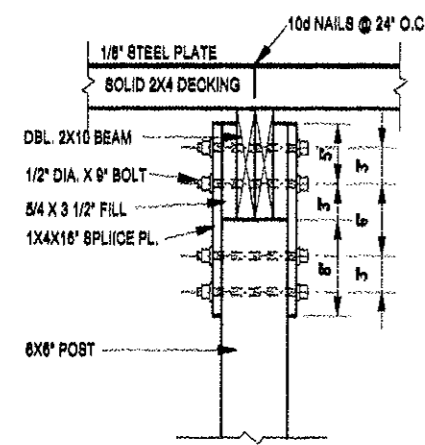
SKEET HOUSE & RIFLE RANGE FIRING LINE STRUCTURE DETAILS

DWG. NO. C0901 REV. C100

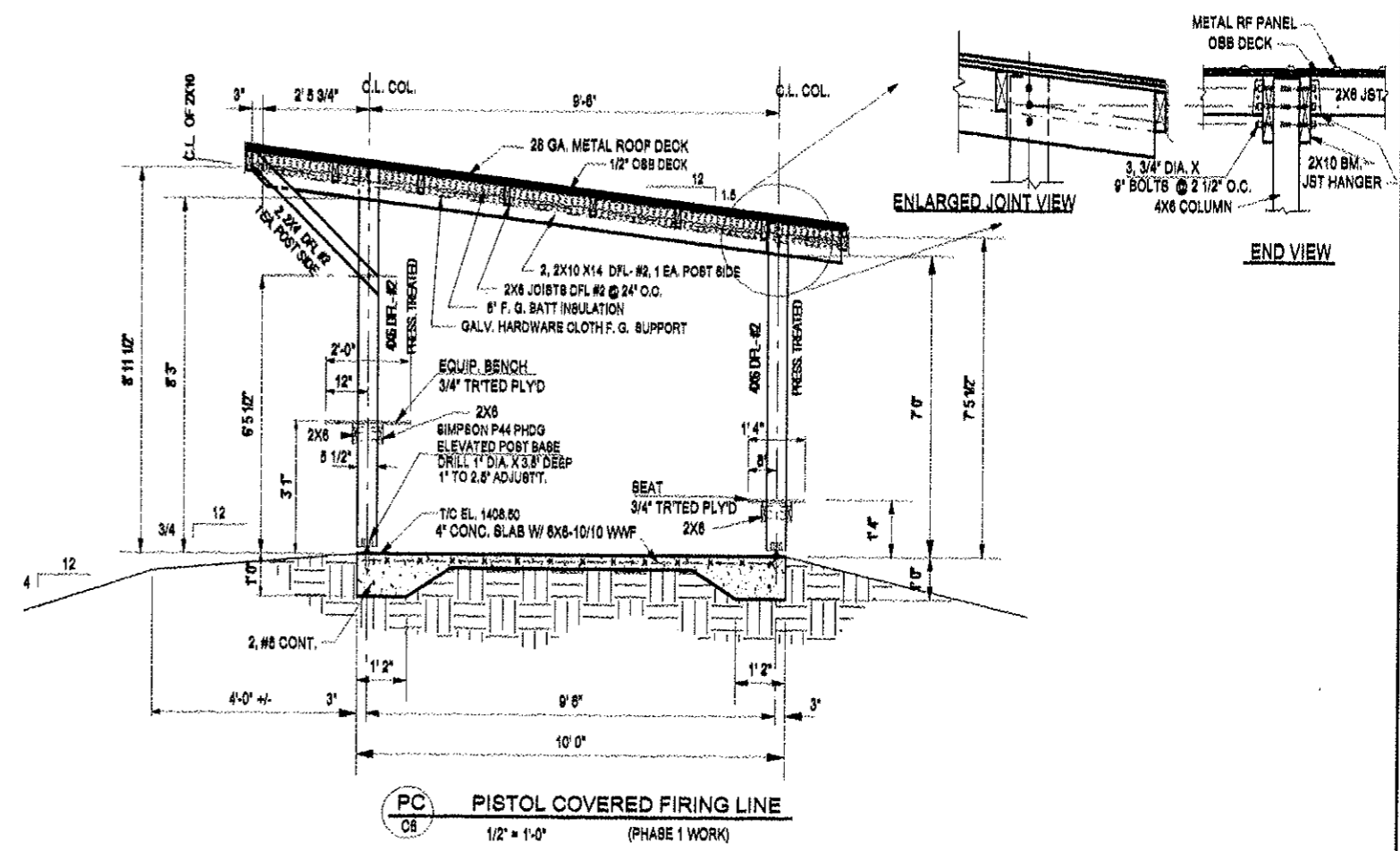
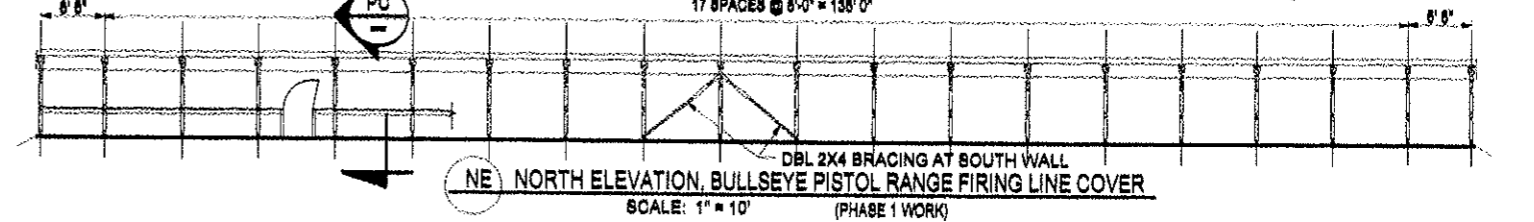
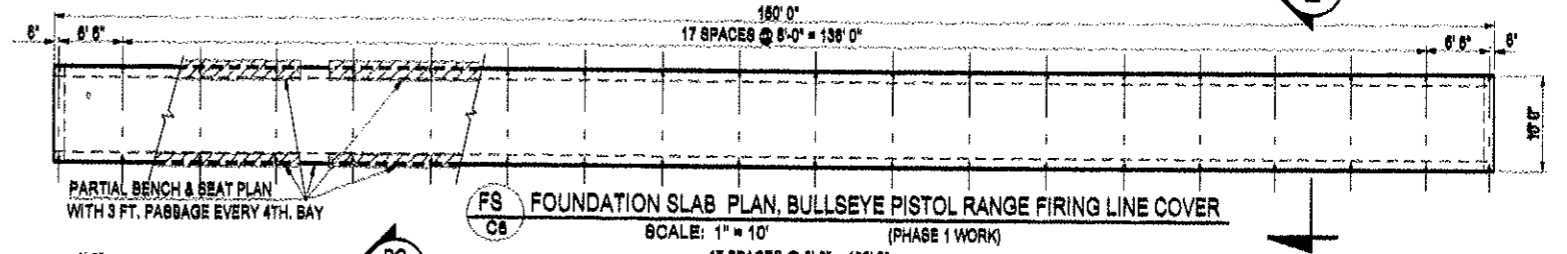
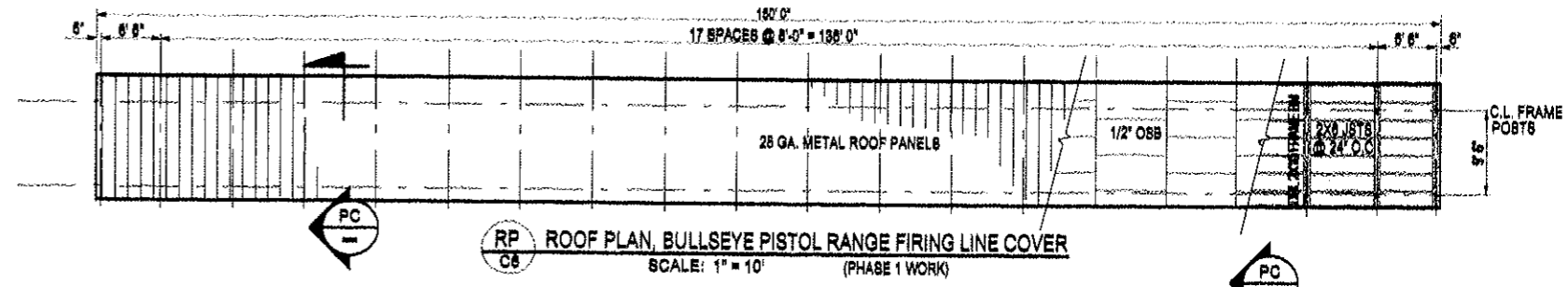


**BC** BULLET CATCHER DETAIL  
3/4" = 1'-0" MOUNT NEAR TOP OF BERM

BULLET CATCHERS REQUIRED FOR BOTH PHASE 1 AND PHASE 2 WORK  
SEE RANGE PLAN VIEWS, DWG. C3 THROUGH C6 FOR LOCATIONS  
SUGGESTED INSTALLATION PROCEDURE:  
1. BUILD UP BERM TO "CATCHER" BEARING ELEVATION.  
2. INSTALL POSTS & "CATCHER" STRUCTURE FROM BERM SURFACE  
3. COMPLETE BERM INSTALLATION

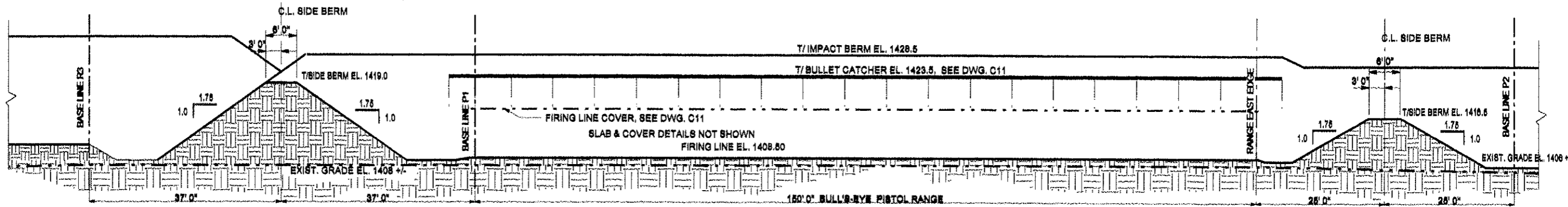


**CC** COLUMN CONNECTION DETAIL  
1 1/2" = 1'-0"

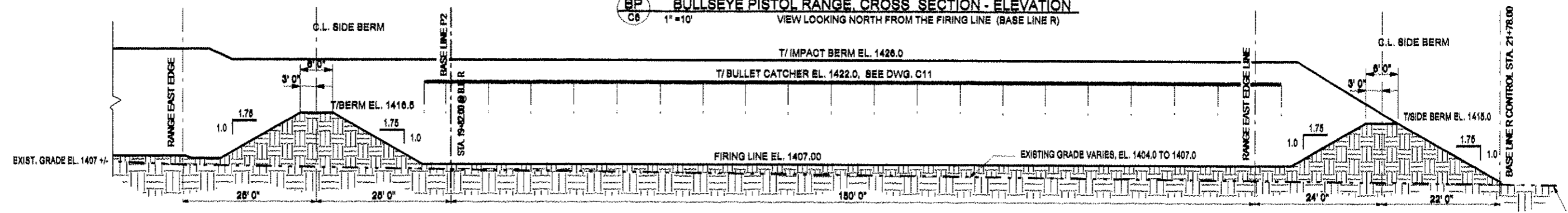


SEE DWG. C1 FOR GENERAL NOTES  
SCALE, AS NOTED FOR FULL (22" X 34") PRINTS

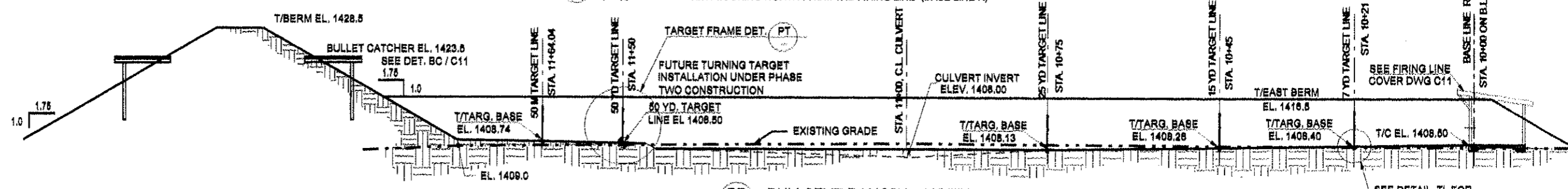
0	REV. 0 ISSUED FOR CONSTRUCTION	SCA	12/01/09	DESIGNED	SCA	I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION, AND THAT I AM A FULLY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	STUART C. ANDERSON REG. NO. 0721 DATE: 12/01/09	STUART ANDERSON PROFESSIONAL ENGINEERING SERVICES INC. 144 PAUL BUNYAN DRIVE NW P.O. BOX 785 MINNIDJII, MN. 56819 TEL. 218-246-2395	KARVAKKO Engineering 565 KARVAKKO DRIVE NW DEER RIVER, MN. 55315 TEL. 218-444-8004, FAX 218-444-8662	BELTRAMI COUNTY SHOOTING SPORTS PARK SHOOTING RANGE CONSTRUCTION PLANS IMPACT BERM BULLET CATCHER & BULL'S-EYE PISTOL RANGE STRUCTURE DETAILS	DWG. NO. C0901 REV. C11 0
B	ADDED PISTOL COVERED FIRING LINE	SCA	7/30/09	DRAWN	SCA						
A	ADDED BULLET CATCHER, REVISED SECTIONS	SCA	8/22/09	SCA	SCA						
P1	PRELIM. STUDY REVIEW ISSUE	SCA	8/27/09	DATE	JOB NO.						
NO.	REVISION DESCRIPTION	BY	APPR.	DATE	C0901						



**BP BULLSEYE PISTOL RANGE, CROSS SECTION - ELEVATION**  
 1" = 10'  
 VIEW LOOKING NORTH FROM THE FIRING LINE (BASE LINE R)

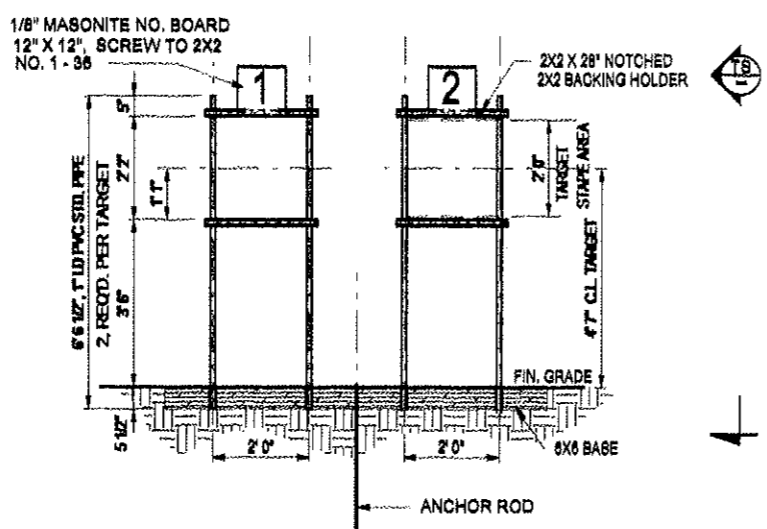


**PP PRACTICAL PISTOL RANGE, CROSS SECTION - ELEVATION**  
 1" = 10'  
 VIEW LOOKING NORTH FROM THE FIRING LINE (BASE LINE R)

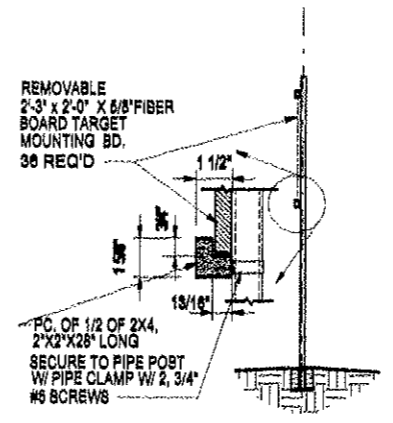


**BR BULLSEYE RANGE LONGITUDINAL SECTION - ELEVATION**  
 1" = 10'  
 VIEW LOOKING EAST FROM THE PISTOL BASE LINE P1

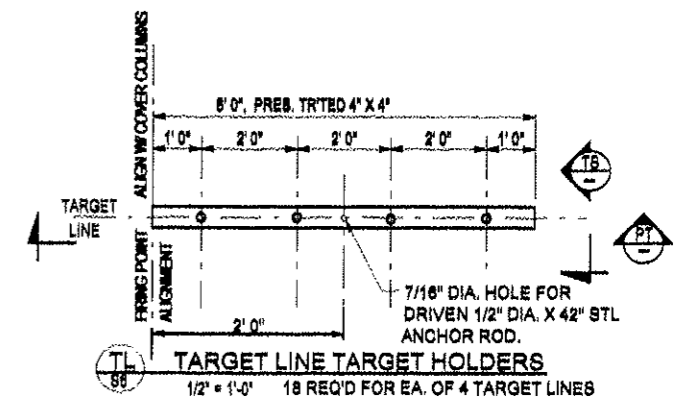
PRACTICAL PISTOL RANGE SIMILAR, WITHOUT DESIGNATED TARGET LINES AND COVER AT FIRING LINE.



**PT PISTOL TARGET FRAME ELEVATION VIEW**  
 1/2" = 1'-0"  
 36 TARGET FRAMES REQ'D.



**TS TARGET SIDE VIEW**  
 1/2" = 1'-0"



**TL TARGET LINE TARGET HOLDERS**  
 1/2" = 1'-0" 18 REQ'D FOR EA. OF 4 TARGET LINES

WORK THIS DRAWING WITH DWG. C0901-C8  
 SEE DWG. C1 FOR GENERAL NOTES  
 SCALE AS NOTED FOR FULL SIZE (22" X 34") PRINT

NO.	REVISION DESCRIPTION	BY	APPR.	DATE
0	ISSUED FOR CONSTRUCTION	SCA	SCA	12/01/09
B	GENERAL REVISION	SCA	SCA	7/7/09
A	ISSUED FOR APPROVAL	SCA	SCA	5/27/09
P1	PRELIM. STUDY REVIEW ISSUE	SCA	SCA	3/2/09

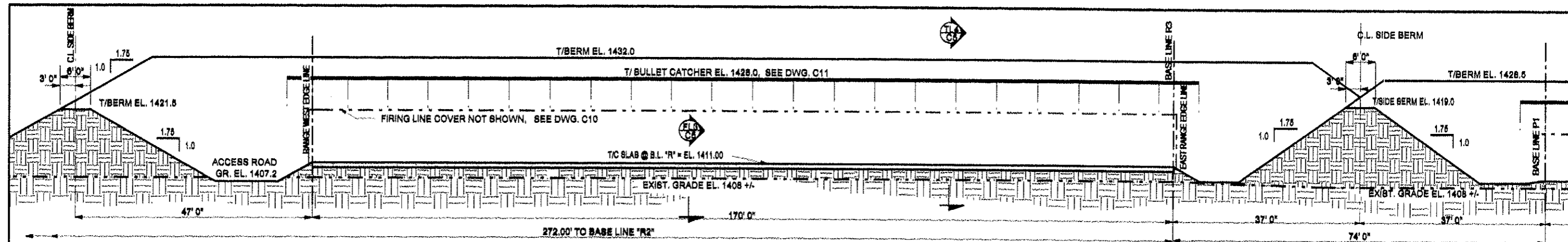
DESIGNED: SCA  
 CHECKED: SCA  
 DRAWN: SCA  
 DATE: 12/01/09  
 JOB NO.: C0901  
 I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION, AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 STUART O. ANDERSON  
 REG. NO. 0721  
 DATE: 12/01/09

STUART O. ANDERSON  
 PROFESSIONAL ENGINEERING SERVICES INC.  
 TEL 218-248-2395  
 35540 CO. RD. 235, DEER RIVER, MN

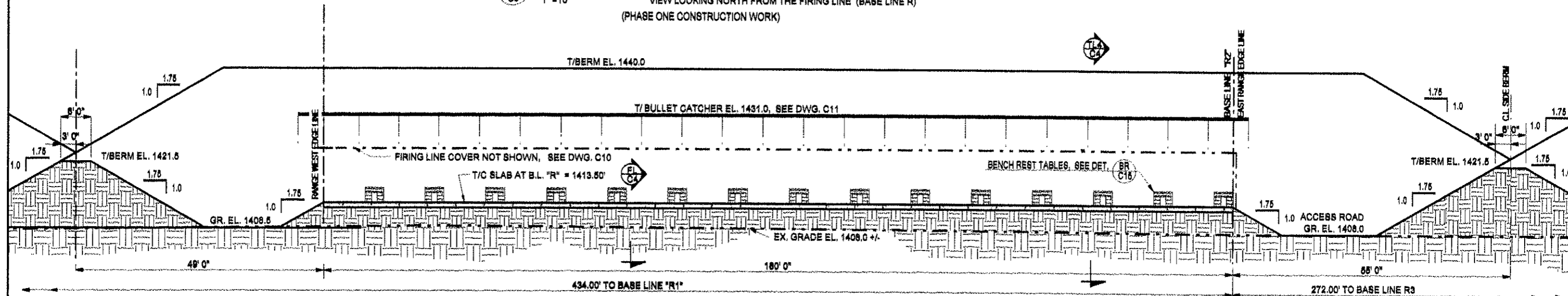
KARVAKKO Engineering  
 144 PAUL BUNYAN DRIVE NW, P.O. BOX 786  
 BEMIDJIE, MN 56610  
 TEL. 218-444-8004, FAX 218-444-8882

BELTRAMI COUNTY SHOOTING SPORTS PARK  
 SHOOTING RANGE CONSTRUCTION PLANS  
 50 YARD PISTOL RANGE SECTION-ELEVATIONS AND DETAILS

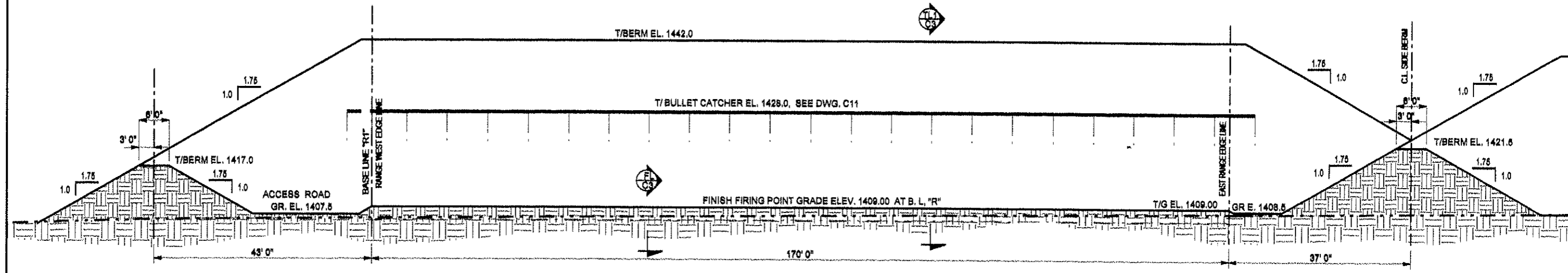
DWG. NO. C0901  
 REV. C120



**SB** SMALL BORE RIFLE RANGE CROSS SECTION-ELEVATION  
 C3 1"=10'  
 VIEW LOOKING NORTH FROM THE FIRING LINE (BASE LINE R)  
 (PHASE ONE CONSTRUCTION WORK)



**BR** BENCH REST (200 YD. HI-POWER) RIFLE RANGE CROSS SECTION-ELEVATION  
 C4 1"=10'  
 VIEW LOOKING NORTH FROM THE FIRING LINE (BASE LINE R)  
 (PHASE TWO CONSTRUCTION WORK)



**LR** LONG RANGE HI-POWER RIFLE RANGE CROSS SECTION-ELEVATION  
 C3 1"=10'  
 VIEW LOOKING NORTH FROM THE FIRING LINE (BASE LINE R)  
 (PHASE TWO CONSTRUCTION WORK)

WORK THIS DRAWING WITH DWGS. C0901-C3, C4 & C5  
 SEE DWG. C1 FOR GENERAL NOTES  
 SCALE AS NOTED FOR FULL SIZE (22" X 34") PRINT

NO.	REVISION DESCRIPTION	BY	APPR.	DATE
0	ISSUED FOR CONSTRUCTION	SCA	SCA	12/01/09
B	GENERAL REVISION & NEW VIEWS	SCA	SCA	7/8/08
A	ISSUED FOR APPROVAL	SCA	SCA	5/27/09
P1	PRELIM. STUDY REVIEW ISSUE	SCA	SCA	9/2/09

DESIGNED	CHECKED	DRAWN	APPR'D	DATE	JOB NO.
SCA	SCA	SCA	SCA	12/01/09	C0901

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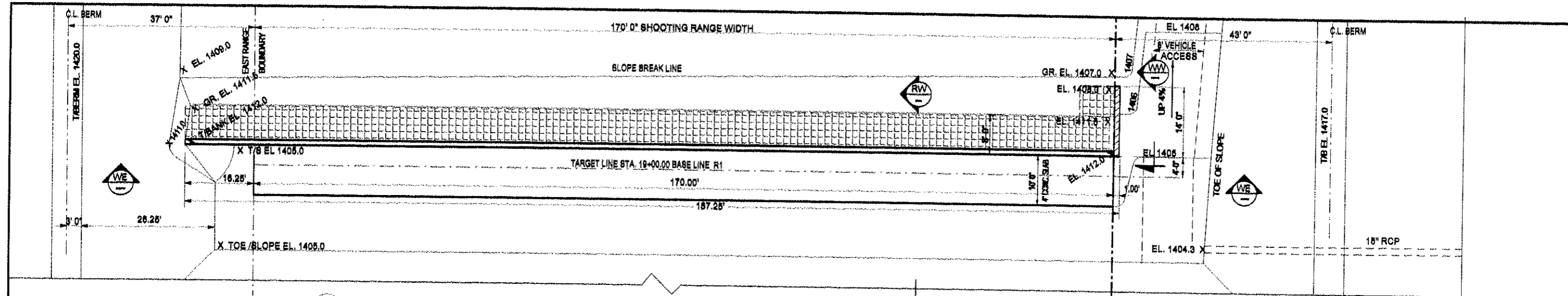
*Stuart O. Anderson*  
 STUART O. ANDERSON REG. NO. 8721 DATE: 12/01/09

**STUART ANDERSON PROFESSIONAL ENGINEERING SERVICES INC.**  
 144 PAUL BUNYAN DRIVE NW, P.O. BOX 785  
 BECIDJ, MN. 55812  
 TEL. 218-248-2398  
 35840 CO. RD. 238, DEER RIVER, MN  
 TEL. 218-444-8004, FAX 218-444-8662

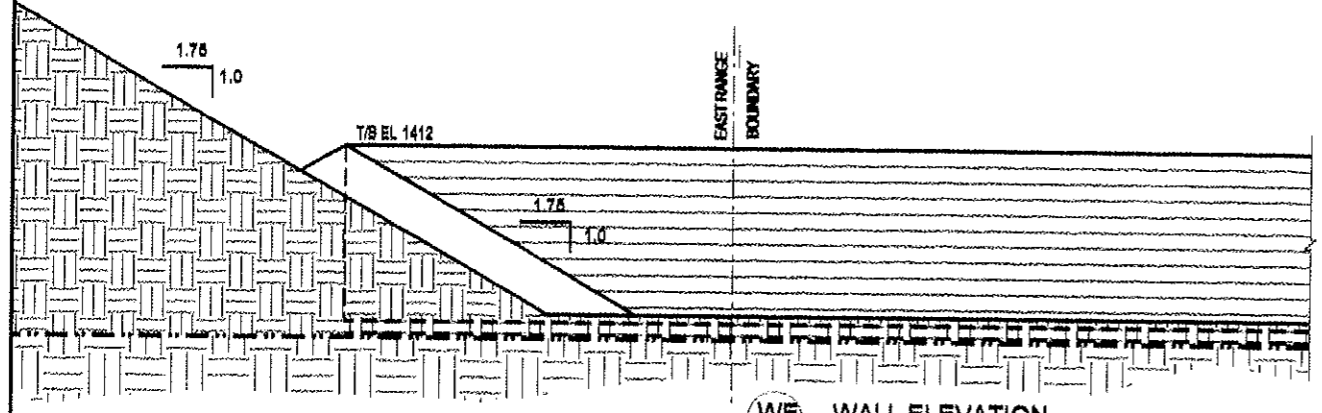
**KARVAKKO Engineering**  
 144 PAUL BUNYAN DRIVE NW, P.O. BOX 785  
 BECIDJ, MN. 55812  
 TEL. 218-444-8004, FAX 218-444-8662

**BELTRAMI COUNTY SHOOTING SPORTS PARK**  
 SHOOTING RANGE CONSTRUCTION PLANS  
 RIFLE RANGE CROSS SECTION-ELEVATION VIEWS FROM THE FIRING LINE

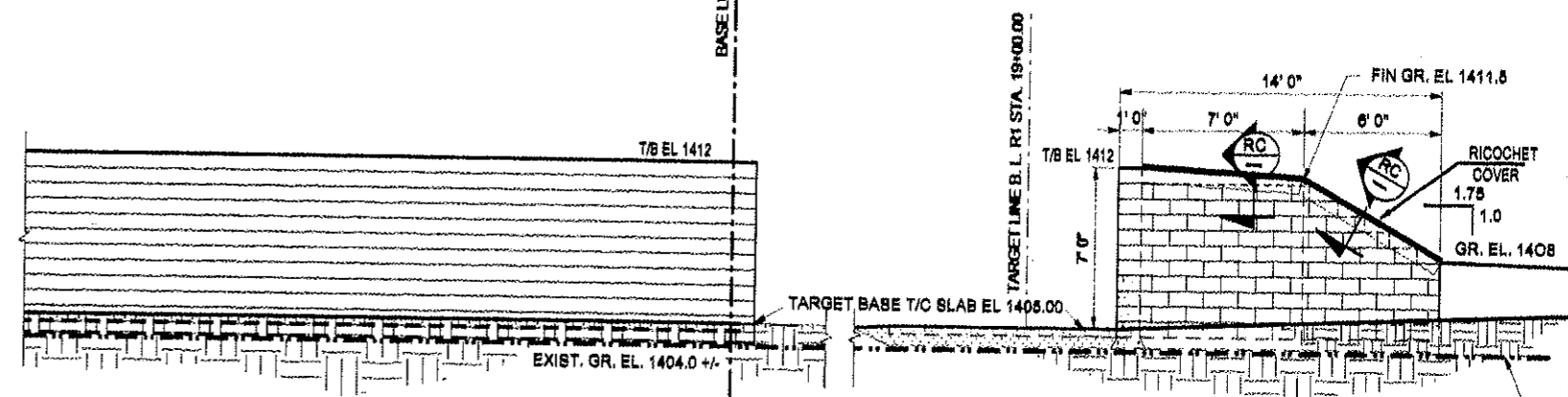
DWG. NO. C0901  
 REV. C130



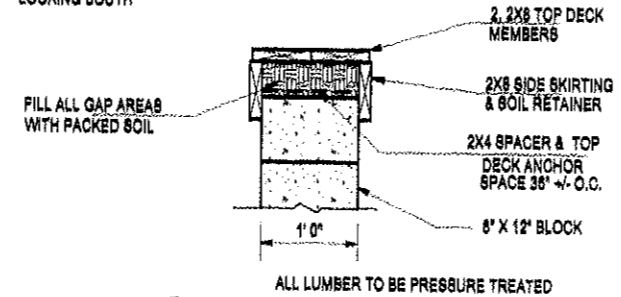
**PV PLAN VIEW OF TARGET PIT & RETAINING WALL AT 300 YD. RIFLE RANGE**  
1" = 10'



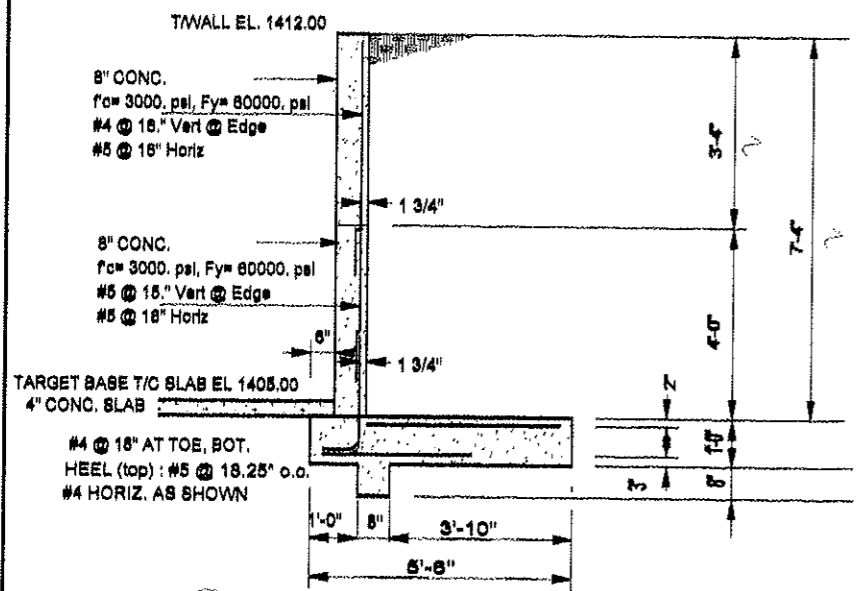
**WE WALL ELEVATION**  
1/4" = 1'-0" LOOKING SOUTH



**WW WEST WALL ELEVATION**  
1/4" = 1'-0" VIEW LOOKING EAST

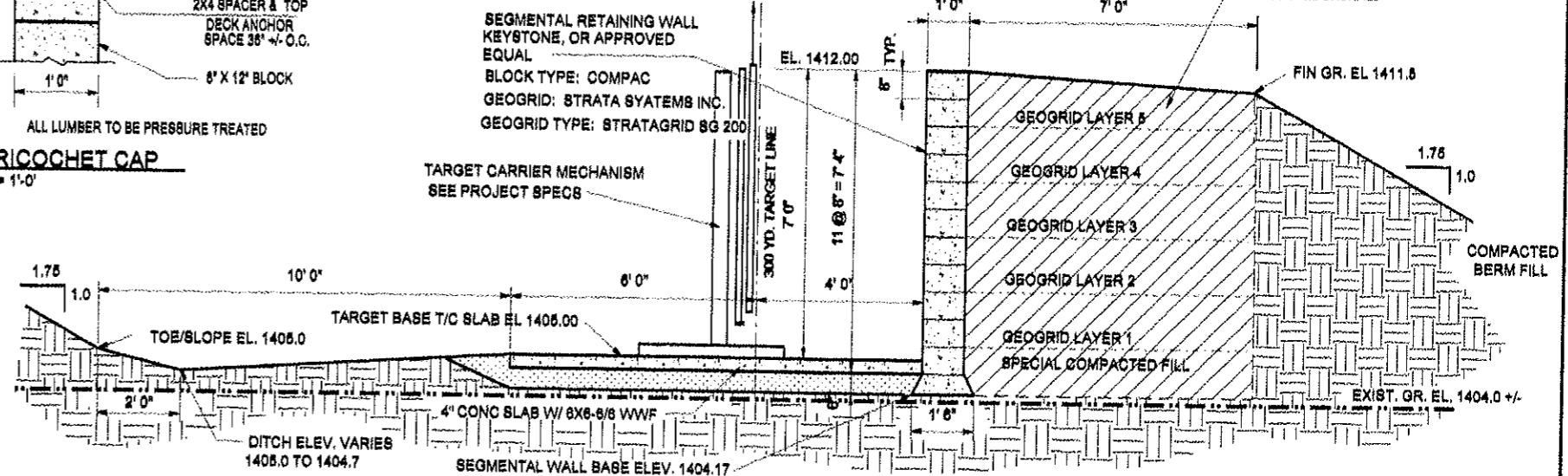


**RC RICOCHET CAP**  
1" = 1'-0"



**AC ALTERNATE CONCRETE RETAINING WALL**  
Scale: 1/4" = 1'-0"

ALTERNATE AT CONTRACTOR'S OPTION, INSTEAD OF SEGMENTAL MASONRY WALL



**RW RETAINING WALL TYPICAL SECTION**  
1/2" = 1'-0" VIEW LOOKING EAST

WORK THIS DRAWING WITH DWGS. C0901-C3, C16  
SEE DWG. C1 FOR GENERAL NOTES  
SCALE AS NOTED FOR FULL SIZE (22" X 34") PRINT  
ALL DETAILS ON THIS DRAWING ARE FOR PHASE TWO CONSTRUCTION WORK

NO.	REVISION DESCRIPTION	BY	APPR.	DATE
D	ISSUED FOR CONSTRUCTION	SCA	SCA	12/01/09
B	GENERAL REVISION & NEW VIEWS	SCA	SCA	7/11/09
A	ISSUED FOR APPROVAL	SCA	SCA	

DESIGNED: SCA  
CHECKED: SCA  
DRAWN: SCA  
DATE: 12/01/09  
JOB NO.: C0901

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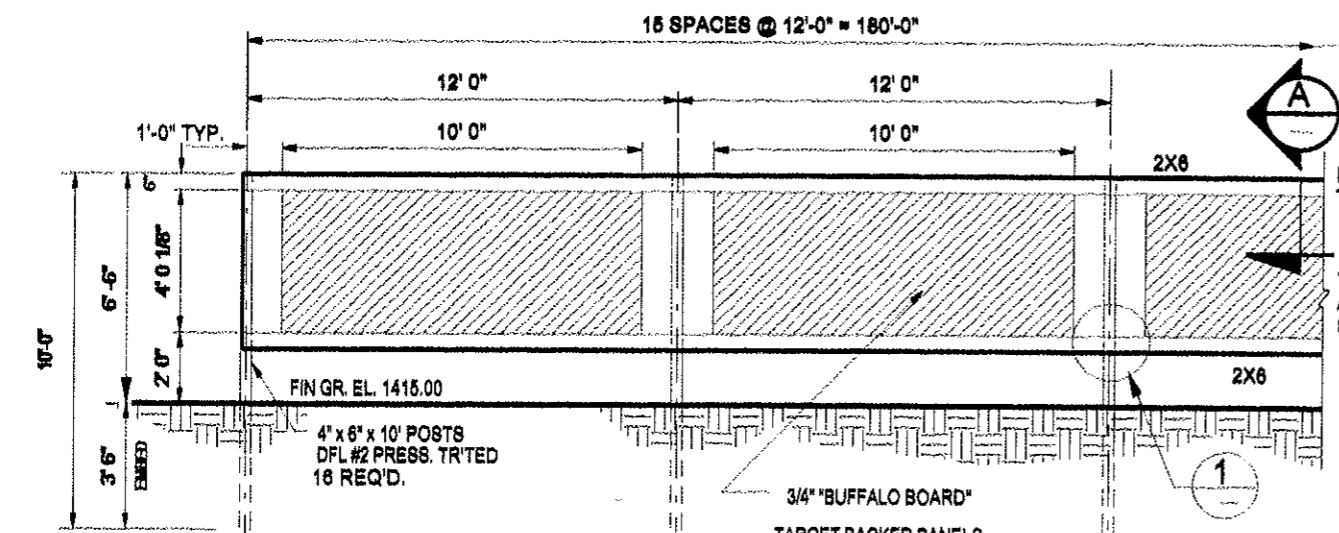
STUART C. ANDERSON REG. NO. 6721 DATE: 12/01/09

STUART ANDERSON  
**SAPES**  
PROFESSIONAL ENGINEERING SERVICES INC.  
144 PAUL BUNYAN DRIVE NW, P.O. BOX 755  
BEMIDJII, MN. 56619  
TEL. 218-248-2398

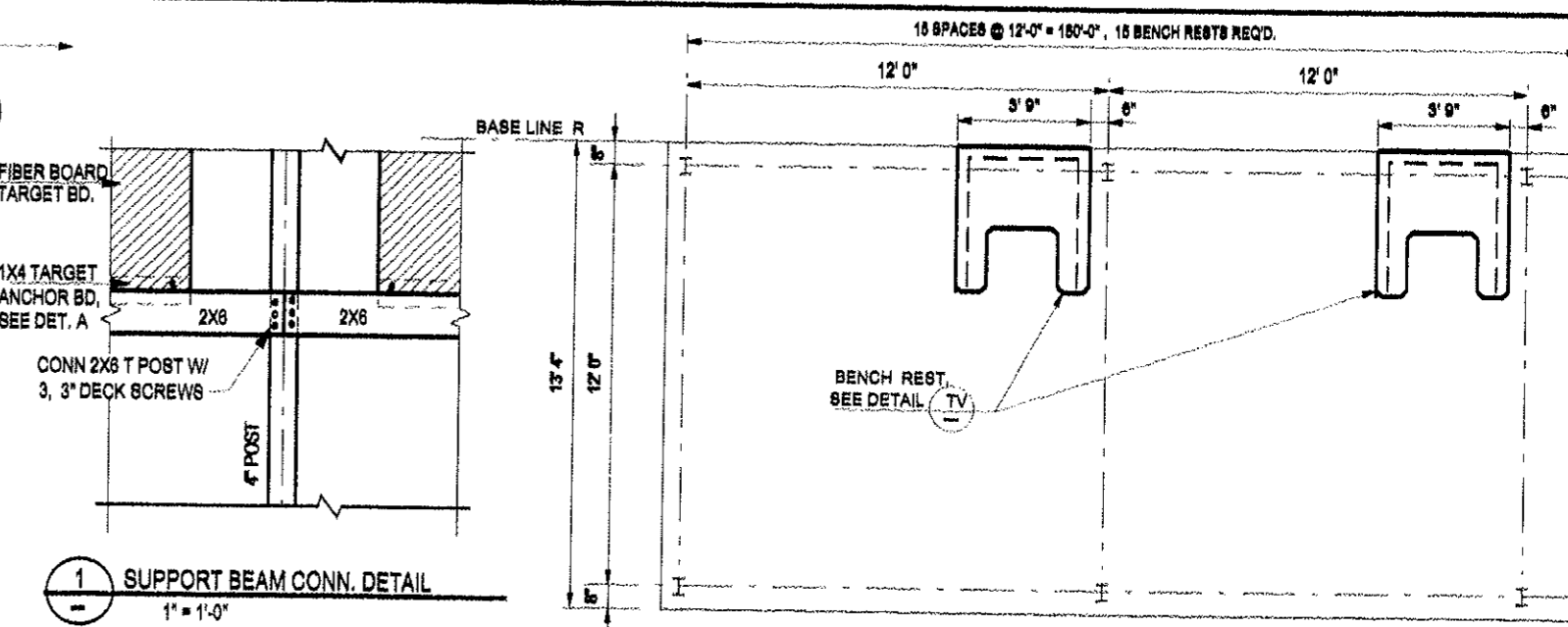
**KARVAKKO Engineering**  
144 PAUL BUNYAN DRIVE NW, P.O. BOX 755  
BEMIDJII, MN. 56619  
TEL. 218-444-8004, FAX 218-444-8802

**BELTRAMI COUNTY SHOOTING SPORTS PARK**  
SHOOTING RANGE CONSTRUCTION PLANS  
RIFLE RANGE PIT RETAINING WALL & MISCELLANEOUS DETAILS

DWG. NO. C0901  
REV. C140

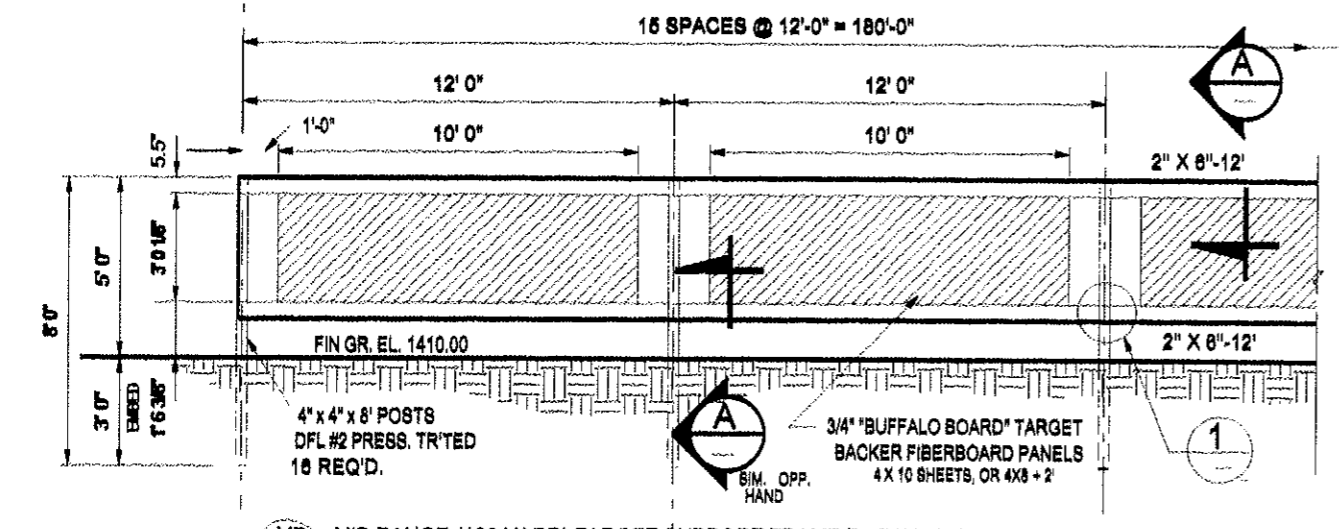


**FR FULL RANGE (200 YARD) TARGET SUPPORT FRAME ELEVATION**  
3/8" = 1'-0"

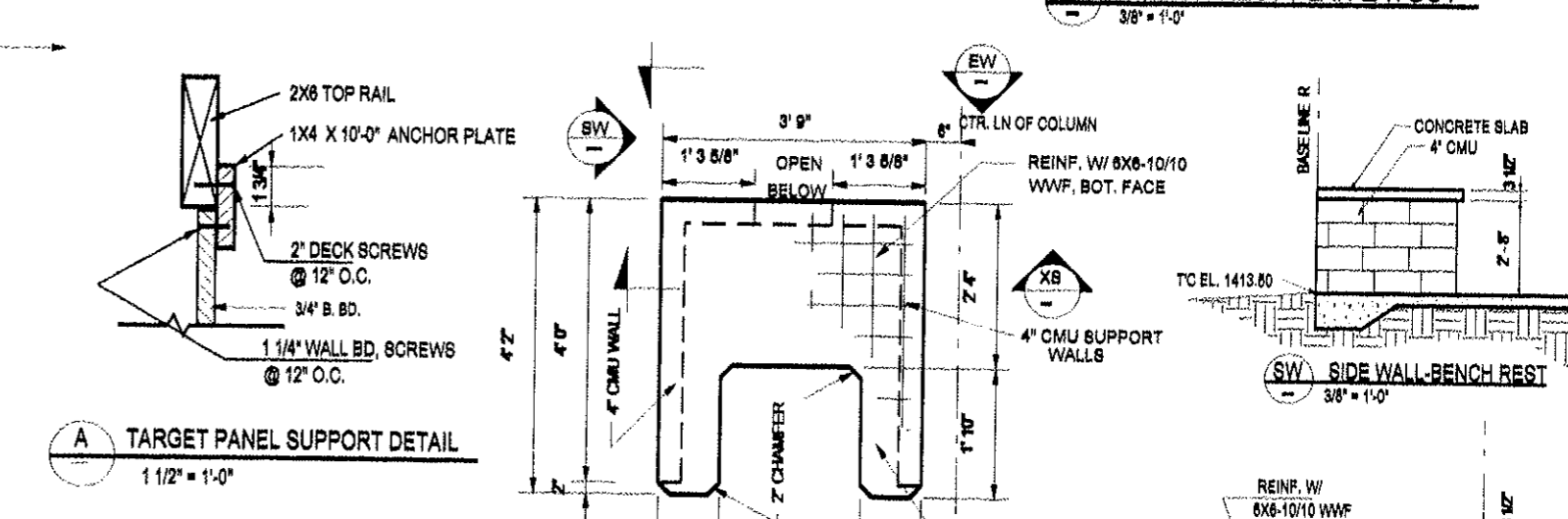


**1 SUPPORT BEAM CONN. DETAIL**  
1" = 1'-0"

**BR BENCH REST PLAN LAYOUT**  
3/8" = 1'-0"



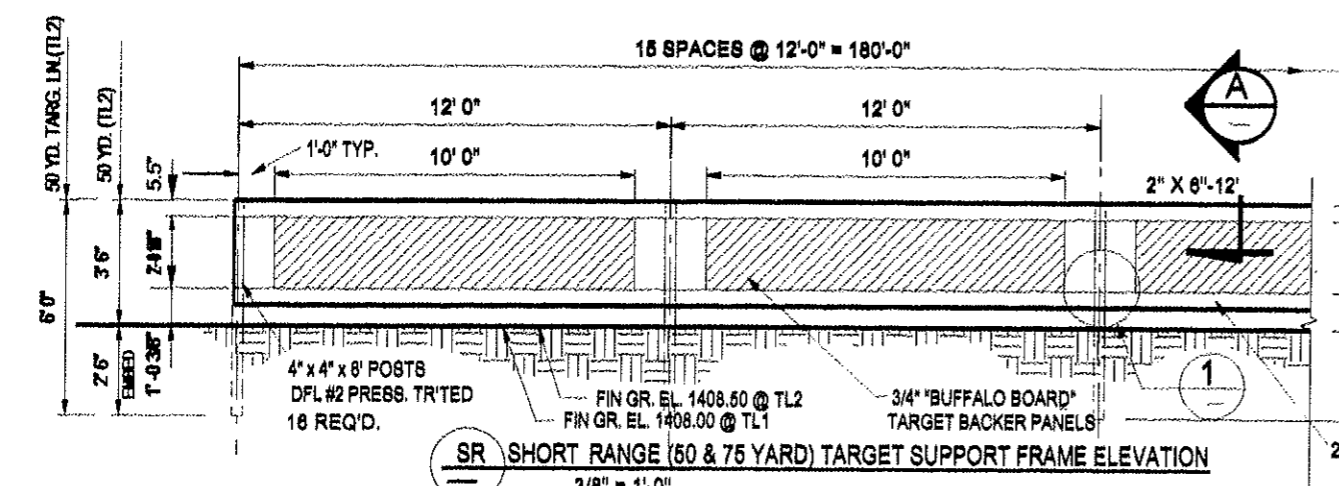
**MR MID RANGE (100 YARD) TARGET SUPPORT FRAME ELEVATION**  
3/8" = 1'-0"



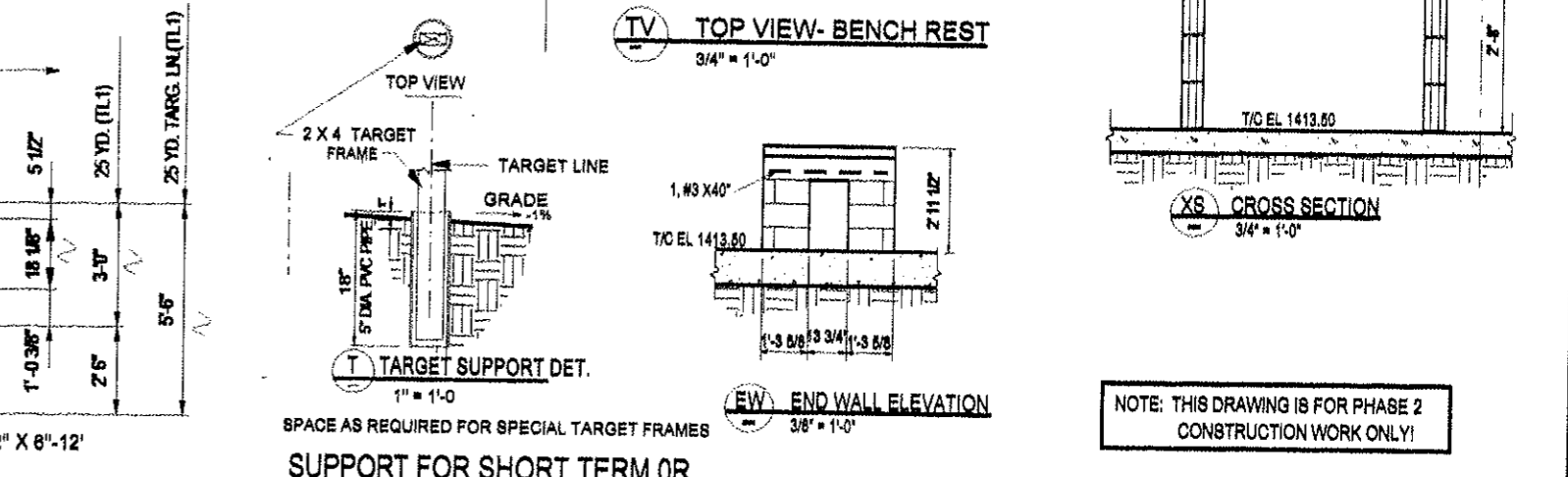
**A TARGET PANEL SUPPORT DETAIL**  
1 1/2" = 1'-0"

**SW SIDE WALL-BENCH REST**  
3/8" = 1'-0"

**XS CROSS SECTION**  
3/4" = 1'-0"



**SR SHORT RANGE (50 & 75 YARD) TARGET SUPPORT FRAME ELEVATION**  
3/8" = 1'-0"



**TV TOP VIEW-BENCH REST**  
3/4" = 1'-0"

**T TARGET SUPPORT DET.**  
1" = 1'-0"

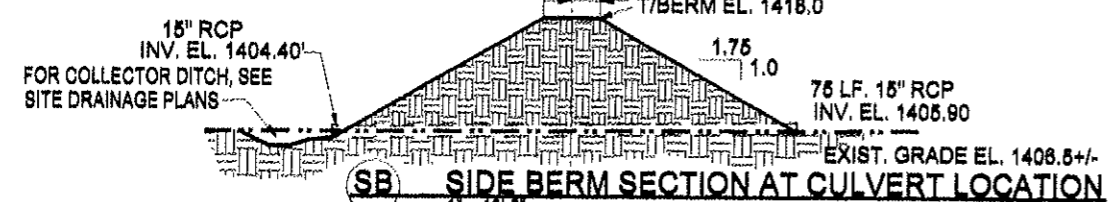
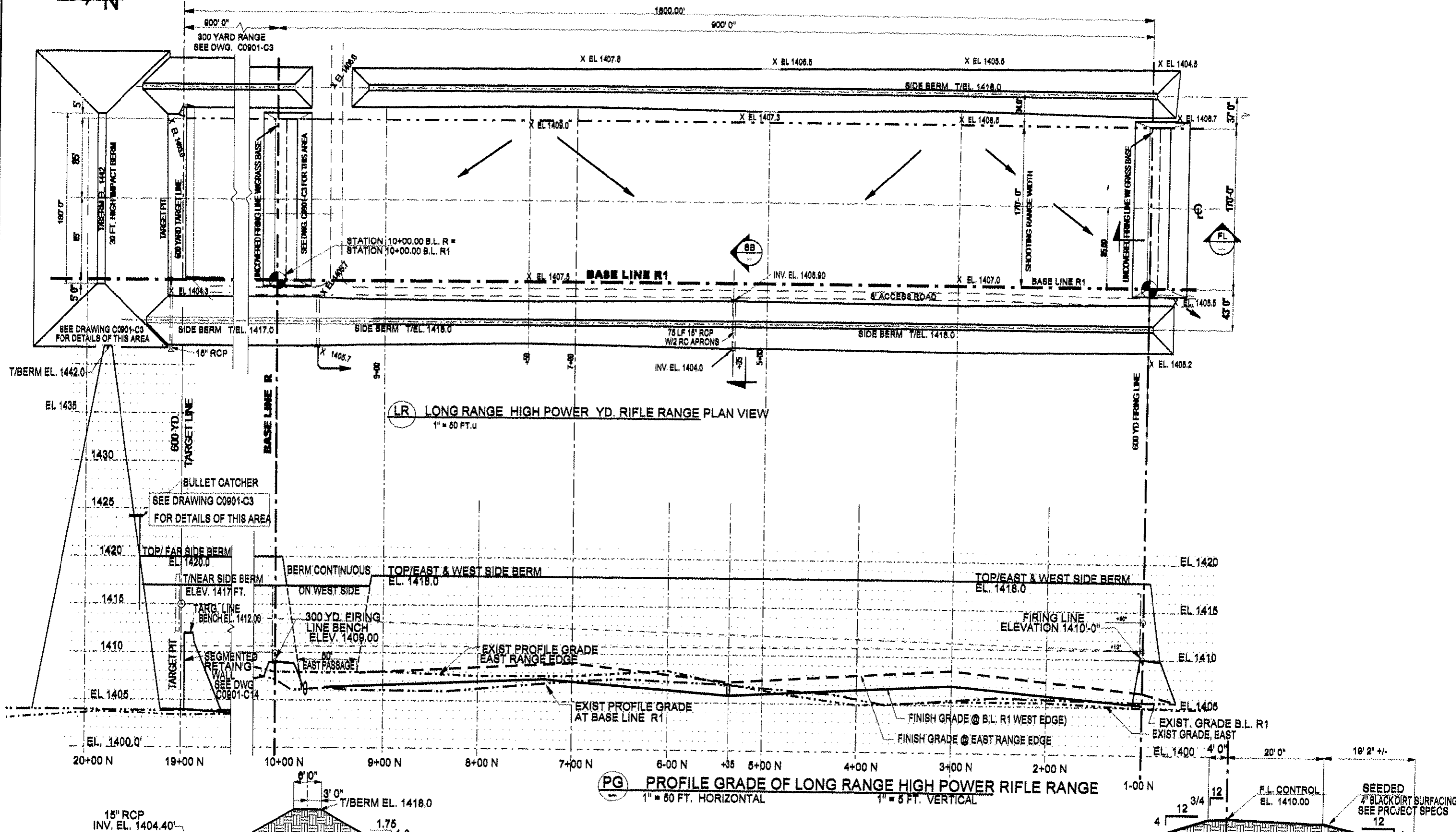
**EW END WALL ELEVATION**  
3/8" = 1'-0"

NOTE: THIS DRAWING IS FOR PHASE 2 CONSTRUCTION WORK ONLY!

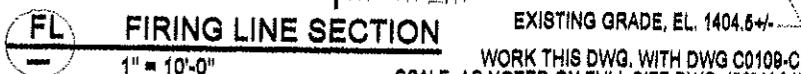
WORK THIS DRAWING WITH DWGB. C0901-C4  
SEE DWG. C1 FOR GENERAL NOTES  
SCALE AS NOTED FOR FULL SIZE (22" X 34") PRINT

DESIGNED SCA	CHECKED SCA	I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION, AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.		STUART ANDERSON PROFESSIONAL ENGINEERING SERVICES, INC. 144 PAUL BUNYAN DRIVE NW, P.O. BOX 755 MINNIDJI, MN, 55819 TEL. 218-246-2306 TEL. 218-444-8004, FAX 218-444-8662	KARVAKKO Engineering 144 PAUL BUNYAN DRIVE NW, P.O. BOX 755 MINNIDJI, MN, 55819 TEL. 218-444-8004, FAX 218-444-8662	BELTRAMI COUNTY SHOOTING SPORTS PARK SHOOTING RANGE CONSTRUCTION PLANS	MISCELLANEOUS SHOOTING RANGE DETAILS	DWG. NO. C0901 REV. C150
DATE 11/30/09	JOB NO. C0901	DATE 11/30/09	DATE 11/30/09					
ISSUED FOR CONSTRUCTION	SCA	11/30/09						
ISSUED FOR APPROVAL	SCA							
REVISION DESCRIPTION	BY	APPR.	DATE					





NOTE: THIS DRAWING IS FOR PHASE 2 CONSTRUCTION WORK ONLY!



NO.	REVISION DESCRIPTION	BY	APPR.	DATE
0	ISSUED FOR CONSTRUCTION	SCA	SCA	11/30/09
B	REV. WIDTH TO FIT BERM REQ'TS.	SCA	SCA	7/7/09
A	ISSUED FOR APPROVAL	SCA	SCA	5/27/09
P1	PRELIM. STUDY REVIEW ISSUE	SCA	SCA	3/2/09

DESIGNED: SCA  
 CHECKED: SCA  
 DRAWN: SCA  
 APPROV: SCA  
 DATE: 11/30/09  
 JOB NO.: C0901

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STUART S. ANDERSON REG. NO. 5781 DATE

STUART S. ANDERSON  
 PROFESSIONAL ENGINEER  
 SERVICES INC.  
 35840 CO. RD. 258, DEER RIVER, MN

KARVAKKO Engineering  
 144 PAUL BUNYAN DRIVE, WYLLIAC, MN 55519  
 TEL 218-248-2398  
 TEL 218-444-8004, FAX 218-444-8602

BELTRAMI COUNTY SHOOTING SPORTS PARK  
 SHOOTING RANGE CONSTRUCTION PLANS  
 600 YD. RANGE, 300 YD. EXTENSION TO THE 300 YD. RANGE PLAN & PROFILE

DWG. NO. C0901  
 REV. C160

WORK THIS DWG. WITH DWG C0109-C9  
 SCALE, AS NOTED ON FULL SIZE DWG. (22" X 34")