

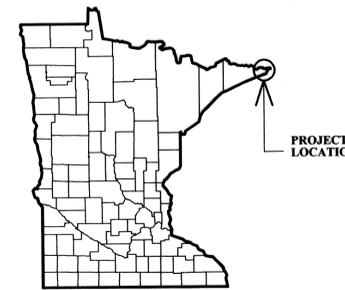
# GRAND PORTAGE STATE PARK VISITOR CENTER / MN DOT REST AREA

MINNESOTA DEPARTMENT OF NATURAL RESOURCES

Division Of Parks And Recreation

MINNESOTA DEPARTMENT OF TRANSPORTATION

GRAND PORTAGE OJIBWE



LOCATION MAP

## SHEET INDEX

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### Management Resources

- Safety
- Facilities
- Materials
- Equipment
- Field Operations
- Information Management

### DNR Division of Parks and Recreation

#### Grand Portage State Park

Visitor's Center  
MN DOT Rest Area

Cook County Near Grand Portage  
Section: 30 Township: 64 N Range: 07 E



Aerial View of Site Area at Grand Portage State Park

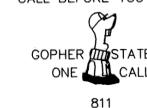
### Project Description:

The new facility is intended to serve as a welcoming gateway to Grand Portage, the North Shore, the State Park System, Minnesota and the United States.

It will provide visitor orientation, travel information, a year round public rest area, natural resources interpretation, a state wide resource for interpretation of Ojibwe cultural history, and new park offices.

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S2.00	PILE AND GRADE BEAM PLAN
S2.01	FOUNDATION AND SLAB PLAN
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E9.01	ELECTRICAL ELECTRICAL DETAILS AND DIAGRAMS
E9.02	ELECTRICAL ELECTRICAL DETAILS AND DIAGRAMS

CALL BEFORE YOU DIG



VERIFY ALL DIMENSIONS AND LOCATIONS ON THE JOB. REPORT ALL DISCREPANCIES TO MANAGEMENT RESOURCES

DO NOT SCALE DRAWINGS

### CODA Information - For DNR/DOT Use Only:

MN DNR Building ID Number: 20902		MN DOT Building ID Number: 95125				
DNR Building Type						
Building Attributes	Dimensions	Gross Sq. Footage	Unfinished Sq. Footage	Foundation Structure	Support Structure	Dimensions
	138' x 86'-4"	6000	0	Conc. Slab	Wd/Sil Framing	138' x 86'-4"
Building Envelope	Roof types	Roof Area	Exterior Siding types			
	Metal	Wood/Stone	Wood/Stone			
HVAC System	Heating Unit types	BTU's	Fuel Source	Cooling		
	Elec / GeoT	Elec / GeoT	Elec	Elec / GeoT		
Mechanical System	Water Heater type	Tank Size	Plumbing	Fire Sprinkled	Water Treatment	
	Elec	40 Gal	Y	N	N	
Electrical System	Service Size	Service Phase	Service Voltage	Interior Lighting	Exterior Lighting	
	400 amp	3	120/240	Fluor/Inc	MH	
Safety	ADA Compliance	Smoke Detector	CO2 Detector			
	Y	N	N			

### Design Team:

Civil Engineer:  
MNDNR Management Resources  
Region 3 - Brainerd  
1601 Minnesota Drive  
Brainerd, MN 56401-0030

Architect:  
Landscape Architect:

MNDNR Management Resources  
Central Office - St. Paul  
500 Lafayette Road  
St. Paul, MN 55155-4016

Structural Engineering:  
Mechanical Engineering:  
Electrical Engineering:

LHB, Inc.  
21 West Superior Street  
Suite 500  
Duluth, MN 55802

### Code Summary:

1) Code Resources	2006 International Building Code 2006 Minnesota Building Code 2006 Minnesota Energy Code 2000 International Plumbing Code
2) Description:	New 6000 sf multi-use center 2915 sf office/interpretive 2135 sf toilet/mechanical 950 sf retail/storage
3) Type V-A Construction (1 hour rated)	
4) Mixed Occupancy:	Group A-3 2915 sf occupied Lobby 1110 sf Interpretive Area 1805 sf 2135 unoccupied Toilet Rooms 785 sf Mechanical Room 1350 sf Group B 950 sf occupied Office/Gift 800 sf Storage 150 sf

5) Occupant Load:	Group A-3 583 Group B 11 Total Occupancy 594		
6) Energy:	Envelope Design 41% better than Code		
	U-Factor		
Envelope Values	R Value	Proposed	Required
Roof assembly 1	85.84	.012	.035
Roof assembly 2	85.35	.012	.035
Skylight	6.8	.156	.035
Wall assembly 1	36.63	.027	.050
Wall assembly 2	35.83	.028	.050
Wall assembly 3	33.56	.030	.050
Wall assembly 4	118.0	.008	.050
Alum Storefront	3.4	.028	.050
Insulated doors	9.31	.107	.092
Glazing	3.4	.0294	.520

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Name: Peter K. Paulson  
Date: 1/26/2009

Reg. Number: 20131  
Survey: \_\_\_\_\_ Design: \_\_\_\_\_  
Drawn: \_\_\_\_\_ Drawn: \_\_\_\_\_  
Checked: \_\_\_\_\_ Checked: \_\_\_\_\_  
Hors datum: \_\_\_\_\_  
Vert datum: \_\_\_\_\_

### DOT Approval

Recommended For Approval: *[Signature]* 2/10/09  
Recommended For Approval: *[Signature]* 2/10/09  
Recommended For Approval: *[Signature]* 2/2/09  
Approved: 2/2/2009 *[Signature]* 2/2/09  
District Engineer

### DNR Approval

Title: *[Signature]* 3/1/09  
Date: 3/1/09  
Division of Parks and Recreation  
Recommended For Approval: *[Signature]* 3/1/09  
Approved: 3/1/09 *[Signature]* 3/1/09  
District Engineer

### Title Sheet

Title: T-1  
Sheet: \_\_\_\_\_  
Reg. Number: HP070090  
File Number: SPK00173.00.73.52



**Management Resources**  
 Safety  
 Facilities  
 Materials  
 Equipment  
 Field Operations  
 Information Management

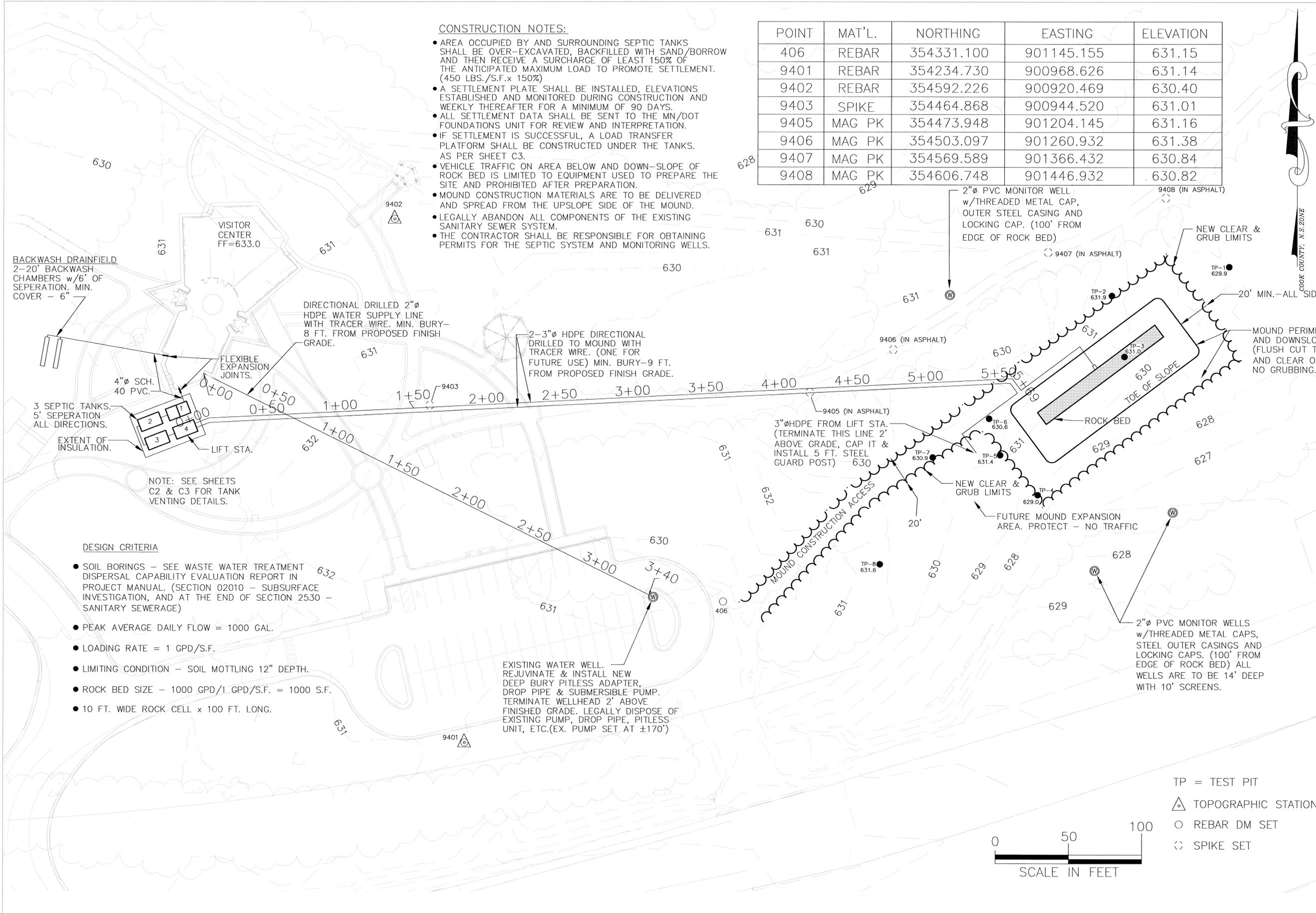
**DNR Division of Parks & Recreation**  
**Grand Portage State Park**  
 Visitor's Center  
 MN DOT Rest Area

Cook County Near Grand Portage  
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**CONSTRUCTION NOTES:**

- AREA OCCUPIED BY AND SURROUNDING SEPTIC TANKS SHALL BE OVER-EXCAVATED, BACKFILLED WITH SAND/BORROW AND THEN RECEIVE A SURCHARGE OF LEAST 150% OF THE ANTICIPATED MAXIMUM LOAD TO PROMOTE SETTLEMENT. (450 LBS./S.F. x 150%)
- A SETTLEMENT PLATE SHALL BE INSTALLED, ELEVATIONS ESTABLISHED AND MONITORED DURING CONSTRUCTION AND WEEKLY THEREAFTER FOR A MINIMUM OF 90 DAYS.
- ALL SETTLEMENT DATA SHALL BE SENT TO THE MN/DOT FOUNDATIONS UNIT FOR REVIEW AND INTERPRETATION.
- IF SETTLEMENT IS SUCCESSFUL, A LOAD TRANSFER PLATFORM SHALL BE CONSTRUCTED UNDER THE TANKS, AS PER SHEET C3.
- VEHICLE TRAFFIC ON AREA BELOW AND DOWN-SLOPE OF ROCK BED IS LIMITED TO EQUIPMENT USED TO PREPARE THE SITE AND PROHIBITED AFTER PREPARATION.
- MOUND CONSTRUCTION MATERIALS ARE TO BE DELIVERED AND SPREAD FROM THE UPSLOPE SIDE OF THE MOUND.
- LEGALLY ABANDON ALL COMPONENTS OF THE EXISTING SANITARY SEWER SYSTEM.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING PERMITS FOR THE SEPTIC SYSTEM AND MONITORING WELLS.

POINT	MAT'L.	NORTHING	EASTING	ELEVATION
406	REBAR	354331.100	901145.155	631.15
9401	REBAR	354234.730	900968.626	631.14
9402	REBAR	354592.226	900920.469	630.40
9403	SPIKE	354464.868	900944.520	631.01
9405	MAG PK	354473.948	901204.145	631.16
9406	MAG PK	354503.097	901260.932	631.38
9407	MAG PK	354569.589	901366.432	630.84
9408	MAG PK	354606.748	901446.932	630.82



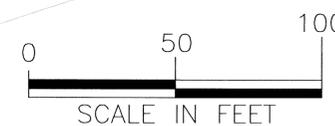
**DESIGN CRITERIA**

- SOIL BORINGS - SEE WASTE WATER TREATMENT DISPERSAL CAPABILITY EVALUATION REPORT IN PROJECT MANUAL. (SECTION 02010 - SUBSURFACE INVESTIGATION, AND AT THE END OF SECTION 2530 - SANITARY SEWERAGE)
- PEAK AVERAGE DAILY FLOW = 1000 GAL.
- LOADING RATE = 1 GPD/S.F.
- LIMITING CONDITION - SOIL MOTTLING 12" DEPTH.
- ROCK BED SIZE - 1000 GPD/1 GPD/S.F. = 1000 S.F.
- 10 FT. WIDE ROCK CELL x 100 FT. LONG.

EXISTING WATER WELL. REJUVINATE & INSTALL NEW DEEP BURY PITLESS ADAPTER, DROP PIPE & SUBMERSIBLE PUMP. TERMINATE WELLHEAD 2' ABOVE FINISHED GRADE. LEGALLY DISPOSE OF EXISTING PUMP, DROP PIPE, PITLESS UNIT, ETC.(EX. PUMP SET AT ±170')

2"Ø PVC MONITOR WELLS w/THREADED METAL CAPS, STEEL OUTER CASINGS AND LOCKING CAPS. (100' FROM EDGE OF ROCK BED) ALL WELLS ARE TO BE 14' DEEP WITH 10' SCREENS.

- TP = TEST PIT
- △ TOPOGRAPHIC STATION
- REBAR DM SET
- ◊ SPIKE SET



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.

Name: *David B. Sobania*  
 DAVID B. SOBANIA

Date: 3/3/09

Reg Number: 22844

Survey: J.D. WALKER/DEC 2005 Designed: D.B. SOBANIA  
 Drawn: J.L. FLEISHER/JAN 2006 Drawn: D.C. NELSON  
 Checked: J.D. WALKER/JAN 2006 Checked: D.B. SOBANIA  
 Horiz datum: NAD 83, 96 ADJ  
 Vert datum: NGVD 1929

**SITE PLAN**

Title: **C1**

Sheet: **C1**  
 Req Number: HP070090  
 File Number: SPK00173.00.73.52



**Management Resources**

- Safety
- Facilities
- Materials
- Equipment
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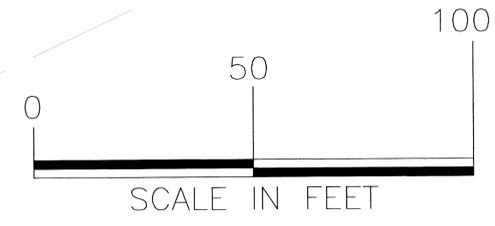
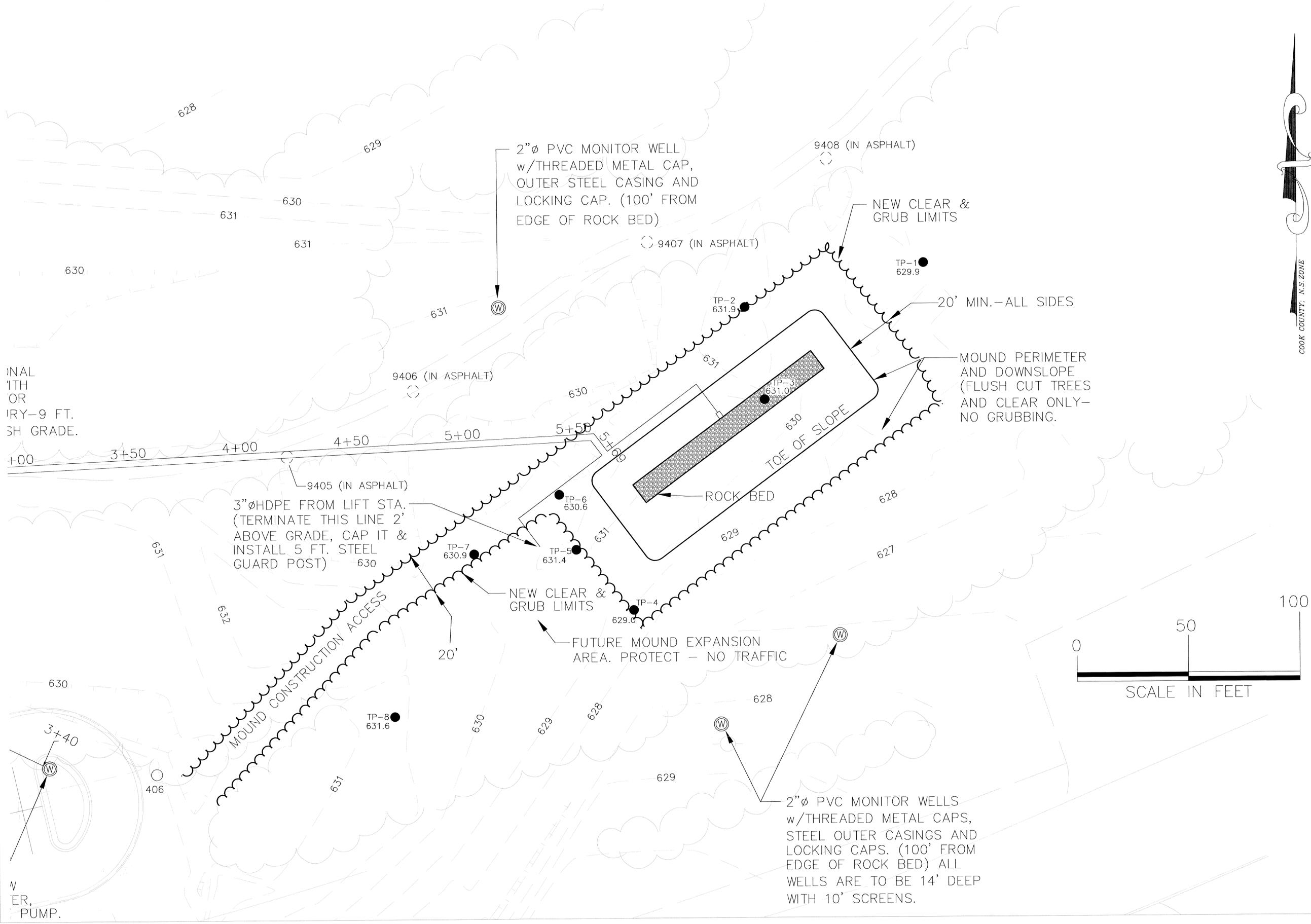
**DNR Division of Parks & Recreation**

**Grand Portage State Park**

Visitor's Center  
MN DOT Rest Area

Cook County Near Grand Portage  
Sector: 30 Township: 64 N Range: 7 E

COOK COUNTY, N.S. ZONE



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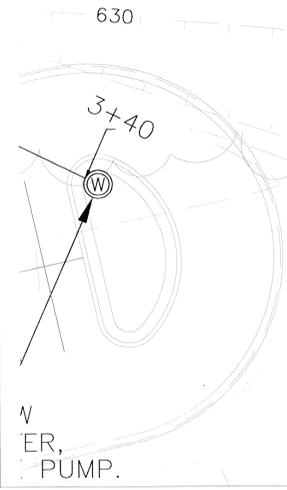
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**MOUND PLAN**

Sheet: **C4**  
Req. Number: HP070090  
File Number: SPK00173.00.73.52





**Management Resources**

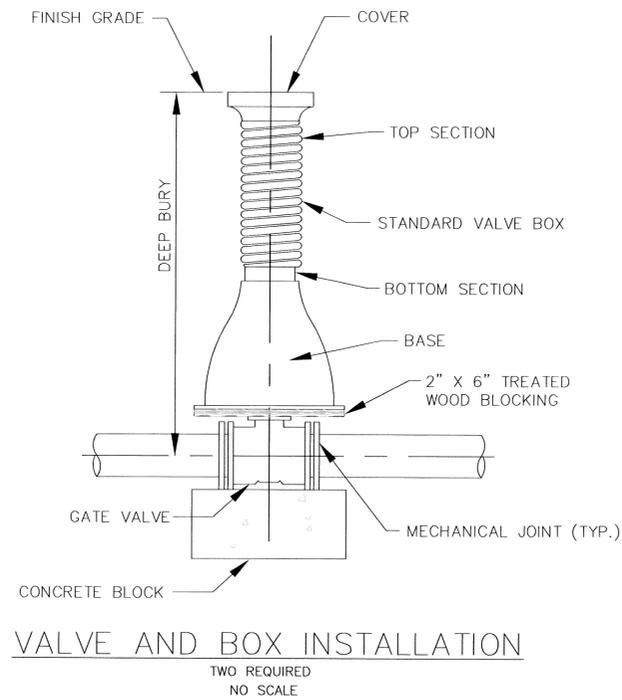
Safety  
Facilities  
Materials  
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**DNR Division of Parks & Recreation**

**Grand Portage State Park**

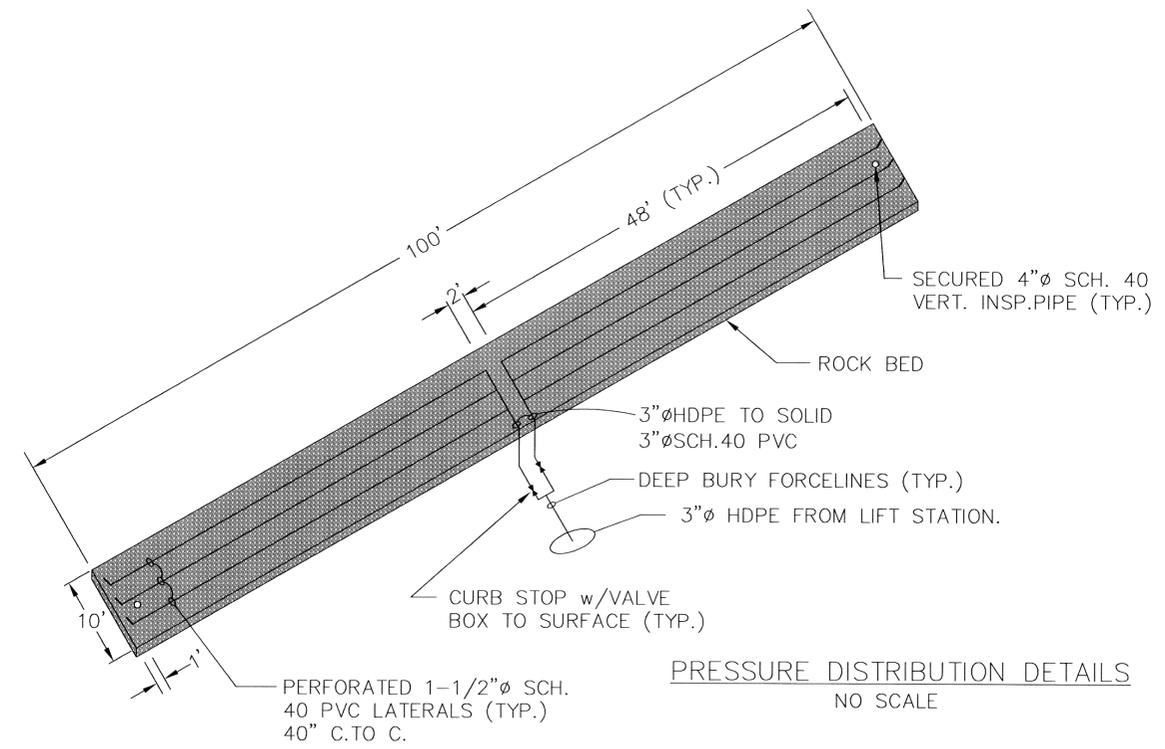
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**VALVE AND BOX INSTALLATION**

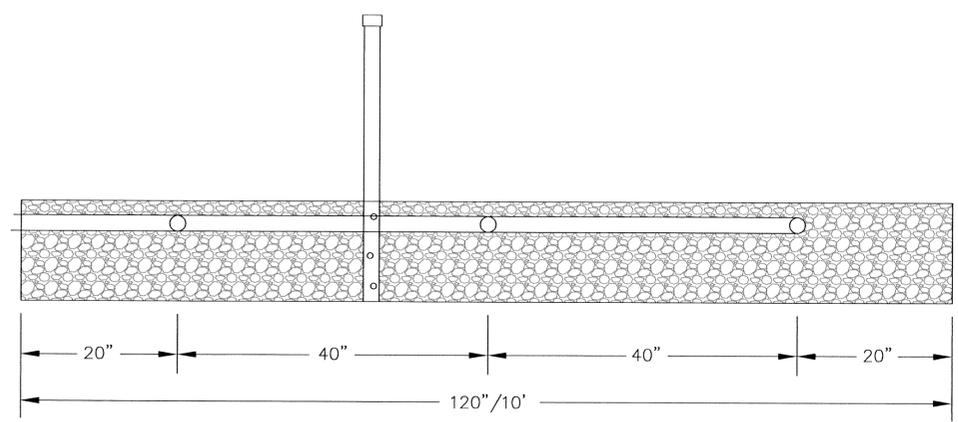
TWO REQUIRED  
NO SCALE



**PRESSURE DISTRIBUTION DETAILS**

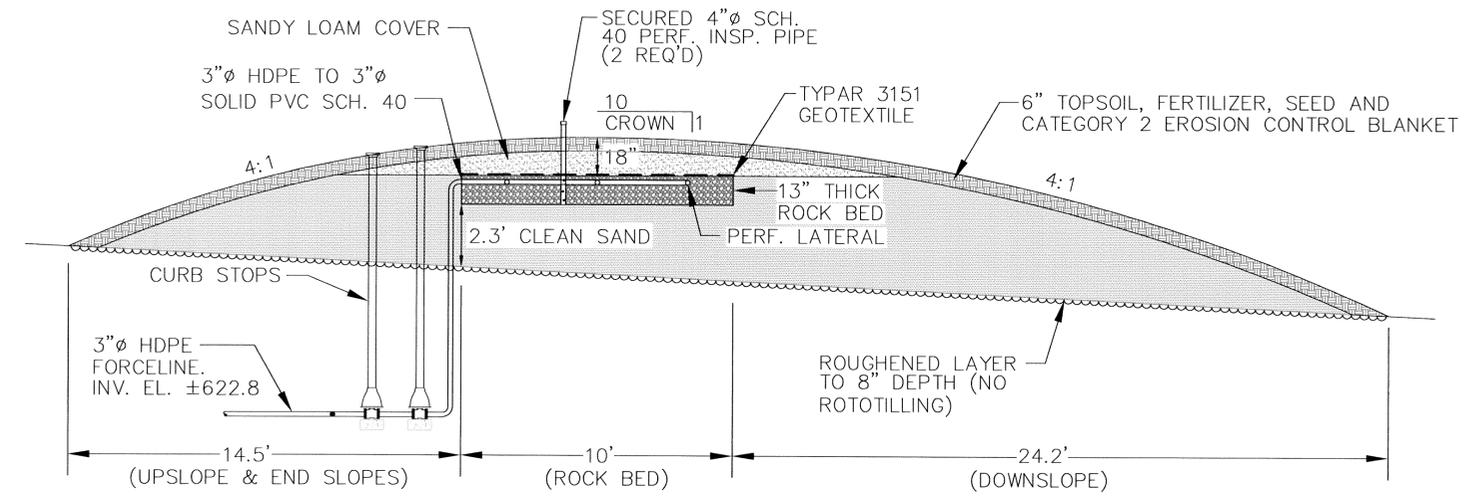
NO SCALE

- NOTES:
1. LATERALS SHALL HAVE 3/16"Ø PERFORATIONS AND EACH SHALL BE COVERED WITH AN ORIFICE SHIELD.
  2. THERE SHALL BE 17 PERFORATIONS PER LATERAL, 3 FT. SPACING
  3. 48 L.F. OF PIPE REQUIRED PER LATERAL.
  4. THE ENDS OF LATERALS SHALL HAVE SWEEPING CLEANOUTS w/SCREW CAPS 4" ABOVE GRADE.



**ROCK CELL SPACING**

NO SCALE



NOTE: CLEANOUTS NOT SHOWN.

**MOUND DETAILS**

NO SCALE

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DAVID B. SOBANIA

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**MOUND DETAILS**

Title:  
**C5**  
Sheet:  
Req Number: HP070090  
File Number: SPK00173.00.73.52



**Management Resources**

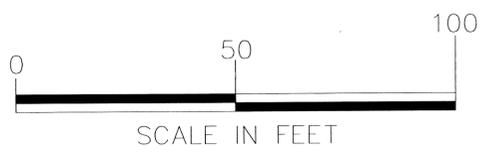
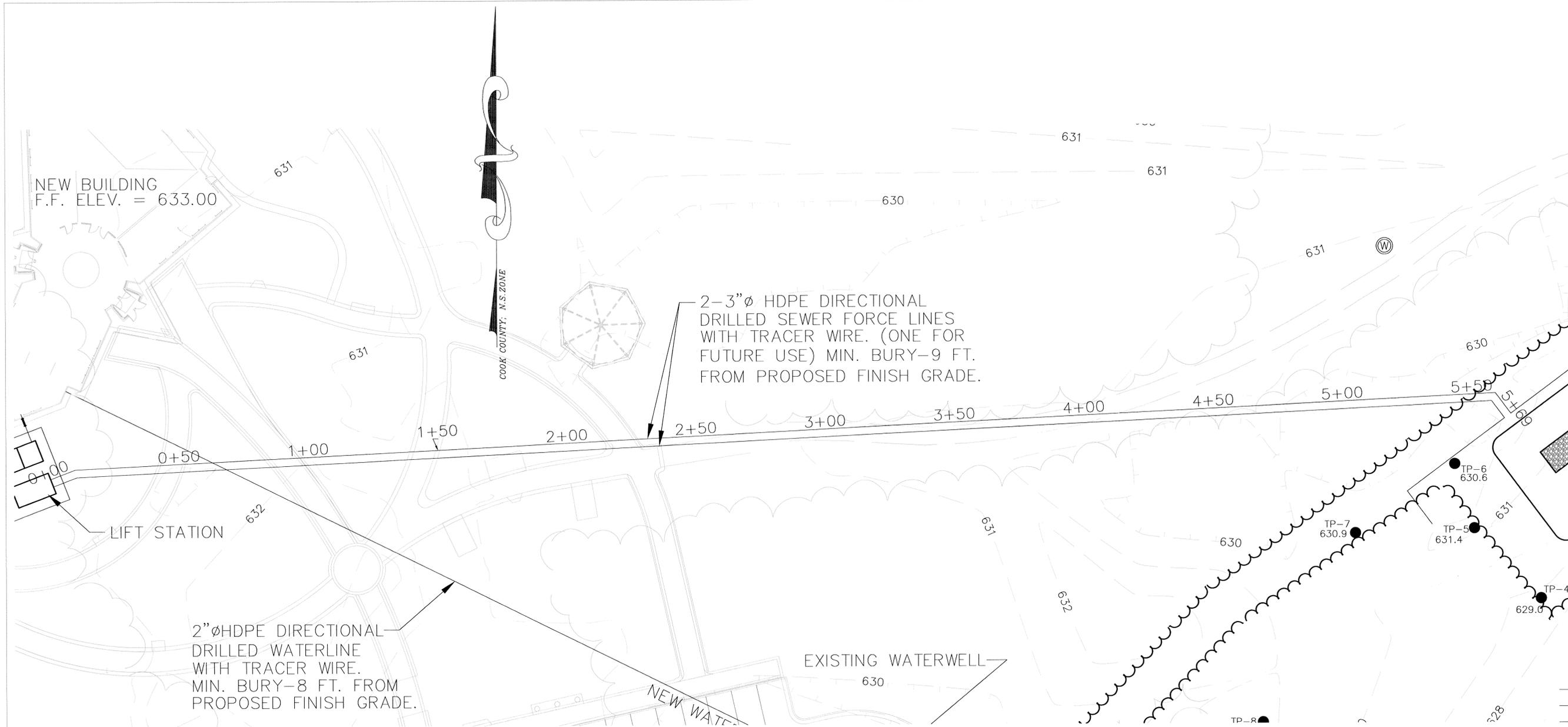
- Safety
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**DNR Division of Parks & Recreation**

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Name: *David Sobania*  
DAVID B. SOBANIA

Date: 3/2/09

Reg. Number: 22844

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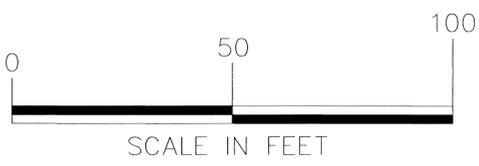
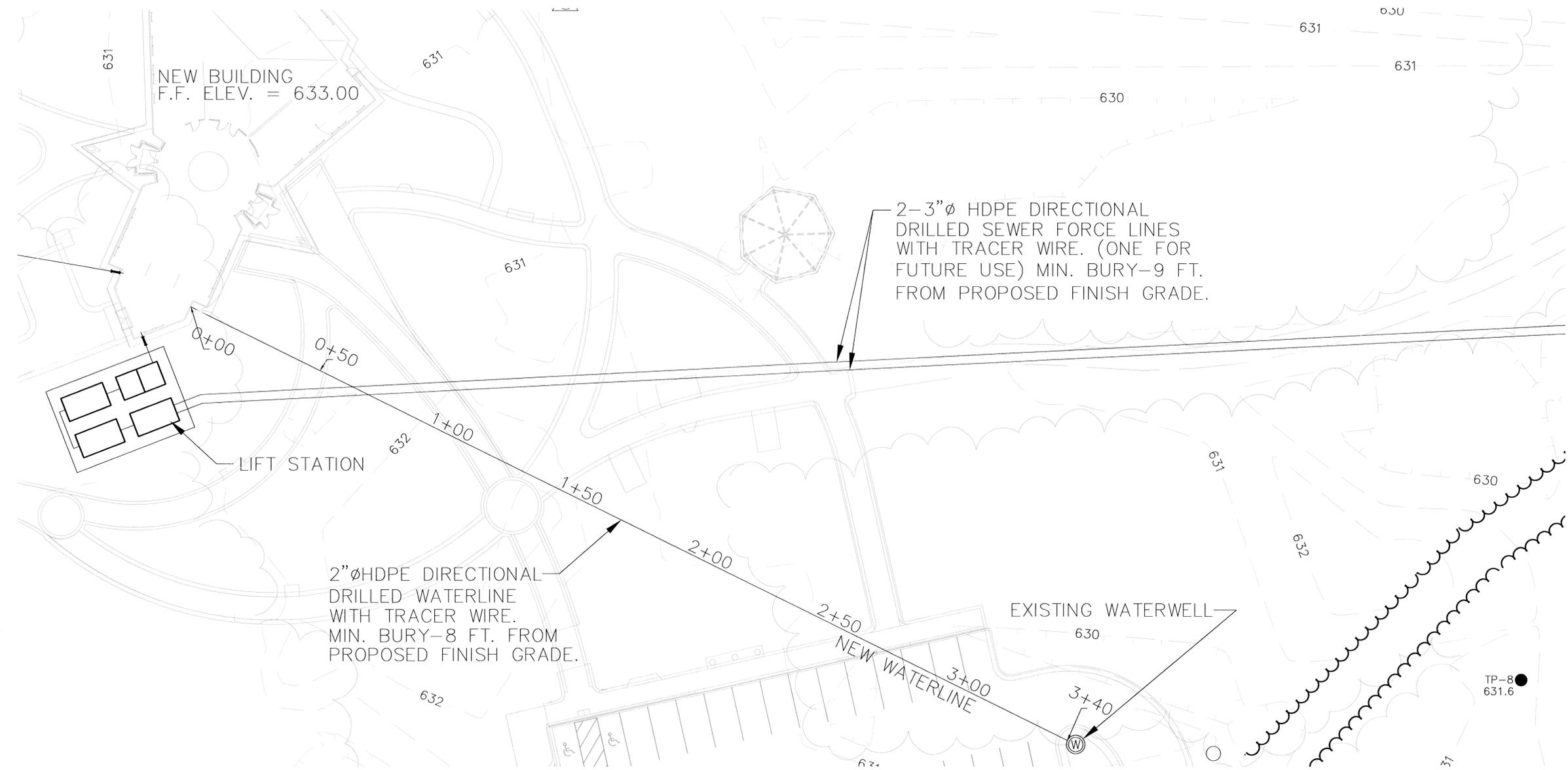
**SEWERLINE PLAN**

Title: **C6**

Sheet: **C6**

Req. Number: HPO70090  
File Number: SPK00173.00.73.52

COOK COUNTY: N.S.ZONE



**Management Resources**  
 Safety  
 Facilities  
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**DNR Division of Parks & Recreation**  
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Name: *David Sobania*  
 DAVID B. SOBANIA

Date: 2/3/09

Reg Number: 22844

Survey: J.D. WALKER/DEC. 2005 Designed: D.B. SOBANIA  
 Drawn: J.L. FLEISHER/JAN. 2006 Drawn: D.C. NELSON  
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**WATERLINE PLAN**  
 Title: **C7**  
 Sheet:  
 Reg Number: HPO70090  
 File Number: SPK00173.00.73.52



**SYMBOLS**

ROAD R/W	
WELL	
POWER POLE	
TELEPHONE JUNCTION BOX	
UNDERGROUND TELEPHONE	
UNDERGROUND ELECTRIC	
SANITARY SEWER LINE	
WATER SUPPLY LINE	
CONSTRUCT CONCRETE CURB & GUTTER	
INSTALL UNDERGROUND ELECTRIC	

**NOTES**

1. CONTRACTOR SHALL CONTRACT WITH ARROWHEAD ELECTRIC COOPERATIVE TO INSTALL 1520 L.F. BURIED POWER LINE.
2. MARK PAVEMENT SURFACES AS SHOWN. OWNER SHALL LAYOUT PAVEMENT MARKING WITHIN T.H. 61 R.O.W..
3. CONFLICTING STRIPING SHALL BE REMOVED (I.E. WHITE EDGE LINES AT NEW ENTRANCE AND TURN LANE LOCATIONS).
4. STRIPE NEW EDGE LINES AT FORMER CROSSOVER LOCATIONS.
5. OWNER SHALL FURNISH & INSTALL TRAFFIC INFORMATION SIGNS WITHIN T.H. 61 RIGHT OF WAY.
6. CROSSWALK STRIPING SHALL BE 6' LONG X 2' WIDE X 3' ON CENTER.
7. SIGNS SHALL BE CONSTRUCTED WITH 3M DG3 SHEETING.
8. LAYOUT AND STAKING AS PER L4, V1 AND SPECIFICATIONS.
9. SEE ELECTRICAL SERIES FOR SITE LIGHTING INFORMATION.

CONSTRUCT 64 S.Y. CONCRETE PAVEMENT. SEE DETAIL 3/L7.  
 INSTALL SHED. EMBED 5/8" DIA. STAINLESS STEEL BOLT 6" INTO CONCRETE SLAB WITH EPOXY ADHESIVE. LOCATE 4' O.C., AT BUILDING CORNERS AND WALL ENDS AT OPENINGS. FASTEN WITH 3/4" WASHER AND 5/8" NUT. VERIFY SHEATHING IS PROPERLY ATTACHED TO WALL STUDS.

CONSTRUCT WASTE AND RECYCLING DUMPSTER PAD AND FENCE. SEE DETAIL 3/L9.

CONSTRUCT 480 S.Y. CLASS 5 AGGREGATE SURFACE THAT SHALL BE FLUSH WITH ADJACENT PAVEMENTS. SEE DETAIL 4/L7.

CONSTRUCT 172 S.Y. BITUMINOUS PAVEMENT WITH VEGETATED EDGE. SEE DETAIL 6/L7 + 7/L7.

CONSTRUCT 160 S.Y. CONCRETE PAVEMENT WITH VEGETATED EDGE. SEE DETAIL 3/L7, 7/L7 + 5/L7A.

CONSTRUCT 64 L.F. D412 CONCRETE CURB AND GUTTER. SEE DETAIL 2/L7.

CONSTRUCT 53 L.F. B612 CONCRETE CURB AND GUTTER. SEE DETAIL 1/L7.

CONSTRUCT 629 L.F. (TOTAL) D412 CONCRETE CURB AND GUTTER. SEE DETAIL 2/L7.

CONSTRUCT 10,350 S.Y. BITUMINOUS PAVEMENT. SEE DETAIL 6/L7.

CONSTRUCT 1840 S.Y. CONCRETE PAVEMENT. SEE DETAIL 3/L7 + 4/L7A.

F.+I. 'DISABLED PARKING' (R7-8A) + 'VAN ACCESSIBLE' (R7-8B) SIGN + FACE SOUTHWEST. EMBED FLANGED CHANNEL POST 36" INTO CONCRETE PIER (8" DIA. X 8' - 36" ABOVE GRADE)

INSTALL 'YIELD' SIGN (R1-2) ABOVE 'ONE WAY SIGN (R6-1R) + FACE NORTH.

F.+I. 'DISABLED PARKING' (R7-8A) + 'VAN ACCESSIBLE' (R7-8B) SIGNS + FACE SOUTH.

CONSTRUCT 55 L.F. X 4' WIDE AGGREGATE SHOULDER. SEE DETAIL 6/L7.

CONSTRUCT 140 L.F. X 4' WIDE AGGREGATE SHOULDER. SEE DETAIL 6/L7.

CONSTRUCT ENTRANCE SIGN. BASE FINISH GRADE ELEVATION 635.0. SEE SHEET L10.

CONSTRUCT AGGREGATE SHOULDER (1'-6" WIDE) AND GRADE INSLOPE AS DIRECTED BY ENGINEER. SEE DETAIL 6/L7.

CONSTRUCT 153 L.F. B612 CONCRETE CURB AND GUTTER. SEE DETAIL 1/L7.

CONSTRUCT 12 L.F. D412 CONCRETE CURB AND GUTTER. SEE DETAIL 2/L7.

CONSTRUCT 26 L.F. B612 CONCRETE CURB AND GUTTER. SEE DETAIL 1/L7.

SAVE AND PROTECT WELLHEAD AS PER L1 AND L3.

CONSTRUCT 210 L.F. (TOTAL) B612 CONCRETE CURB AND GUTTER PARKING ISLANDS. DIMENSIONS ARE TYPICAL. SEE DETAIL 1/L7.



**Management Resources**  
 Safety Facilities Materials Equipment Field Operations Information Management

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 Section: 30 Township: 64 N Range: 7 E

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 LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA

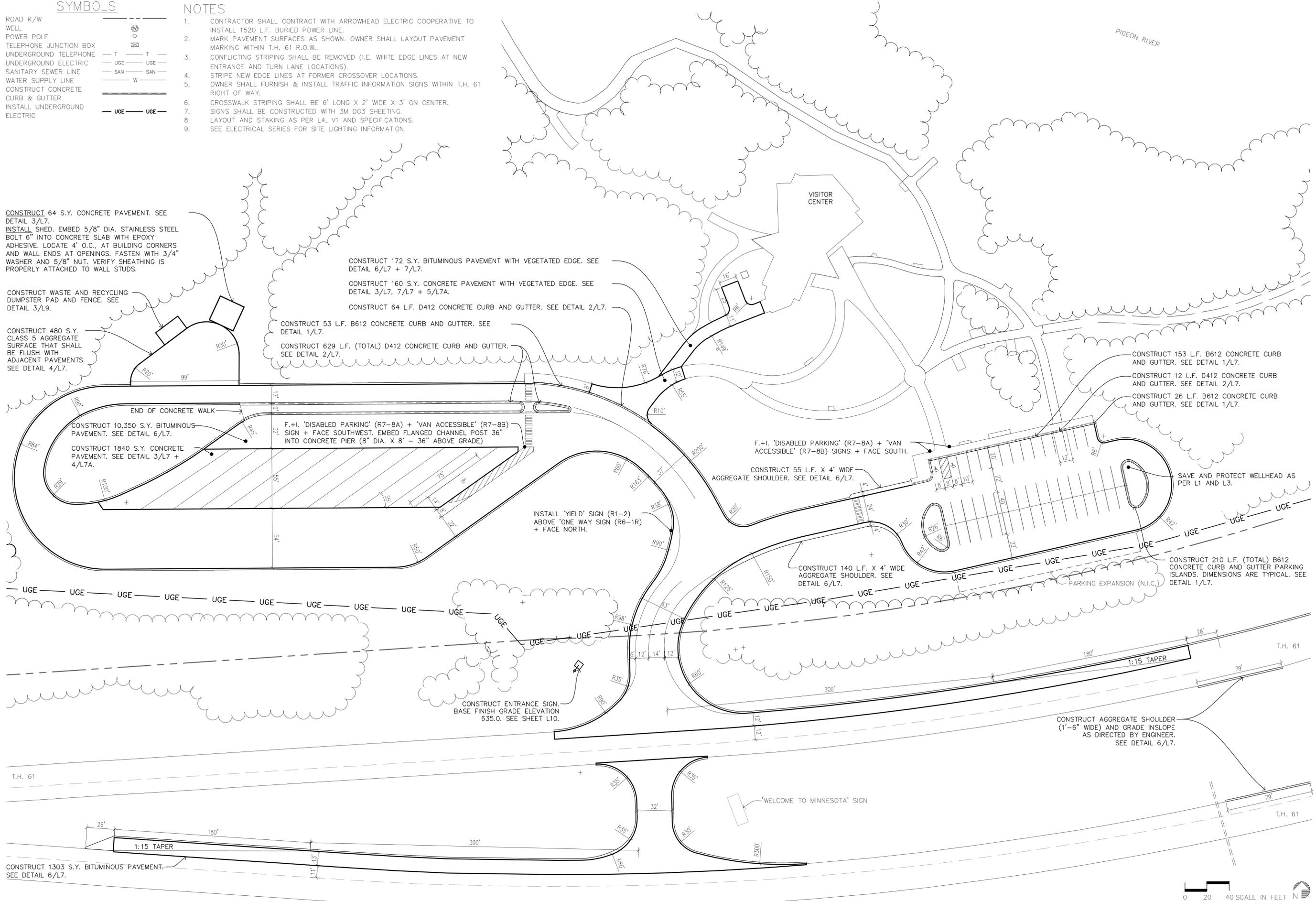
Name: Jason Peterson  
 Jason Peterson  
 Date: 10 March 2009

Reg. Number: 42173

Survey: DNR / 07 & DOT / 08 Designed: JHP  
 Drawn: JT Drawn: JHP  
 Checked: DS Checked:  
 Horiz datum: NAD 83, 98 ADJ  
 Vert datum: NGVD 1929

**Vehicle Layout & Sign Plan**

Title: L2  
 Reg. Number: HP070090  
 File Number: SPK00173.00.73.52





**SYMBOLS**

- ROAD R/W
- DNR SURVEY CONTROL PT
- DOT SURVEY CONTROL PT
- CONTOUR
- FINISH CONTOUR
- SURFACE SLOPE
- FINISH SPOT ELEVATION

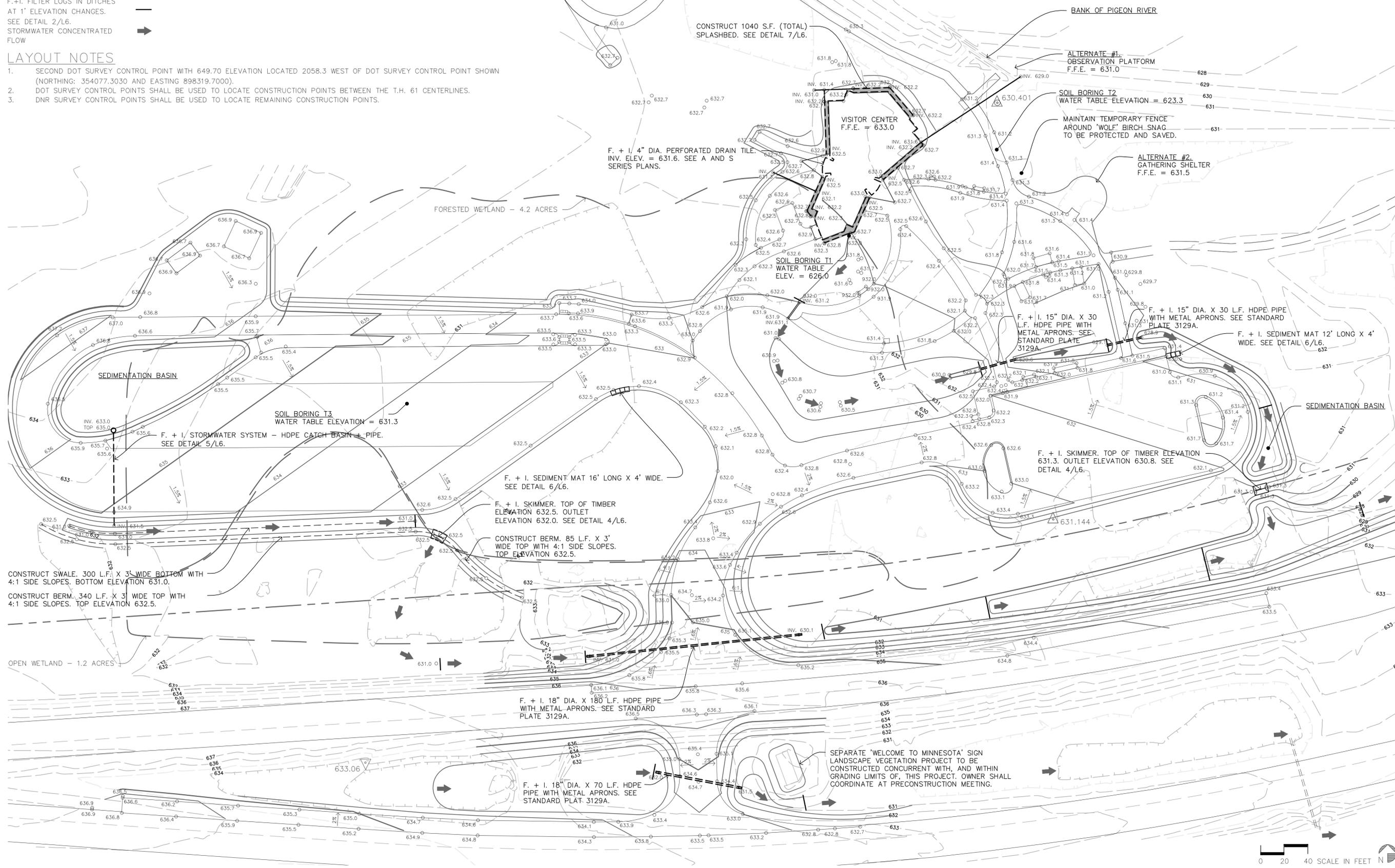
**NOTES**

- F.+I. FILTER LOGS IN DITCHES AT 1' ELEVATION CHANGES. SEE DETAIL 2/L6.
- STORMWATER CONCENTRATED FLOW

1. MAXIMUM SIDE SLOPE 4H:1V.
2. IN PLACE COMMON EXCAVATION 26,412 C.Y.
3. SALVAGE ALL TOPSOIL TO ONE-HALF THE AVERAGE DEPTH LISTED FROM SOIL INVESTIGATIONS (50% LOSS DURING HANDLING).
4. IF SALVAGED TOPSOIL DOES NOT EXCEED 1575 C.Y., SALVAGE AND SHALLOW STOCKPILE ORGANIC/MUCK/CLAY SOIL TO DEWATER OVER TIME. BLEND ONE PART ORGANIC/MUCK/CLAY SOIL TO TWO PARTS SALVAGED TOPSOIL.

**LAYOUT NOTES**

1. SECOND DOT SURVEY CONTROL POINT WITH 649.70 ELEVATION LOCATED 2058.3 WEST OF DOT SURVEY CONTROL POINT SHOWN (NORTHING: 354077.3030 AND EASTING 898319.7000).
2. DOT SURVEY CONTROL POINTS SHALL BE USED TO LOCATE CONSTRUCTION POINTS BETWEEN THE T.H. 61 CENTERLINES.
3. DNR SURVEY CONTROL POINTS SHALL BE USED TO LOCATE REMAINING CONSTRUCTION POINTS.



**Management Resources**

- Safety
- Facilities
- Materials
- Equipment
- Field Operations
- Information Management

**DNR Division of Parks & Recreation**

**Grand Portage State Park**  
 Visitor's Center  
 DOT Rest Area

Cook County      Near Grand Portage  
 Section: 30      Township: 64 N      Range: 7 E

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Name: *Jason Peterson*  
**Jason Peterson**  
 Date: 4 March 2009

Proj. Number: **42173**

Survey: DNR / 07 & DOT / 08      Designed: JHP  
 Drawn: JT      Drawn: JHP  
 Checked: DS      Checked:  
 Horiz datum: NAD 83, 98 ADJ  
 Vert datum: NGVD 1929

Title: **Grading Plan**

Sheet: **L4**  
 Proj. Number: **HP070090**  
 File Number: **SPK00173.00.73.52**

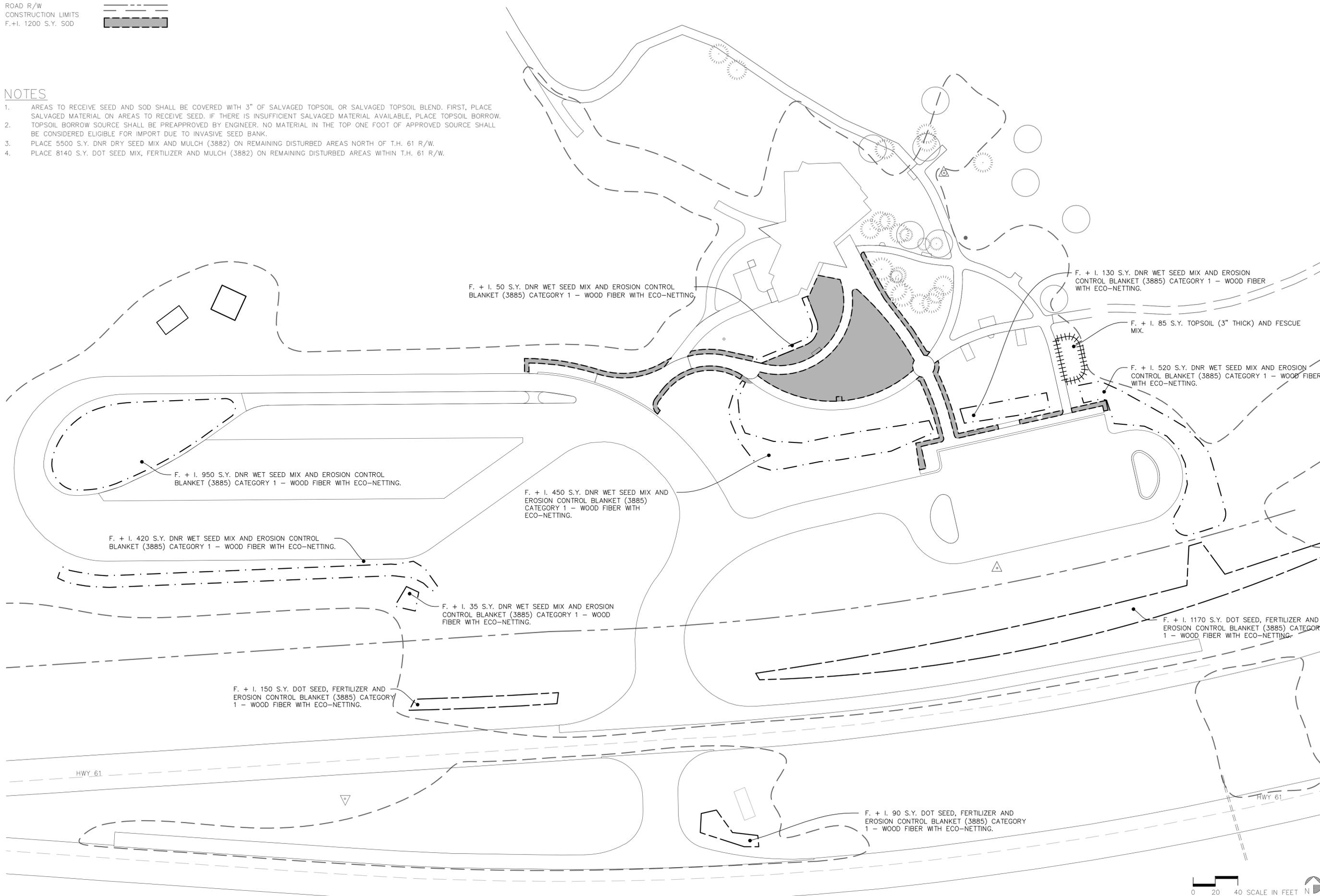


**SYMBOLS**

ROAD R/W  
 CONSTRUCTION LIMITS  
 F.+I. 1200 S.Y. SOD

**NOTES**

1. AREAS TO RECEIVE SEED AND SOD SHALL BE COVERED WITH 3" OF SALVAGED TOPSOIL OR SALVAGED TOPSOIL BLEND. FIRST, PLACE SALVAGED MATERIAL ON AREAS TO RECEIVE SEED. IF THERE IS INSUFFICIENT SALVAGED MATERIAL AVAILABLE, PLACE TOPSOIL BORROW. TOPSOIL BORROW SOURCE SHALL BE PREAPPROVED BY ENGINEER. NO MATERIAL IN THE TOP ONE FOOT OF APPROVED SOURCE SHALL BE CONSIDERED ELIGIBLE FOR IMPORT DUE TO INVASIVE SEED BANK.
2. PLACE 5500 S.Y. DNR DRY SEED MIX AND MULCH (3882) ON REMAINING DISTURBED AREAS NORTH OF T.H. 61 R/W.
3. PLACE 8140 S.Y. DOT SEED MIX, FERTILIZER AND MULCH (3882) ON REMAINING DISTURBED AREAS WITHIN T.H. 61 R/W.



F. + I. 50 S.Y. DNR WET SEED MIX AND EROSION CONTROL BLANKET (3885) CATEGORY 1 - WOOD FIBER WITH ECO-NETTING.

F. + I. 130 S.Y. DNR WET SEED MIX AND EROSION CONTROL BLANKET (3885) CATEGORY 1 - WOOD FIBER WITH ECO-NETTING.

F. + I. 85 S.Y. TOPSOIL (3" THICK) AND FESCUE MIX.

F. + I. 520 S.Y. DNR WET SEED MIX AND EROSION CONTROL BLANKET (3885) CATEGORY 1 - WOOD FIBER WITH ECO-NETTING.

F. + I. 950 S.Y. DNR WET SEED MIX AND EROSION CONTROL BLANKET (3885) CATEGORY 1 - WOOD FIBER WITH ECO-NETTING.

F. + I. 450 S.Y. DNR WET SEED MIX AND EROSION CONTROL BLANKET (3885) CATEGORY 1 - WOOD FIBER WITH ECO-NETTING.

F. + I. 420 S.Y. DNR WET SEED MIX AND EROSION CONTROL BLANKET (3885) CATEGORY 1 - WOOD FIBER WITH ECO-NETTING.

F. + I. 35 S.Y. DNR WET SEED MIX AND EROSION CONTROL BLANKET (3885) CATEGORY 1 - WOOD FIBER WITH ECO-NETTING.

F. + I. 1170 S.Y. DOT SEED, FERTILIZER AND EROSION CONTROL BLANKET (3885) CATEGORY 1 - WOOD FIBER WITH ECO-NETTING.

F. + I. 150 S.Y. DOT SEED, FERTILIZER AND EROSION CONTROL BLANKET (3885) CATEGORY 1 - WOOD FIBER WITH ECO-NETTING.

F. + I. 90 S.Y. DOT SEED, FERTILIZER AND EROSION CONTROL BLANKET (3885) CATEGORY 1 - WOOD FIBER WITH ECO-NETTING.



**Management Resources**  
 Safety  
 Facilities  
 Materials  
 Equipment  
 Field Operations  
 Information Management

**DNR Division of Parks & Recreation**

**Grand Portage State Park**  
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Cook County Near Grand Portage  
 Section: 30 Township: 64 N Range: 7 E

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Name: *Jason Peterson*  
**Jason Peterson**

Date: 4 March 2009

Reg. Number: 42173

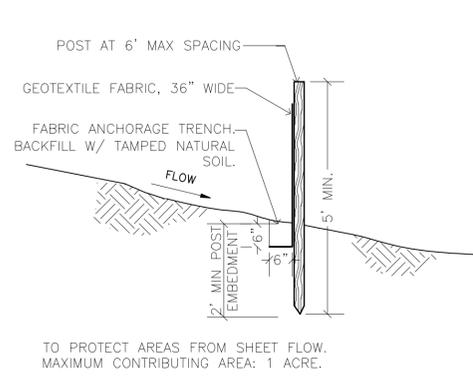
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 Drawn: JT    Drawn: JHP  
 Checked: DS    Checked:  
 Horiz datum: NAD 83, 98 ADJ  
 Vert datum: NGVD 1929

Title: **Landscape Plan**

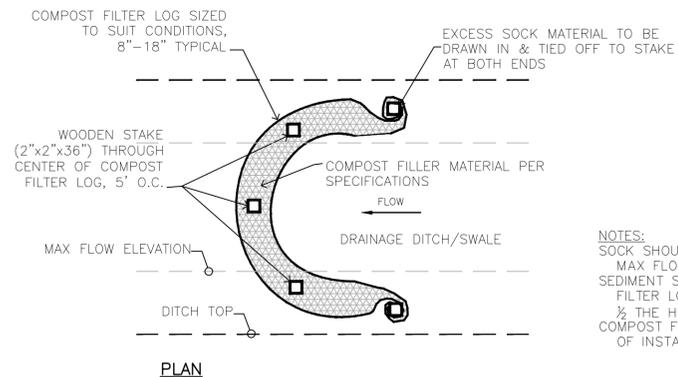
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Proj. Number: HP070090  
 File Number: SPK00173.00.73.52

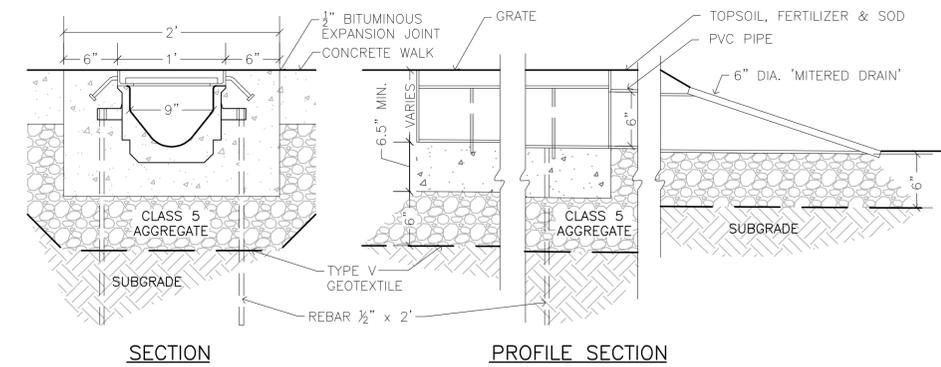
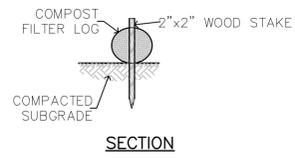




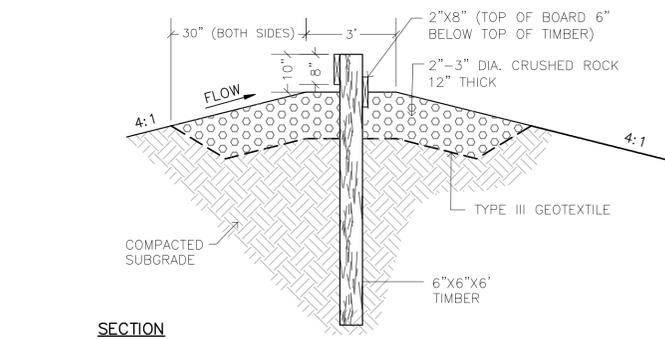
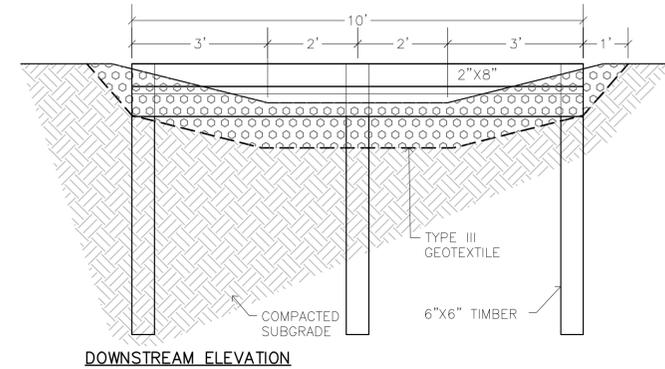
1 SILT FENCE- HEAVY DUTY  
L6 HAND INSTALLED NO SCALE



2 COMPOST FILTER LOG  
L6 NO SCALE

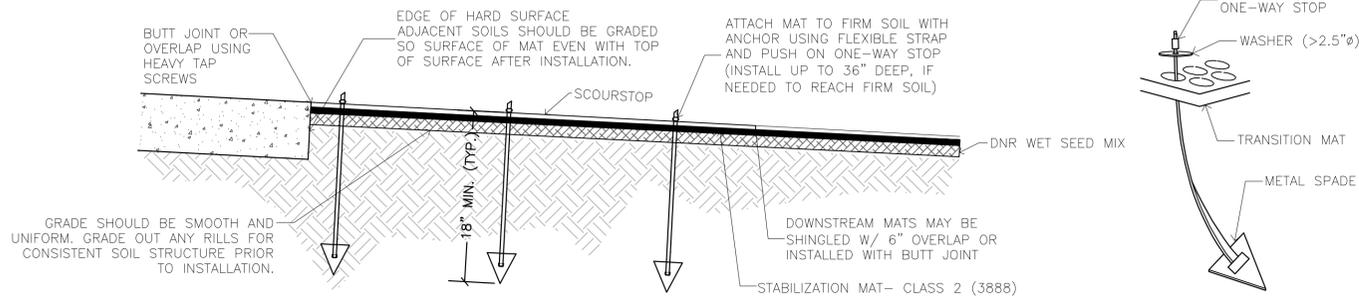


3 TRENCH DRAIN SYSTEM  
L6 NO SCALE



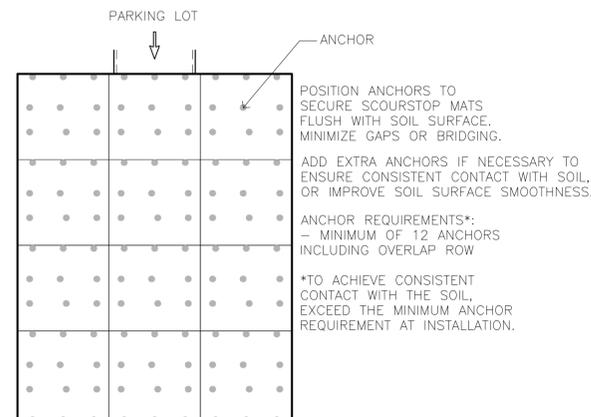
NOTES:  
- CRUSHED ROCK SHALL BE 100% CRUSHED.  
- ALL WOOD TO BE MINNESOTA RED OR SOUTHERN YELLOW PINE (PRESSURE TREATED WITH 100% OXIDE-PURE ACQ TO A 0.6 LBS. COPPER PER CUBIC FT. RETENTION).  
- FASTENERS SHALL BE STAINLESS STEEL OR GALVANIZED 3/8" LAG BOLTS (2 PER END AND MIDDLE).

4 SKIMMER  
L6 NO SCALE

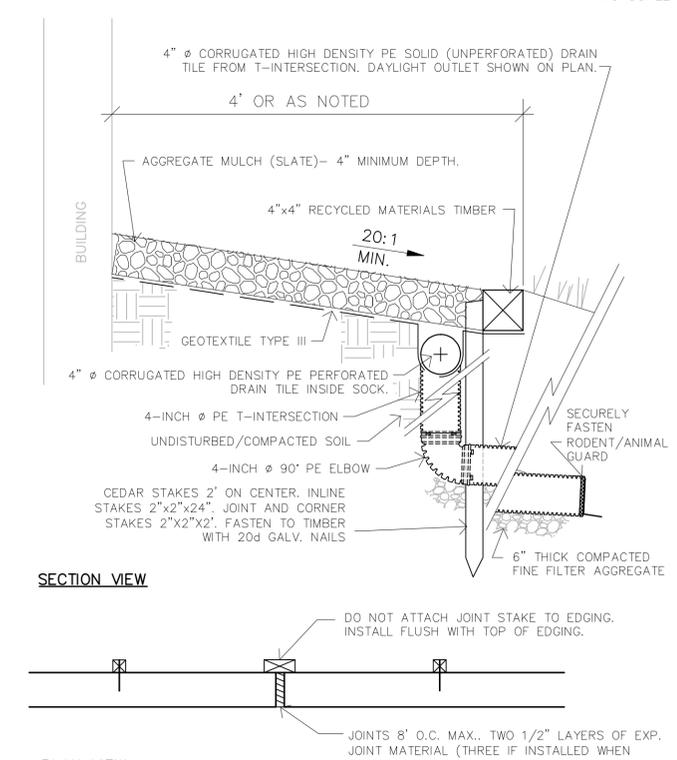


NOTES:  
-INSTALL ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

5 STORMWATER SYSTEM  
L6 NO SCALE



6 SEDIMENT MAT  
L6 NO SCALE



7 SPLASHBED  
L6 NO SCALE

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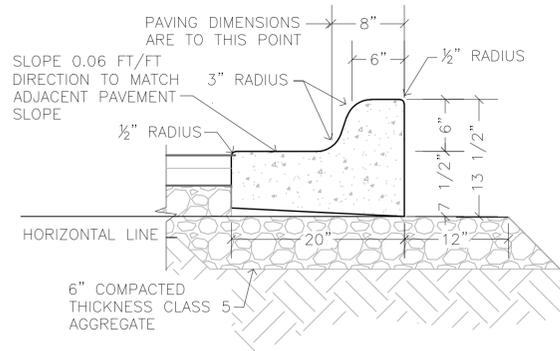
Name: *Jason Peterson*  
Jason Peterson  
Date: 4 March 2009

Proj Number: 42173

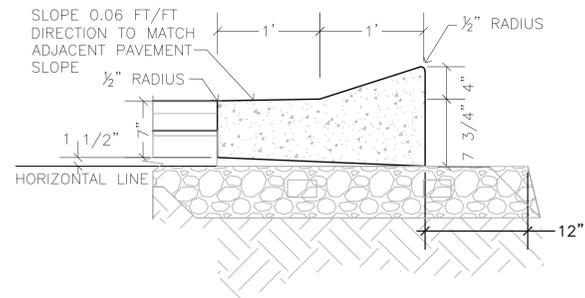
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Horz datum: NAD 83, 96 ADJ  
Vert datum: NGVD 1929

Storm Water  
Details

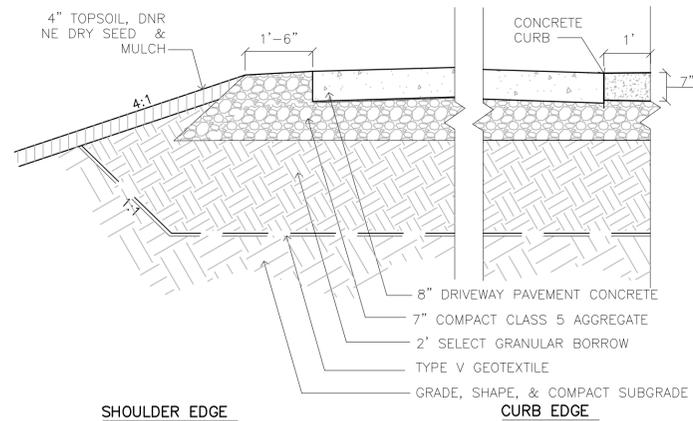
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File Number: SPK00173.00.73.52



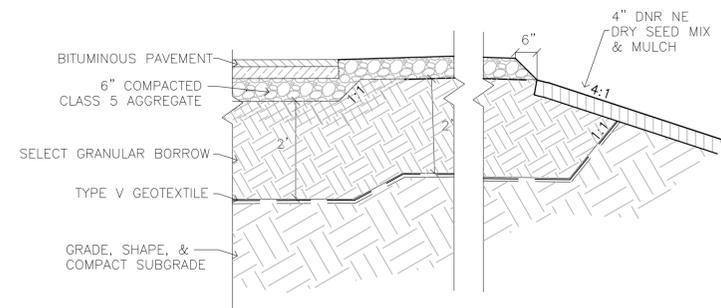
1 B612 CURB & GUTTER  
L7 NO SCALE



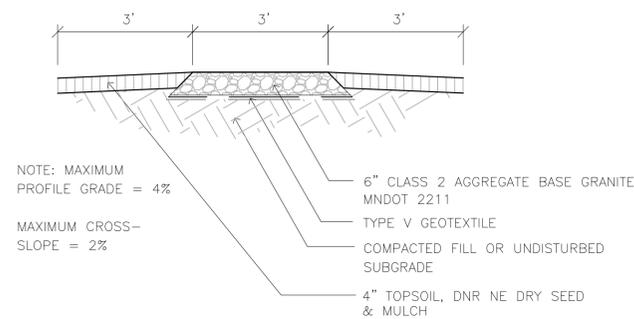
2 D412 CURB & GUTTER  
L7 NO SCALE



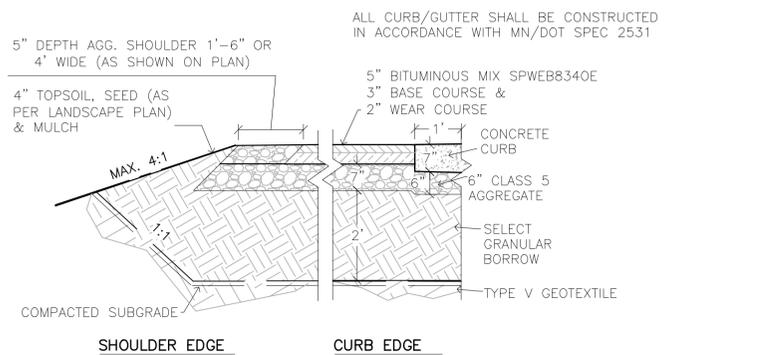
3 CONCRETE PAVEMENT  
L7 SCALE IN FEET



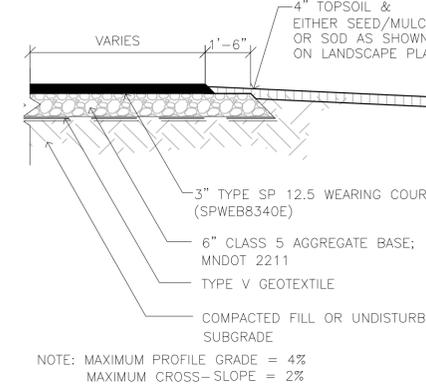
4 AGGREGATE SURFACE ROAD/PARKING AREA WITH D412 CURB  
L7 SCALE IN FEET



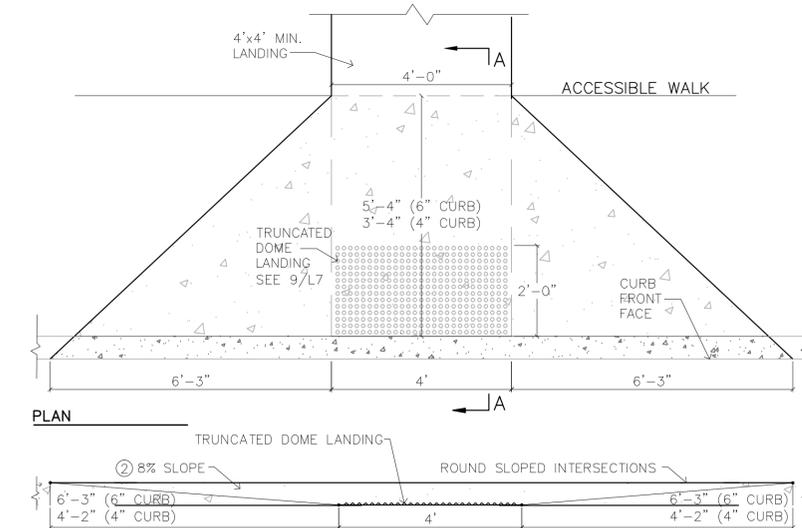
5 AGGREGATE TRAIL  
L7 NO SCALE



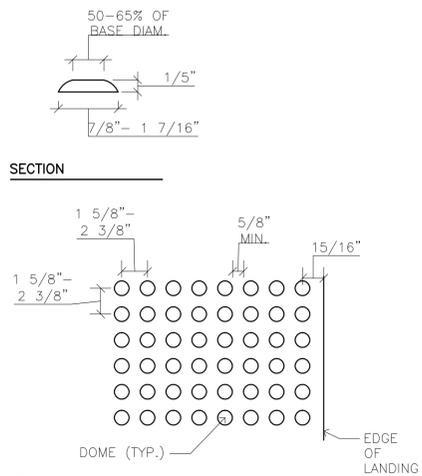
6 BITUMINOUS PAVEMENT/CURB INTERFACE  
L7 NO SCALE



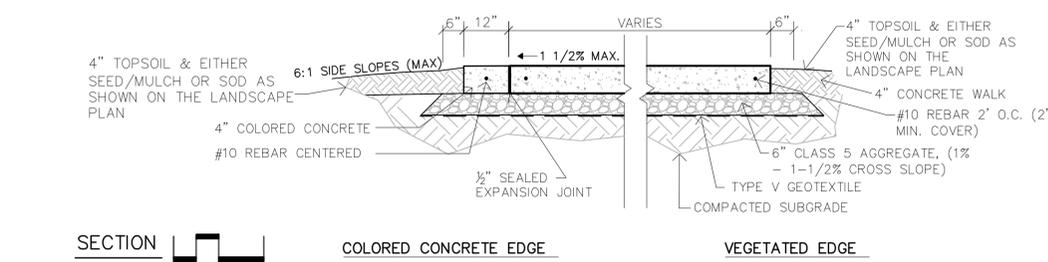
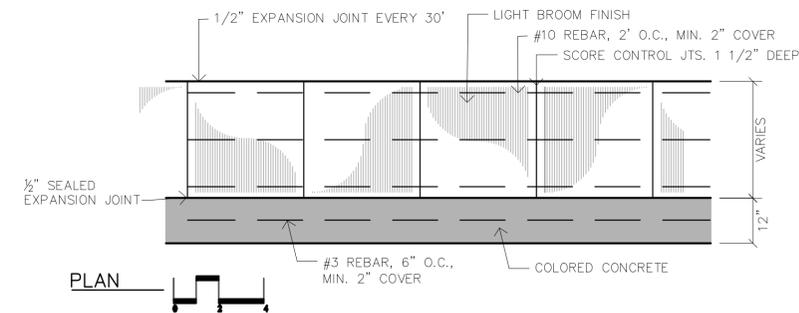
7 BITUMINOUS TRAIL  
L7 NO SCALE



8 ACCESSIBLE CURB RAMP  
L7 SCALE IN FEET



9 TRUNCATED DOME LANDING  
L7 NO SCALE



NOTES  
• CONCRETE SHALL BE REINFORCED WITH #10 REBAR AND 1/2" LONG POLYPROPYLENE FIBRILLATED FIBER, SEE SPECIFICATIONS. MnDot 3A32, 3900 PSI, TOOL ALL EDGES, 1/2" EXPANSION JOINT EVERY 30'.  
• TOP OF TURF SHALL BE 1/2" BELOW THE TOP SURFACE OF THE CONCRETE WALK.  
• WALK SHALL BE FLUSH WITH ADJACENT CURB OR CONCRETE SLAB.  
• MEASUREMENT OF MAXIMUM RUNNING GRADE AND CROSS SLOPE SHALL BE MADE WITH A 24" LEVEL. ANY PORTION OF THE SURFACE MAY BE TESTED BY THE ENGINEER USING THE 24" LEVEL. TOLERANCE OF PLUS OR MINUS 1/2% WILL BE ALLOWED.  
• THE WALKWAYS IN THIS PROJECT ARE INTENDED TO MEET ADA REQUIREMENTS FOR ACCESSIBLE ROUTES. WALKS EXCEEDING 4.5% PROFILE GRADE OR 1.5% CROSS SLOPE SHALL BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE.

10 CONCRETE WALK  
L7 NO SCALE

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Jason Peterson  
Date: 4 March 2009

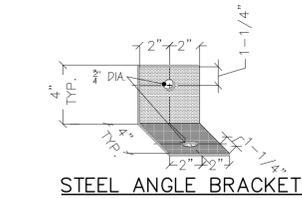
Reg. Number: 42173

Survey: DNR / 07 & DOT / 08 Drawn: MA  
Checked: DS  
Horz datum: NAD 83, 96 ADJ  
Vert datum: NGVD 1929

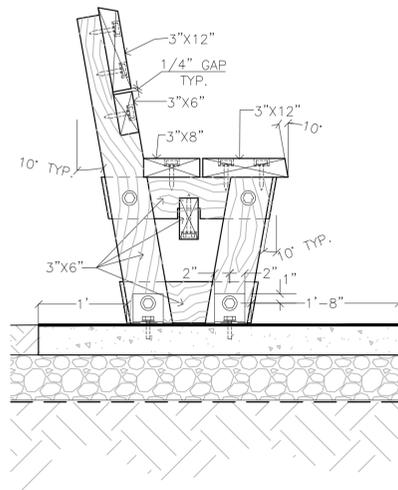
Surface Details

Sheet: L7  
Plan Number: HP070090  
File Number: SPK00173.00.73.52

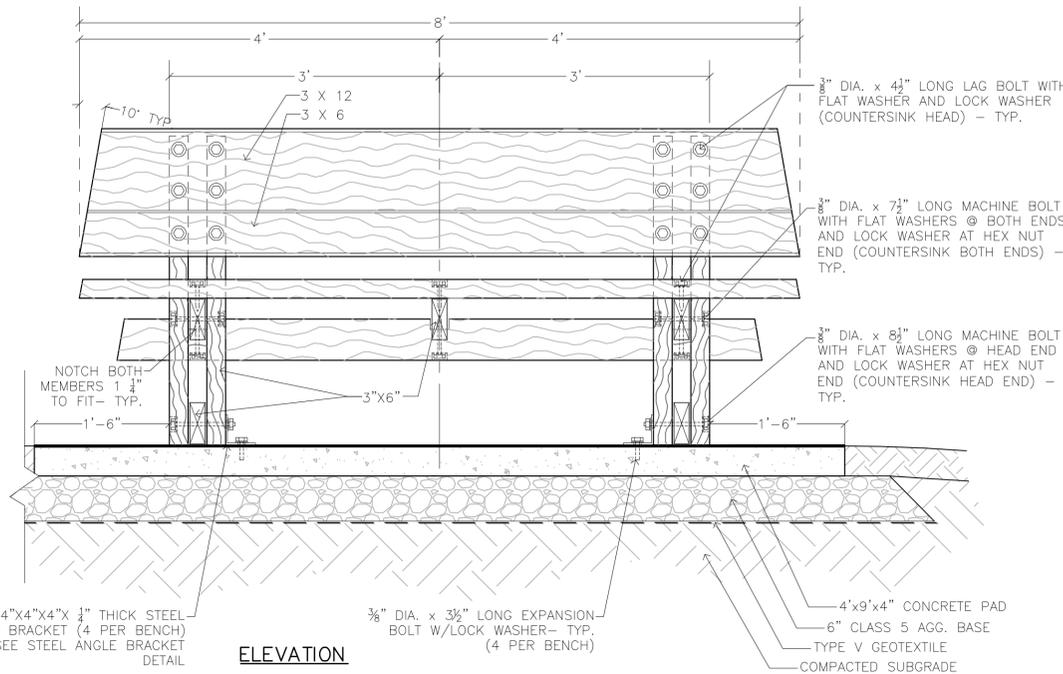




**STEEL ANGLE BRACKET**



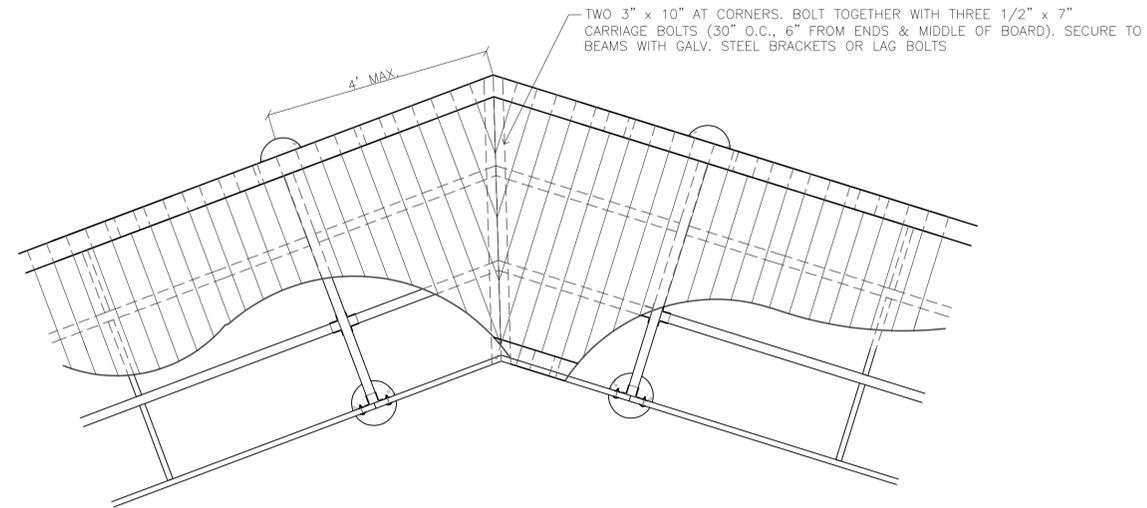
**SECTION**



**ELEVATION**

4"X4"X4"X 1/4" THICK STEEL ANGLE BRACKET (4 PER BENCH) TYP.-SEE STEEL ANGLE BRACKET DETAIL

3/8" DIA. x 3 1/2" LONG EXPANSION-BOLT W/LOCK WASHER- TYP. (4 PER BENCH)



NOTE:  
 AS THE ANGLE APPROACHES 90d, A SINGLE POST AND BRACKET IS NEEDED AT THE OUTSIDE CORNER. AT 90d, PLACE THE SUPPORTS AT THE ENDS OF EACH SECTION AND BUTT THE SECTIONS TOGETHER (USE END BRACKETS).

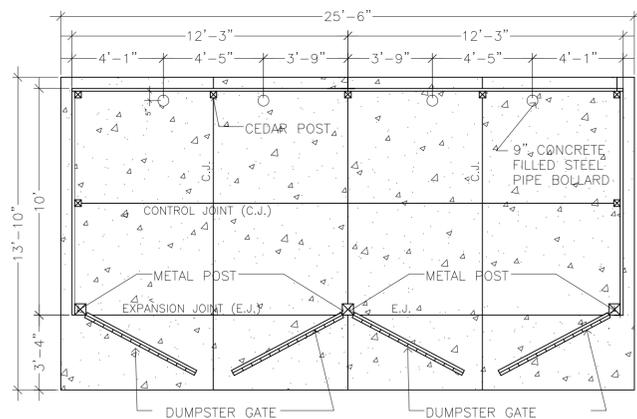
**1**  
 L9 BENCH WITH BACK DETAIL

SCALE IN FEET

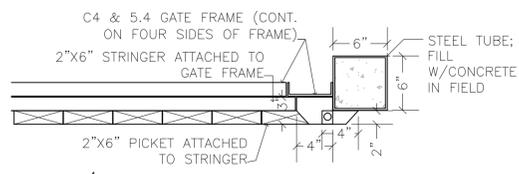
**2**  
 L9 BOARDWALK AT CORNERS - ALTERNATE #9

PLAN

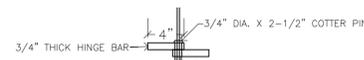
SCALE IN FEET



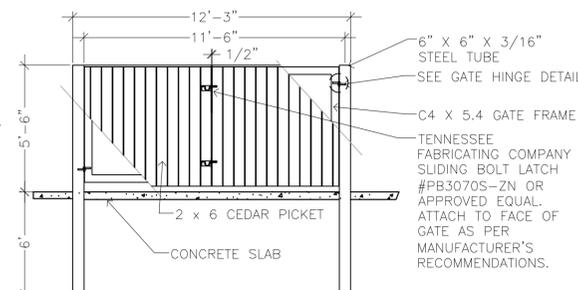
**PLAN**



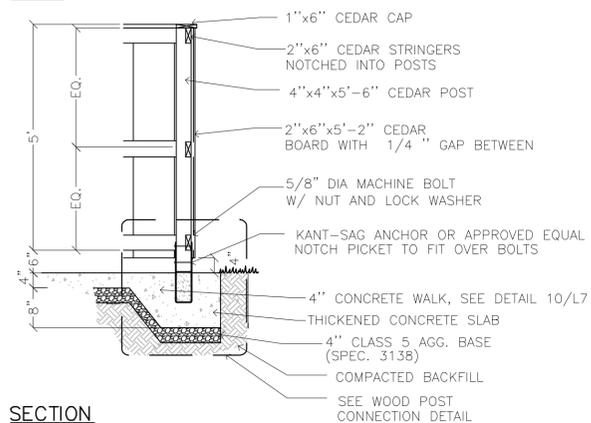
**HINGE / METAL POST DETAIL**



**GATE HINGE ELEVATION**



**GATE ELEVATION**

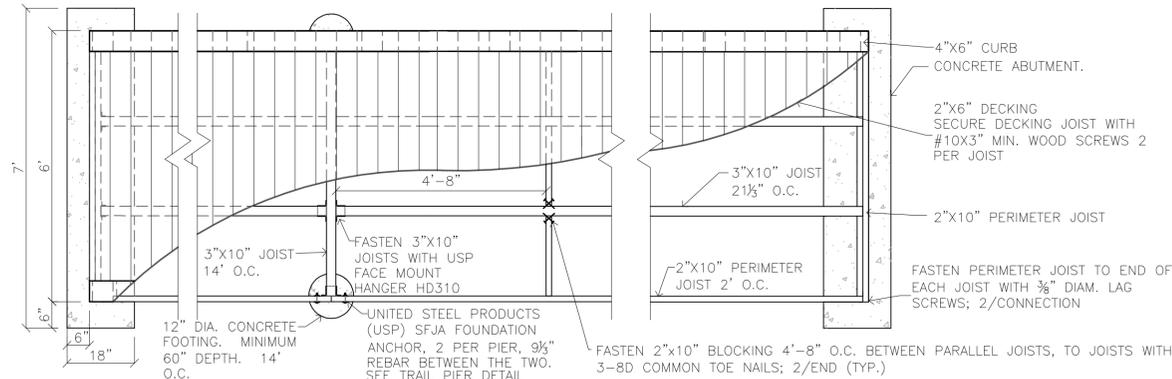


**SECTION**

**WOOD POST / CONCRETE DETAIL**

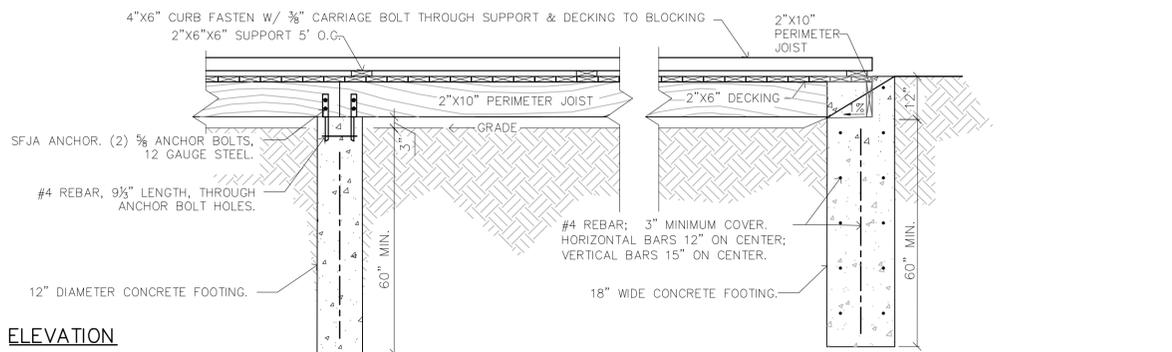
**3**  
 L9 UTILITIES FENCE

NO SCALE



**PLAN**

NOTES:  
 -DECKING & CURBS SHALL BE CEDAR (GRADED STRUCTURAL S4S).  
 -ALL OTHER WOOD SHALL BE SOUTHERN YELLOW OR MN RED PINE (GRADED NO.1 & S4S). LUMBER SHALL BE ACQ PRESSURE TREATED TO A MIN. RETENTION OF 0.4 LBS./CUBIC FOOT & TIMBERS 0.6 LBS./CUBIC FOOT.  
 -HARDWARE & FASTENERS SHALL BE NO LESS THAN POST HOT-DIPPED GALVANIZED, MEETING ASTM A 153.



**ELEVATION**

**4**  
 L9 TRAIL BOARDWALK - ALTERNATE #9

SECTION/ELEVATION

SCALE IN FEET

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Jason Peterson  
 Jason Peterson  
 Date: 4 March 2009

Reg Number: 42173

Survey: DNR / 07 & DOT / 08 Designed: DOT/P  
 Drawn: JT Drawn: MA  
 Checked: DS Checked:  
 Horiz datum: NAD 83, 96 ADJ  
 Vert datum: NGVD 1929

Title: **Details**

Sheet: **L9**

Proj Number: HP070090  
 File Number: SPK00173.00.73.52



**Management Resources**

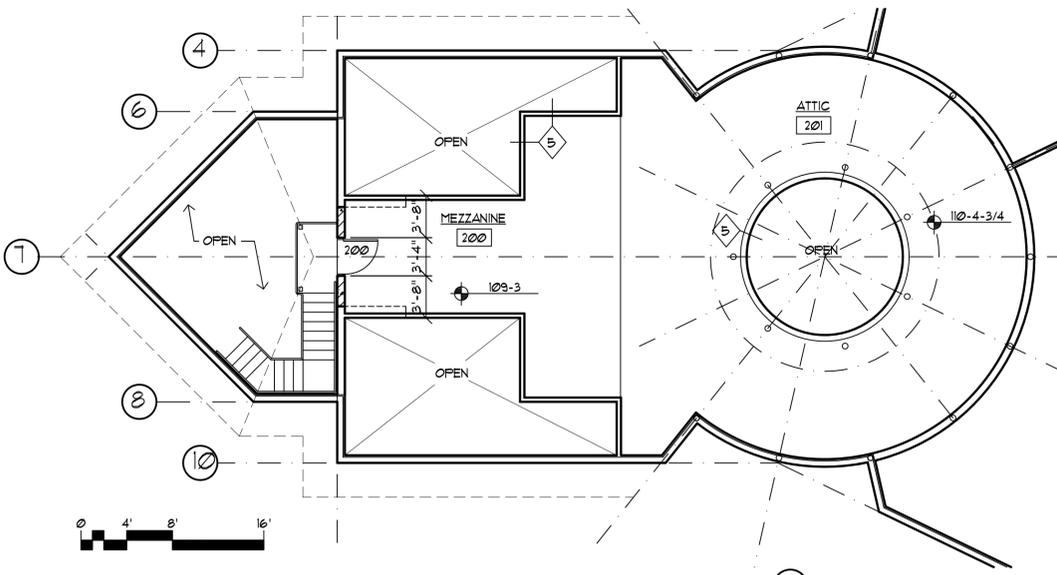
- Safety
- Facilities
- Materials
- Equipment
- Field Operations
- Information Management

**DNR Division of Parks and Recreation**

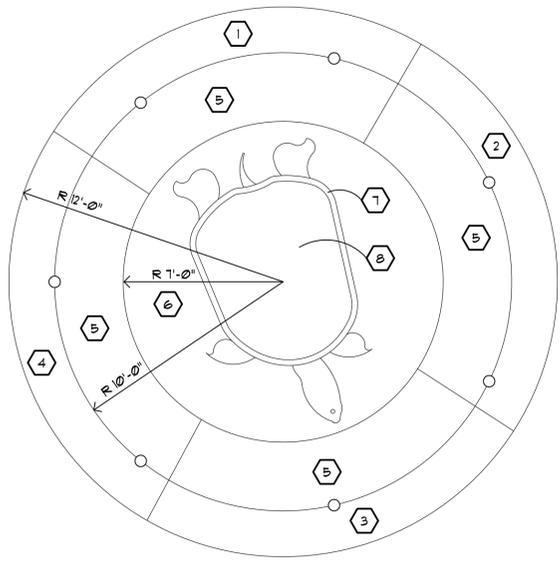
**Grand Portage State Park**

Visitor's Center  
MN DOT Rest Area

Cook County Near Grand Portage  
Sector: 30 Township: 64 N Range: 07 W

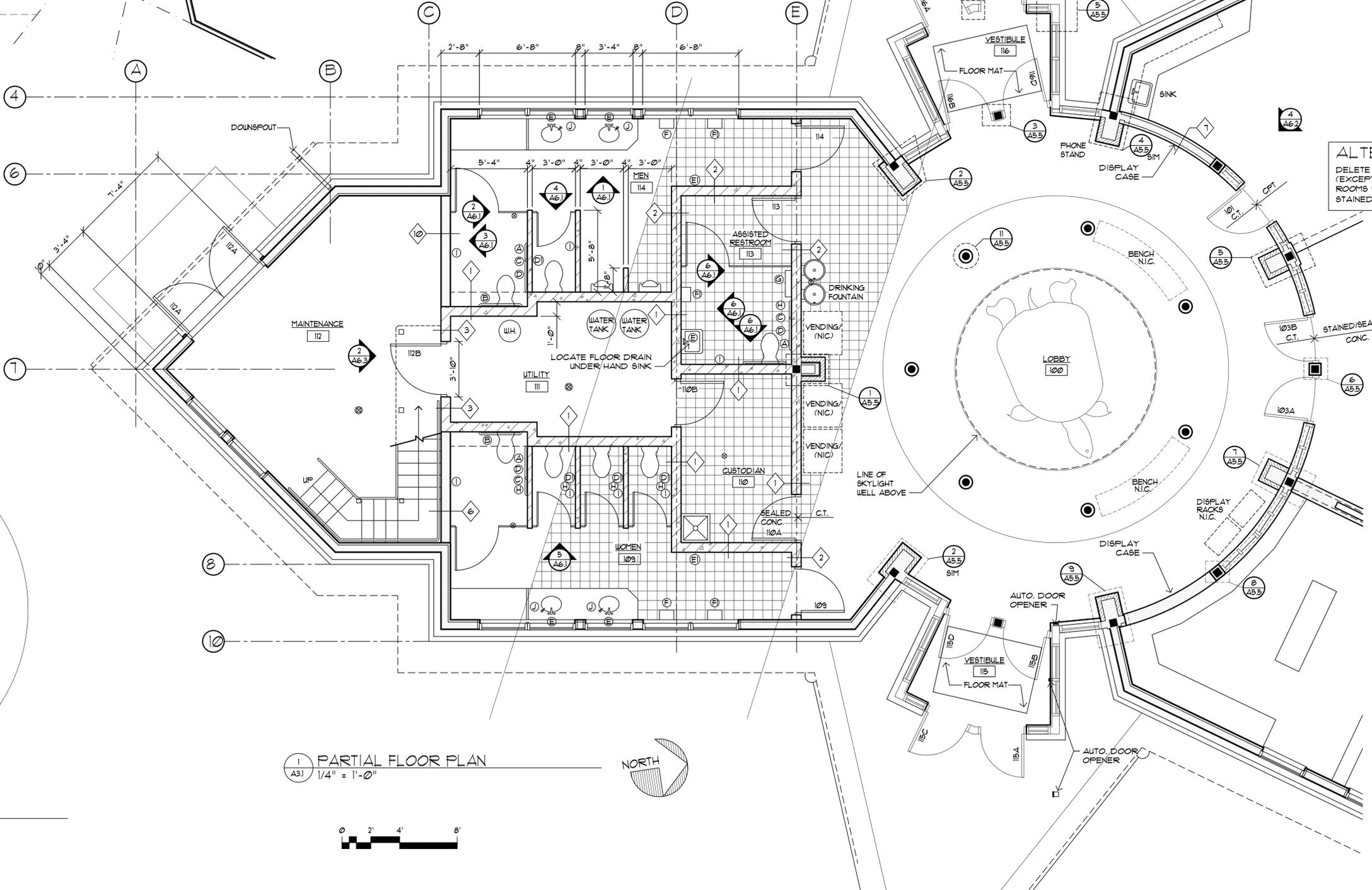


2 MEZZANINE / ATTIC PLAN  
A3.1 1/8" = 1'-0"



WATER-JET CUT TILE DESIGN AT LOBBY:

- 1) CROSSVILLE, CROSS-COLOR SERIES TILES, 8x8 (8 DISTINCT COLORS)
- 2) ARCHITECT WILL COORDINATE FINAL DESIGN LAYOUT
- 3) SEE SPEC SECTION 0930-CERAMIC TILE FOR TILE SPECIFICATIONS
- 4) SEE SPEC SECTION 01200 FOR WATER-JET CUT TILE DESIGN ALLOWANCE



1 PARTIAL FLOOR PLAN  
A3.1 1/4" = 1'-0"

**ALTERNATE 3:**  
DELETE FLOOR TILE IN ROOM 100 (EXCEPT AT WATERJET TILE DESIGN.)  
ROOMS 110, 113 AND 116. SUBSTITUTE STAINED AND SEALED CONCRETE FINISH.

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Name: *Peter K. Paulson*  
Peter K. Paulson  
Date: 1/26/2009

Reg. Number: 20131

Survey: Designed: PKP  
Drawn: Drawn: MP  
Checked: Checked: PKP  
Horz datum:  
Vert datum:

**Partial Floor, Mezz/Attic Plans**

Title: **A3.1**  
Sheet:  
Req. Number: HP070090  
File Number: SPK00173.00.73.52

Management Resources

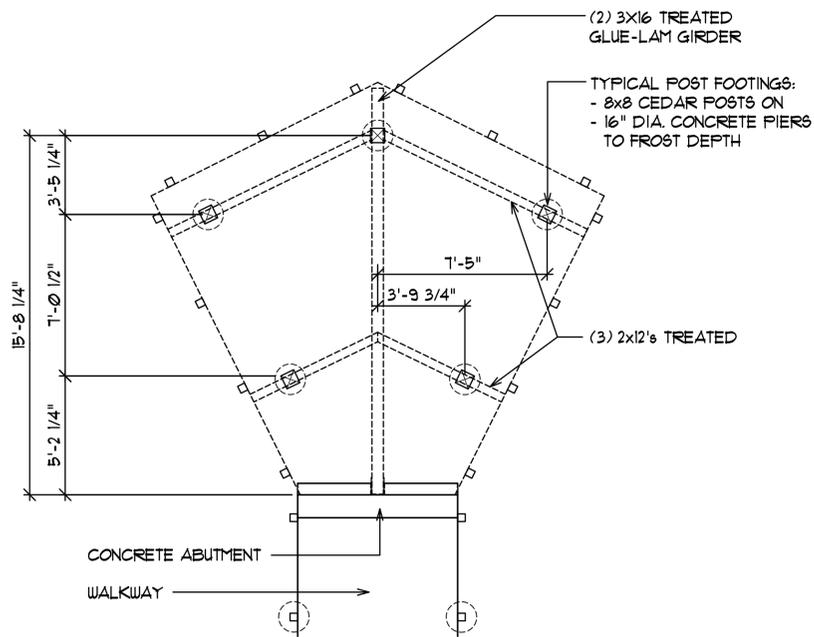
Safety  
Facilities  
Materials  
Equipment  
Field Operations  
Information Management

DNR Division of  
Parks and Recreation

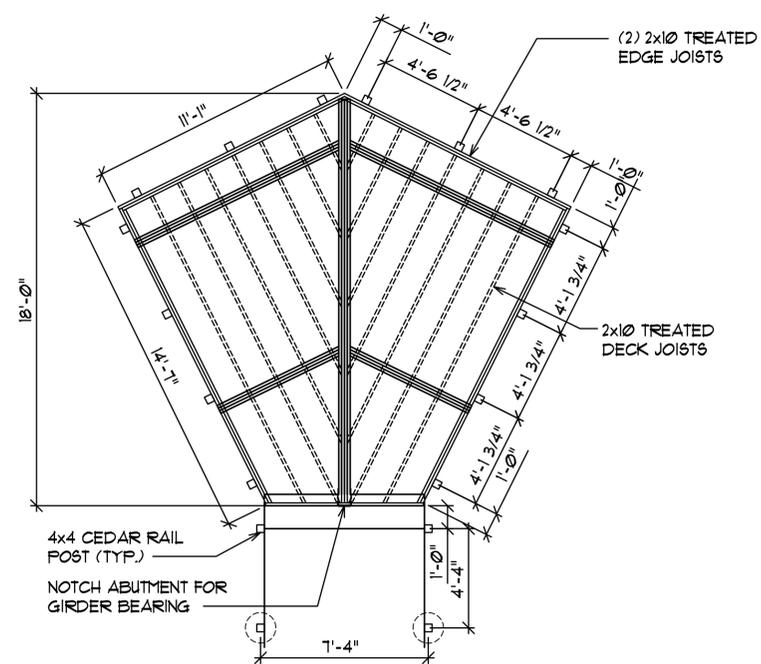
Grand Portage  
State Park

Visitor's Center  
MN DOT Rest Area

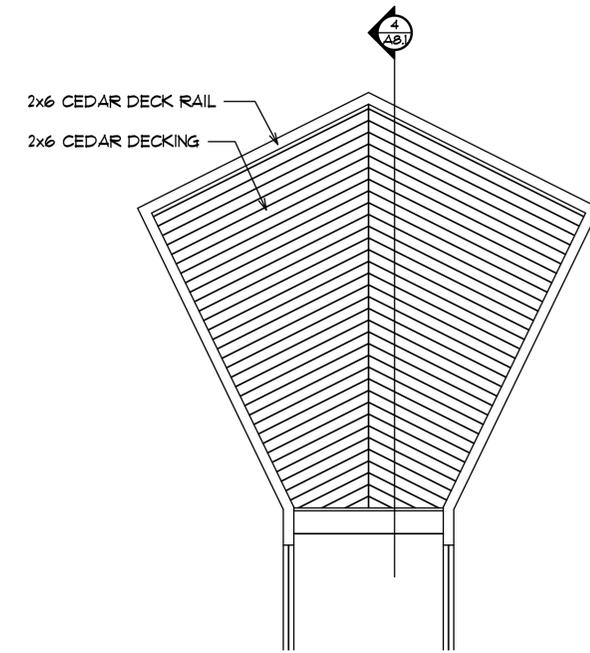
Cook County Near Grand Portage  
Section: 30 Township: 64 N Range: 07 W



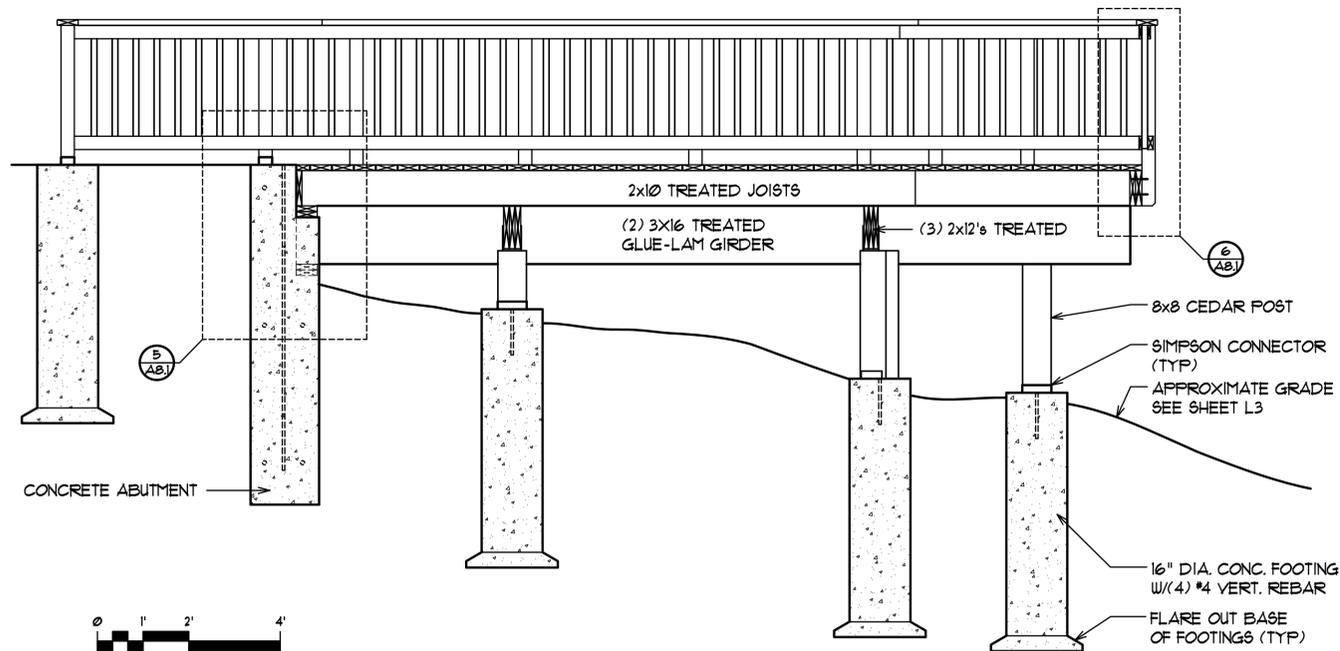
1 FOOTING PLAN  
A8.1 1/4" = 1'-0"



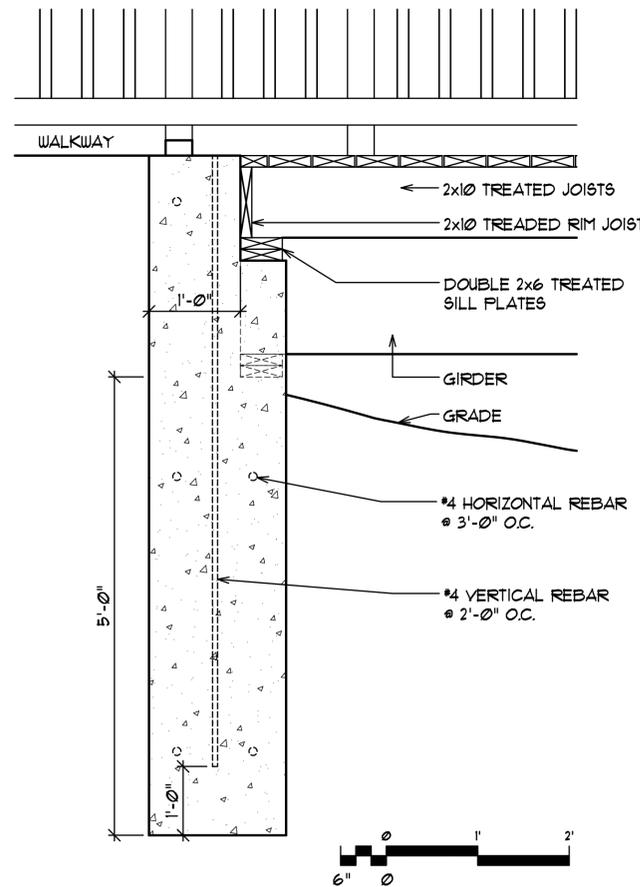
2 FRAMING PLAN  
A8.1 1/4" = 1'-0"



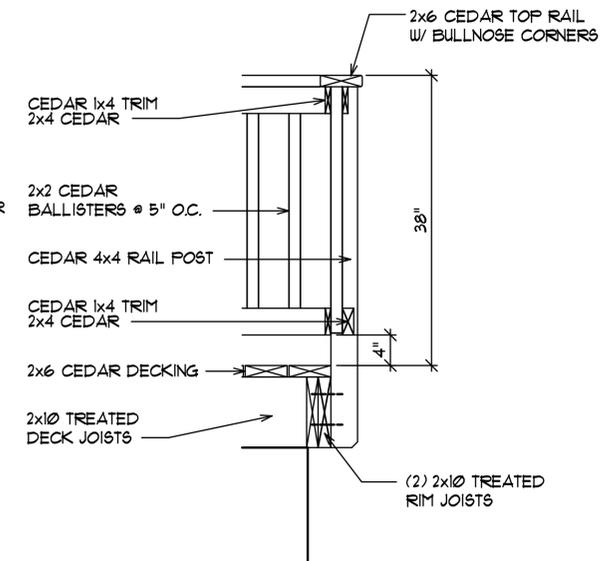
3 DECKING PLAN  
A8.1 1/4" = 1'-0"



4 DECK SECTION  
A8.1 1/2" = 1'-0"



5 ABUTMENT DETAIL  
A8.1 1" = 1'-0"



6 RAILING DETAIL  
A8.1 1" = 1'-0"

ALTERNATE 1:  
DELETE OBSERVATION DECK  
AND CONNECTING BITUMINOUS  
SPUR TRAIL.

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 ARCHITECT UNDER  
THE LAWS OF THE STATE OF  
MINNESOTA

Name: Peter K. Paulson  
Date: 1/26/2009

Reg. Number: 20131

Survey: Designed:  
Drawn: Drawn:  
Checked: Checked:  
Horz datum:  
Vert datum:

Observation  
Deck

Title:  
A8.1  
Sheet:  
Req. Number: HP070090  
File Number: SPK00173.00.73.52

**GENERAL DESIGN AND CONSTRUCTION NOTES**

- A. BUILDING CODE**
- 2007 MINNESOTA STATE BUILDING CODE (MSBC).
  - 2006 INTERNATIONAL BUILDING CODE (IBC).
- B. DESIGN LIVE LOADS**
- WIND DESIGN:
    - BASIC WIND SPEED = 90 MPH (3 SEC. GUST)
    - WIND IMPORTANCE FACTOR = 1.0
    - WIND EXPOSURE CATEGORY = B
    - INTERNAL PRESSURE COEF. = ± 0.18
    - COMPONENTS & CLADDING: SEE CHART BELOW, a = 6'-0"
  - SEISMIC LOAD: NOT APPLICABLE (MSBC).
  - ROOF LIVE LOAD: 20 PSF
  - ROOF SNOW LOAD: 60 PSF GROUND SNOW PLUS SNOW ACCUMULATION PER IBC AND ASCE 7-05.
    - FLAT ROOF SNOW LOAD (TYP). P<sub>f</sub> = 46.2 PSF
    - SNOW EXPOSURE FACTOR, C<sub>e</sub> = 1.0
    - SNOW IMPORTANCE FACTOR, I = 1.0
    - THERMAL FACTOR, C<sub>t</sub> (SKYLIGHT) = 1.0
    - THERMAL FACTOR, C<sub>t</sub> (TYP) = 1.1
    - THERMAL FACTOR, C<sub>t</sub> (EXTERIOR) = 1.2
- | FLOOR LIVE LOAD:        | UNIFORM (PSF) | CONCENTRATED (LB) |
|-------------------------|---------------|-------------------|
| ASSEMBLY AREAS, LOBBIES | 100           | -                 |
| STORES, RETAIL          | 100           | 1,000             |
| OFFICES                 | 50            | 2,000             |
| MEZZANINE               | 100           | -                 |
| MAINTENANCE AREA        | 125           | -                 |
| CATWALKS (ATRIUM ATTIC) | 40            | 300               |

**C. FOOTINGS AND FOUNDATIONS**

- CONTRACTOR SHALL FOLLOW ALL RECOMMENDATIONS OF THE GEOTECHNICAL REPORT DATED 4/8/2008 AND THE THE ADDENDUM DATED 9/25/2008 BY THE MINNESOTA DEPARTMENT OF TRANSPORTATION OFFICE OF MATERIALS (S.P. 1604-40 GRAND PORTAGE VISITORS CENTER).
- MINIMUM DEPTH FROM EXTERIOR GRADE TO BOTTOM OF FOOTINGS, WHERE PRESENT, SHALL BE 12" UNLESS NOTED OTHERWISE ON THE DRAWINGS. WHERE LESS FROST PROTECTION OCCURS, COORDINATE WITH ENGINEER FOR INSULATION REQUIREMENTS.
- RIGID INSULATION SHALL BE EXTRUDED POLYSTYRENE, 25 PSI MINIMUM COMPRESSIVE STRENGTH, MANUFACTURED FOR USE BELOW GRADE. PLACE ALL RIGID INSULATION IN TWO EQUAL THICKNESS LAYERS, STAGGER AND SEAL JOINTS.
- BOTH SIDES OF FOUNDATION WALLS SHALL BE BACKFILLED SIMULTANEOUSLY SO AS TO PREVENT OVERTURNING OR LATERAL MOVEMENT OF WALLS. BACKFILLING OF BASEMENT WALLS SHALL NOT COMMENCE UNTIL FLOOR SYSTEMS TOP AND BOTTOM ARE IN PLACE, CURED 7 DAYS, AND ALL NECESSARY BRACING HAS BEEN INSTALLED.
- PROVIDE STANDARD 90 DEGREE HOOK DOWELS BETWEEN FOUNDATIONS AND WALLS EQUAL TO THE SIZE AND SPACING OF THE VERTICAL REINFORCING UNLESS SPECIFICALLY NOTED OTHERWISE.
- ALL GRANULAR NON-FROST SUSCEPTIBLE (NFS) MATERIAL FOR USE IN EMBANKMENT OR BACKFILL UNDER BUILDING COMPONENTS SHALL BE ANY PIT-RUN OR CRUSHER-RUN MATERIAL THAT IS SO GRADED FROM COURSE TO FINE THAT THE RATIO PASSING THE #200 SIEVE DIVIDED BY THE PORTION PASSING THE 1 INCH SIEVE MAY NOT EXCEED 20 PERCENT BY MASS. THE MATERIAL SHALL NOT CONTAIN OVERSIZED SALVAGED BITUMINOUS PARTICLES OR STONE, ROCK OR CONCRETE FRAGMENTS IN EXCESS OF 3 INCHES AND FINES PASSING THE #200 SIEVE SHALL NOT EXCEED 6 PERCENT.

**D. CONSTRUCTION NOTES**

- THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF EXISTING BUILDINGS, UTILITIES, STREETS, ETC. DURING CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR DESIGN AND INSTALLATION OF ALL NECESSARY TEMPORARY BRACING.
- ANY HOLES CUT IN NEW OR EXISTING CONSTRUCTION THAT ARE NOT DETAILED ON THE STRUCTURAL DRAWINGS SHALL BE REVIEWED WITH THE STRUCTURAL ENGINEER. COORDINATE ALL HOLES AND PENETRATIONS WITH OTHER DISCIPLINES.
- THE STRUCTURE SHALL BE ADEQUATELY BRACED AND SHORED DURING ERECTION AGAINST WIND AND ERECTION LOADS. STRUCTURAL MEMBERS ARE DESIGNED FOR IN-PLACE LOADS.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF DISCREPANCIES FOUND BETWEEN CONSTRUCTION DOCUMENTS AND ACTUAL FIELD CONDITIONS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DEWATERING OF SITE THAT MAY BE REQUIRED DURING CONSTRUCTION. REFER TO ALL GEOTECHNICAL DOCUMENTS NOTED ABOVE FOR SITE CONDITIONS.
- DO NOT SCALE STRUCTURAL DRAWINGS. PLANS AND DETAILS SHALL NOT BE ASSUMED TO BE DRAWN TO SCALE.

**E. SPECIAL INSPECTIONS AND TESTING**

- SEE PROJECT "SPECIAL STRUCTURAL TESTING AND INSPECTION SUMMARY SCHEDULE" IN SPECIFICATIONS.

**CAST-IN-PLACE CONCRETE**

**A. MATERIAL PROPERTIES**

CONCRETE PROPERTIES*	MAX.		ENTR.	MAX.
	F <sub>c</sub> (PSI)	SLUMP		
FOOTINGS: .....	3,000	5	1 1/2"	0
WALLS, GRADE BEAMS: .....	4,000	4	3/4"	0"
INTERIOR SLABS: .....	4,000	4	3/4"	0
EXTERIOR SLABS, STOOPS, APRONS: .....	4,500	4	3/4"	6 ± 1.5

\* USE 6% ± 1.5% ENTRAINED AIR IF EXTERIOR CONCRETE.

**2. REINFORCING PROPERTIES:**

	FY (PSI)	ASTM
ALL BARS UNLESS NOTED OTHERWISE: .....	60,000	A615
TIES & STIRRUPS: .....	60,000	A615
WELDED WIRE FABRIC (SMOOTH, SHEETS): .....	65,000	A185
WELDABLE REINFORCEMENT: .....	60,000	A706
EPOXY COATING: .....	N/A	A775

**B. CONCRETE NOTES**

- PERFORM WORK IN ACCORDANCE WITH ACI 301-05 AND ACI 318-05.
- PROVIDE A 3/4" CHAMFER ON ALL EXPOSED CONCRETE CORNERS.
- PROVIDE LAP SPLICES AT ALL CORNERS AND INTERSECTIONS, SAME SIZE AND SPACING AS HORIZONTAL REINFORCING.
- PROVIDE SUPPORTS AND SPACERS FOR ALL REINFORCING, INCLUDING WWF.
- SEE ARCHITECTURAL PLANS FOR DEPRESSED AND SLOPED AREAS IN FLOORS NOT SHOWN ON STRUCTURAL DRAWINGS. MAINTAIN SLAB THICKNESS NOTED ON PLAN AT ALL DEPRESSIONS AND SLOPED AREAS.
- CONSOLIDATE ALL CONCRETE, INCLUDING SLABS, BY VIBRATING.
- ALL CONCRETE SHOWN SHALL BE REINFORCED. PLANS, SECTIONS AND DETAILS SHOWN WITHOUT REINFORCEMENT ARE INTENDED TO SHOW DIMENSIONS AND DETAILS OF CONSTRUCTION ONLY. REINFORCEMENT OF THESE SECTIONS SHALL BE PROVIDED IN ACCORDANCE WITH THE DETAILS SHOWING REINFORCEMENT.
- SEE "MINIMUM LAP SPLICES OF REINFORCING BARS IN TENSION" CHART ON SHEET S1-01 FOR LAP SPLICE LENGTHS.
- MIX DESIGNS SHALL INCORPORATE ADMIXTURES AS APPROPRIATE FOR ENVIRONMENTAL CONDITIONS.
- PROVIDE EXTRA REINFORCING ON EACH FACE AROUND ALL OPENINGS 24" OR LARGER IN ALL SLABS EQUAL TO (2) #5 BARS ON ALL FOUR SIDES AND EXTEND 2 FEET BEYOND OPENINGS.
- INSTALL VAPOR RETARDER UNDER ALL SLABS. ALL HOLES OR PENETRATIONS IN VAPOR RETARDER SHALL BE SEALED. PROVIDE PIPE BOOTS AT PILE LOCATIONS. VAPOR RETARDER SHALL BE 10 MIL MEETING ASTM E1745 (TYPE C) AND INSTALLED PER ASTM E1643.
- THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT:

	MINIMUM COVER (IN)
CONCRETE CAST AGAINST & PERMANENTLY EXPOSED TO EARTH: .....	3
CONCRETE EXPOSED TO EARTH OR WEATHER: #6 THRU #11 BARS: .....	2
#5 & SMALLER BARS: .....	1-1/2
CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND: SLABS AND WALLS: .....	3/4
BEAMS AND COLUMNS: .....	1-1/2

**MASONRY**

**A. MATERIAL PROPERTIES**

	STRENGTH (PSI)	ASTM
HOLLOW MASONRY UNITS (INDIVIDUAL): .....	1,900	C90-N
HOLLOW MASONRY UNITS (AVERAGE NET) F <sub>m</sub> : .....	1,500	
BRICK MASONRY (ASSY): .....	1,400	C216-SW
MORTAR TYPE S (ABOVE GRADE): .....	1,800	C270
MORTAR TYPE M (BELOW GRADE): .....	2,500	C270
GROUT (COREFILL): .....	3,000	C476
REINFORCING BARS: .....	60,000	A615
COLD DRAWN STEEL WIRE: .....	70,000	A62, GALV.

**B. MASONRY NOTES**

- DESIGN AND CONSTRUCTION SHALL COMPLY WITH ACI 530/ASCE 5/TMS 402-05 AND ACI 530.1/ASCE 6/TMS 602-05.
- ALL REINFORCEMENT SPLICES SHALL BE 48 BAR DIAMETERS UNLESS NOTED OTHERWISE.
- MASONRY WALLS SHALL HAVE CONTROL JOINTS AT A MAXIMUM SPACING OF 30 FEET UNLESS NOTED OTHERWISE. IF CONTROL JOINTS ARE NOT SPECIFICALLY SHOWN ON THE DRAWINGS, CONTRACTOR SHALL FOLLOW LOCALLY ACCEPTED PRACTICES. CONTROL JOINTS SHALL BE PLACED AT ABRUPT CHANGES IN WALL HEIGHT OR THICKNESS, ABOVE JOINTS IN FOUNDATION OR SUPPORTING FLOOR SLABS, WITHIN 15 FEET OF CORNERS AND AT ONE OR BOTH SIDES OF DOOR AND WINDOW OPENINGS, DEPENDING ON THE WIDTH AND LOCATION OF THE OPENING.
- ALL MASONRY WALLS SHALL HAVE A MINIMUM OF (1) #5 AT 48" ON CENTER (MAX.) SPACING UNLESS NOTED OTHERWISE. PROVIDE (2) #5 BARS FULL HEIGHT AT EACH CELL, AT EACH SIDE OF MASONRY OPENINGS WIDER THAN 12" AND AT CORNERS UNLESS NOTED OTHERWISE.
- PROVIDE CONTINUOUS BOND BEAM REINFORCEMENT WITH (2) #5 BARS OR AS NOTED. DISCONTINUE BARS AT CONTROL JOINTS UNLESS NOTED OTHERWISE.

**MASONRY NOTES (CONT.)**

- ALL GROUT SHALL BE CONSOLIDATED BY MECHANICAL VIBRATION OR PUDDLING. RECONSOLIDATE GROUT POURS EXCEEDING 12" IN HEIGHT.
- WHEN GROUT IS STOPPED FOR ONE HOUR OR LONGER, HORIZONTAL CONSTRUCTION JOINTS SHALL BE FORMED BY STOPPING THE GROUT POUR 1-1/2" BELOW THE TOP OF THE UPPERMOST UNIT. IF THE UPPERMOST UNIT IS A BOND BEAM, STOP POUR 1/2" BELOW THE TOP OF MASONRY.
- GROUT LIFTS SHALL NOT EXCEED 5 FEET WITHOUT APPROVAL OF THE ENGINEER.
- SECURE VERTICAL REINFORCING IN REQUIRED ALIGNMENT BEFORE GROUTING.
- ALL HOLLOW UNIT BLOCK COMPRESSION STRENGTHS REQUIRED TO ACHIEVE THE F<sub>m</sub> STATED ABOVE SHALL BE ACCORDING TO IBC SECTION 2105.2.2.2 PRISM TEST METHOD.
- SUBMIT SHOP DRAWINGS CLEARLY SHOWING REINFORCEMENT LAYOUT, SIZE, SPACING AND DETAILS TO ARCHITECT/ENGINEER FOR REVIEW.
- PROVIDE 9 GAUGE, HOT-DIP GALVANIZED HORIZONTAL JOINT REINFORCEMENT (DUR-O-WALL OR EQUAL) EVERY COURSE IN STACK BOND WALLS AND EVERY OTHER COURSE IN RUNNING BOND WALLS. WALLS SHALL BE RUNNING BOND UNLESS NOTED OTHERWISE.

**STRUCTURAL STEEL**

**A. MATERIAL PROPERTIES**

STEEL PROPERTIES:	Fy (PSI)	Fu (PSI)	ASTM
W SHAPES: .....	50,000	65,000	A992, A572
OTHER SHAPES, PLATES: .....	36,000	58,000	A36, A283
HOLLOW STRUCT. SECTIONS (SQUARE): .....	46,000	58,000	A500, GR B
HOLLOW STRUCT. SECTIONS (ROUND): .....	42,000	58,000	A500, GR B
HIGH STRENGTH BOLTS, U.N.O., BEARING CONNECTIONS: .....	92,000	120,000	A325N
HIGH STRENGTH BOLTS, SLIP CRITICAL CONNECTIONS, (WHERE NOTED): .....	92,000	120,000	A325 SC CLASS A
NUTS: .....	-	-	A563 HEAVY HEX
WASHERS: .....	-	-	F438 HARDENED STEEL
ANCHOR BOLTS: .....	36,000	58,000	F1554 OR A36
WELDING ELECTRODES: .....	-	-	E70XX A233

**2. GROUT: NONSHRINK, NON-METALLIC AGGREGATE TYPE, COMPLYING WITH ASTM C1107 AND CAPABLE OF DEVELOPING A MINIMUM COMPRESSIVE STRENGTH OF 7,000 PSI AT 28 DAYS.**

**B. STRUCTURAL STEEL NOTES**

- STRUCTURAL STEEL DESIGN AND CONSTRUCTION SHALL CONFORM TO AISC STEEL CONSTRUCTION MANUAL & SPECIFICATIONS (AISC 360-05), THIRTEENTH EDITION.
- THE CONTRACTOR AND FABRICATOR SHALL REVIEW THE CONTRACT DOCUMENTS AND INCORPORATE ANY ADDITIONAL PROVISIONS NECESSARY TO MEET APPLICABLE SAFETY REGULATIONS.
- ALL SHOP CONNECTIONS SHALL BE WELDED AND FIELD CONNECTIONS BOLTED U.N.O. ALL WELDING SHALL BE BY AN AWS CERTIFIED WELDER.
- UNLESS NOTED OTHERWISE, CONNECTIONS SHALL BE DESIGNED BY THE FABRICATOR. ALL DETAILING SHALL CONFORM TO AISC AND OSHA ERECTION STANDARDS.
- THIS STRUCTURE IS A NON-SELF SUPPORTING STEEL FRAME REQUIRING INTERACTION WITH OTHER ELEMENTS TO PROVIDE THE REQUIRED STABILITY. THE STEEL ERECTOR SHALL PROVIDE TEMPORARY SUPPORTS UNTIL FINAL STABILITY IS PROVIDED. AS A MINIMUM, TEMPORARY SUPPORTS SHALL BE PROVIDED AT EACH COLUMN IN BOTH DIRECTIONS.

**CONCRETE-FILLED STEEL PILE**

- PIILING SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT DATED 4/8/2008 BY THE MINNESOTA DEPARTMENT OF TRANSPORTATION OFFICE OF MATERIALS (S.P.1604-40 GRAND PORTAGE VISITORS CENTER).
- ALL PILE SHALL MEET ASTM A252. PILE SIZES, WALL THICKNESS, CAPACITIES AND MINIMUM YIELD STRENGTH SHALL BE AS SPECIFIED.
- PILE SHALL HAVE A CONTINUOUSLY WELDED STEEL END PLATE TO PREVENT SOIL AND WATER FROM ENTERING PILE DURING DRIVING.
- PILE SHALL BE FILLED WITH CONCRETE GROUT PLACED IN A SINGLE POUR AND VIBRATED FULL DEPTH.
- PROVIDE SHOP DRAWINGS FOR PROPOSED DETAILS AND PROCEDURES FOR PILE INSTALLATION.
- PROVIDE MANUFACTURER'S MILL CERTIFICATE, CERTIFYING THAT THE STEEL CASINGS MEET OR EXCEED SPECIFIED REQUIREMENTS.
- SET TOPS OF PILE TO ELEVATIONS INDICATED. PREPARE PILE TOPS TO RECEIVE PILE CAPS OR GRADE BEAMS AS INDICATED.
- ACCURATELY RECORD SIZES, LENGTHS AND LOCATIONS OF PILE, INCLUDING FINAL HEAD ELEVATIONS.
- INSTALLER SHALL BE A COMPANY HAVING A MINIMUM OF 5 YEARS RELATED EXPERIENCE, SPECIALIZING IN PILE-DRIVING.
- CONVENE ONE WEEK PRIOR TO COMMENCING PILE DRIVING WORK FOR PRE-INSTALLATION MEETING.

**CONCRETE-FILLED STEEL PILE NOTES (CONT.)**

- FIELD INSPECTIONS WILL BE PROVIDED BY OWNER'S REPRESENTATIVE. CONTRACTOR SHALL NOTIFY OWNER'S REPRESENTATIVE 48 HOURS PRIOR TO PERFORMING WORK.
- THREE (3) PRODUCTION PILE ARE DESIGNATED AS TEST PILE TO BE TESTED BY THE OWNER'S REPRESENTATIVE ACCORDING TO PROJECT SPECIFICATIONS. ACCEPTED PILE MAY BE USED IN THE WORK. PILE THAT FAIL TESTS, ARE PLACED OUT OF POSITION, ARE BELOW CUT-OFF ELEVATIONS OR ARE DAMAGED WILL BE REJECTED. PROVIDE ADDITIONAL PILE OR REPLACE REJECTED PILE TO CONFORM TO SPECIFIED REQUIREMENTS. TEST PILE ARE NOTED ON THE PLAN AND SHALL BE THE FIRST PILE DRIVEN.
- ALL SPLICES SHALL BE SHOP OR FIELD WELDED SPLICES. DRIVING FIT PILE SPLICES WILL NOT BE ACCEPTED.
- CONTRACTOR SHALL SEQUENCE PILE INSTALLATION SUCH THAT PILE AROUND THE PERIMETER OF THE BUILDING WILL BE INSTALLED FIRST, THEN INSTALLATION SHALL WORK TO THE INTERIOR OF THE BUILDING TO TAKE ADVANTAGE OF ANY POSSIBLE SUBSURFACE CONSOLIDATION.

**CARPENTRY**

**A. DIMENSIONAL LUMBER**

- DESIGN AND CONSTRUCTION SHALL CONFORM TO AF&PA NDS-05.
- ALL DIMENSIONAL LUMBER SHALL BE GRADE STAMPED AND COMPLY WITH DOOIPS-20-05 GRADING AND INSPECTION REQUIREMENTS.
- DIMENSIONAL LUMBER SHALL MEET THESE MINIMUM GRADES U.N.O.:  
STRUCTURAL FRAMING (SHOWN ON STRUCTURAL DRAWINGS): ..... SPF NO. 2 OR BETTER  
NON-STRUCTURAL FRAMING: ..... SPF NO. 2 OR BETTER, OR STUD GRADE  
MISC BLOCKING/FURRING: ..... SPF NO. 3 OR BETTER, OR STUD GRADE

\* TREATED PER SPECIFICATION IF IN CONTACT WITH CONCRETE OR MASONRY.

- ALL STRUCTURAL WOOD FRAMING SHALL BE FASTENED ACCORDING TO IBC TABLE 2304.9.1 UNLESS MORE STRINGENT FASTENING IS SPECIFIED.
- WOOD LINTELS SHALL HAVE A FULL 3 INCH LENGTH OF BEARING AT EACH END UNLESS NOTED OTHERWISE.

- ALL BEAMS AND JOISTS NOT BEARING ON SUPPORTING MEMBERS SHALL BE FRAMED WITH PREFABRICATED METAL JOIST HANGERS OF REQUIRED CAPACITY, MANUFACTURED BY SIMPSON, USP OR EQUAL.

- ALL METAL FASTENERS, ANCHORS AND CONNECTORS IN CONTACT WITH TREATED LUMBER SHALL BE STAINLESS STEEL OR HAVE ASTM A663 G185 GALVANIZED FINISH.

- ALL STRUCTURAL WALLS SHALL HAVE A DOUBLE TOP PLATE. SPLICE WITH TYPICAL SPLICE PER 5/101 UNLESS NOTED OTHERWISE.

- ANCHOR ROD AND HOLD-DOWN NUTS SHALL BE FINGER-TIGHT PLUS 1/3 TO 1/2 TURN WITH A WRENCH.

- MULTI-PLY COLUMN NAILING REQUIREMENTS:
  - USE 3" X .131" n NAILS.
  - ADJACENT NAILS DRIVEN FROM OPPOSITE SIDES OF THE COLUMN.
  - SPACE BETWEEN ADJACENT NAILS IN A ROW = 6"
  - (2) ROWS OF NAILS.
  - REFER TO SHEAR WALL REQUIREMENTS AT SHEAR WALL END POSTS.

- ALL STRAPS, HOLD-DOWNS, CONNECTORS, ETC. REFER TO SIMPSON STRONG-TIE (SST) DESIGNATIONS. SEE [www.strongtie.com](http://www.strongtie.com) FOR PRODUCT INFORMATION
- TYPICAL NAILS SHALL BE 3" X 0.131" UNLESS NOTED OTHERWISE.

**B. LAMINATED VENEER LUMBER (LVL)**

- LAMINATED VENEER LUMBER SHALL MEET THESE MINIMUM PROPERTIES:  
ALLOWABLE BENDING STRENGTH: ..... F<sub>b</sub> = 2600 PSI  
ALLOWABLE SHEAR STRENGTH: ..... F<sub>v</sub> = 265 PSI  
ALLOW. COMPR. STR. PERP. TO GRAIN: ..... F<sub>c</sub> (perp.) = 750 PSI  
MODULUS OF ELASTICITY: ..... E = 1,800,000 PSI
- ALL LVL'S SHALL BE NAILED TOGETHER WITH (2) ROWS OF 16d NAILS AT 12" ON CENTER OR 3 ROWS OF 16d NAILS AT 12" O.C. FOR 14", 16" AND 18" BEAMS, STAGGERED UNLESS NOTED OTHERWISE.

**C. GLULAM MEMBERS**

- DESIGN AND CONSTRUCTION SHALL CONFORM TO ANSII/ATC A190.1-02 AND AITC 117-04.
- ALL MEMBER SIZES GIVEN ON PLAN ARE ACTUAL DIMENSIONS AND SHALL CONFORM TO ANSII/ATC A190.1.
- SIMPLE SPAN GLULAM MEMBERS SHALL BE DOUGLAS-FIR 24F-V4, CONTINUOUS OR CANTILEVERED MEMBERS SHALL BE 24F-V8. THE FOLLOWING MINIMUM DESIGN VALUES UNDER DRY USE SHALL APPLY :  
ALLOW. BENDING STR. (TENS. ZONE): ..... F<sub>b</sub> = 2400 PSI  
ALLOWABLE SHEAR STRENGTH: ..... F<sub>v</sub> = 165 PSI  
ALLOW. COMPR. STR. PERP. TO GRAIN: ..... F<sub>c</sub> (perp.) = 650 PSI  
ALLOW. COMPR. STRENGTH: ..... F<sub>c</sub> (parallel) = 1650 PSI  
ALLOW. TENSION: ..... F<sub>t</sub> (parallel) = 1100 PSI  
MODULUS OF ELASTICITY: ..... E = 1,800,000 PSI
- ADHESIVES SHALL MEET THE REQUIREMENTS OF WET CONDITION OF USE.
- FACTORY APPLY ONE COAT OF SEALER TO THE ENDS OF ALL MEMBERS IMMEDIATELY AFTER TRIMMING. FIELD APPLY ONE COAT OF SEALER TO ALL FIELD CUTS IMMEDIATELY AFTER TRIMMING.
- ALL MEMBERS SHALL BE ARCHITECTURAL APPEARANCE GRADE UNLESS NOTED OTHERWISE.
- ALL GLULAM MEMBERS SHALL BE FULLY WRAPPED FOR SHIPPING. DO NOT REMOVE WRAPPING UNTIL IT NO LONGER SERVES A USEFUL PURPOSE. COORDINATE WRAPPING REMOVAL WITH INTERIOR FINISH AND PAINT WORK.

**CARPENTRY NOTES (CONT.)**

- THE GLULAM MANUFACTURER IS RESPONSIBLE FOR AND SHALL SUBMIT SHOP DRAWINGS AND CALCULATIONS CERTIFIED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF THE PROJECT. FOR ALL ELEMENTS AND MEMBERS DESIGNED BY THE GLULAM MANUFACTURER.
- PORTIONS OF GLULAM MEMBERS EXPOSED TO THE WEATHER, SUCH AS OVERHANGS, SHALL BE PROTECTED WITH METAL FLASHING OR OTHERWISE TREATED.
- INSTALLER SHALL BE A COMPANY HAVING A MINIMUM OF 5 YEARS RELATED EXPERIENCE, SPECIALIZING IN INSTALLING GLUED, LAMINATED TIMBER.

**D. WOOD TRUSSES**

- THE DESIGN AND FABRICATION OF ALL TRUSSES SHALL CONFORM TO ANSII/TPI 1-02 AND AF&PA NDS-05.
- FURNISH AND INSTALL ALL BRIDGING, TRUSS TO BEAM CONNECTIONS, HEADERS AND TOP / BOTTOM CHORD EXTENSIONS, ETC. AS NECESSARY NECESSARY TO PROVIDE A COMPLETE INSTALLATION.
- PLACEMENT OF MECHANICAL UNITS AND HANGERS SUPPORTED BY ROOF TRUSSES IS SUBJECT TO THE APPROVAL OF THE STRUCTURAL ENGINEER.
- TRUSSES SHALL NOT BE CUT, NOTCHED, DRILLED OR OTHERWISE ALTERED WITHOUT WRITTEN APPROVAL FROM A REGISTERED DESIGN PROFESSIONAL.
- DEFLECTION LIMITS:  
ROOF LIVE LOAD: ..... L/360  
ROOF TOTAL LOAD: ..... L/240  
FLOOR LIVE LOAD: ..... L/480  
FLOOR TOTAL LOAD: ..... L/360

- DESIGN ROOF TRUSSES FOR A MINIMUM TOP CHORD DEAD LOAD OF 6 PSF, BOTTOM CHORD DEAD LOAD OF 10 PSF AND SNOW LOADS AS DESCRIBED IN THE GENERAL DESIGN AND CONSTRUCTION NOTES, INCLUDING DRIFT, SLIDING SNOW AND UNBALANCED SNOW LOADING CONDITIONS. AN ADDITIONAL TOP CHORD DEAD LOAD OF 5 PSF (MIN.) SHALL BE INCLUDED AT OVERFRAMING LOCATIONS INDICATED ON ROOF FRAMING PLAN.

- THE TRUSS MANUFACTURER IS RESPONSIBLE FOR AND SHALL SUBMIT SHOP DRAWINGS AND CALCULATIONS CERTIFIED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF THE PROJECT. FOR ALL ELEMENTS AND MEMBERS DESIGNED BY THE TRUSS MANUFACTURER.

- ALL NAILING INTO TRUSSES SHALL AVOID PLACEMENT INTO PRESS-PLATE TRUSS CONNECTORS.

**E. WOOD SHEATHING**

- WOOD FLOOR SHEATHING: 24" SPAN RATING, 3/4" NOMINAL THICKNESS. ATTACH WITH 10d COMMON NAILS AT 6" O.C. AT EDGES AND 12" O.C. AT INTERMEDIATE SUPPORTS, UNBLOCKED.
- WOOD ROOF SHEATHING: 24/16 SPAN RATING, 5/8" NOMINAL THICKNESS. ATTACH WITH 10d COMMON NAILS AT 6" O.C. AT EDGES AND 12" O.C. AT INTERMEDIATE SUPPORTS, UNBLOCKED.
- WOOD WALL SHEATHING: 24/16 SPAN RATING, 1/2" NOMINAL THICKNESS (7/16" OR 15/32"). ATTACH WITH 1.31 DIA. X 2-1/2" NAILS AT 6" O.C. AT EDGES AND 12" O.C. AT INTERMEDIATE SUPPORTS. UNBLOCKED (UNLESS NOTED OTHERWISE).

**COMPONENTS & CLADDING DESIGN WIND PRESSURES**

LOCATION	ZONE	PRESSURE
ROOF	NEGATIVE ZONE 1	-15 PSF
	NEGATIVE ZONE 2	-22 PSF
	NEGATIVE ZONE 3	-35 PSF
	POSITIVE ZONE 1	10 PSF
	POSITIVE ZONE 2	10 PSF
	POSITIVE ZONE 3	10 PSF
	OVERHANG ZONE 2	-32 PSF
WALLS	OVERHANG ZONE 3	-42 PSF
	NEGATIVE ZONE 4	-17 PSF
	NEGATIVE ZONE 5	-20 PSF
	POSITIVE ZONE 4 & 5	15 PSF

ALL ELEVATIONS ARE BASED ON  
100'-0" = 633'-0"  
SEE CIVIL/LANDSCAPE

**SHEET INDEX**

S1.00	GENERAL NOTES
S1.01	SCHEDULES & TYPICAL DETAILS
S2.00	PILE & GRADE BEAM PLAN
S2.01	FOUNDATION & SLAB PLAN
S2.02	SECOND FLOOR & LOW ROOF FRAMING PLAN
S2.03	HIGH ROOF FRAMING PLAN
S3.00	PARTIAL PLANS & DETAILS
S4.00	DETAILS
S4.01	DETAILS
S4.02	DETAILS



**Management Resources**

Safety  
Facilities  
Materials  
Equipment  
Field Operations  
Information Management

**DNR Division of Parks and Recreation**

**Grand Portage State Park**

Visitor's Center  
MN DOT Rest Area

Cook County Near Grand Portage  
Section: 30 Township: 64 N Range: 07 E

21 W. Superior Street  
Suite 500  
Duluth, MN 55802

TEL 218/727-8446  
FAX 218/727-8456

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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

Name: *Christopher A. Gardner*

Christopher A. Gardner

Date: 1/26/2009

Reg. Number: 44982

Survey: \_\_\_\_\_ Designed: CAG

Drawn: \_\_\_\_\_ Drawn: CLG

Checked: \_\_\_\_\_ Checked: \_\_\_\_\_

Horz datum: \_\_\_\_\_

Vert datum: \_\_\_\_\_

Title: **General Notes**

S1.00

Req. Number: HP070090

File Number: SPK00173.00.73.52

Management  
Resources

Safety  
Facilities  
Materials  
Equipment  
Field Operations  
Information Management

DNR Division of  
Parks and Recreation

Grand Portage  
State Park

Visitor's Center  
MN DOT Rest Area

Cook County Near Grand Portage  
Section: 30 Township: 64 N Range: 7 E

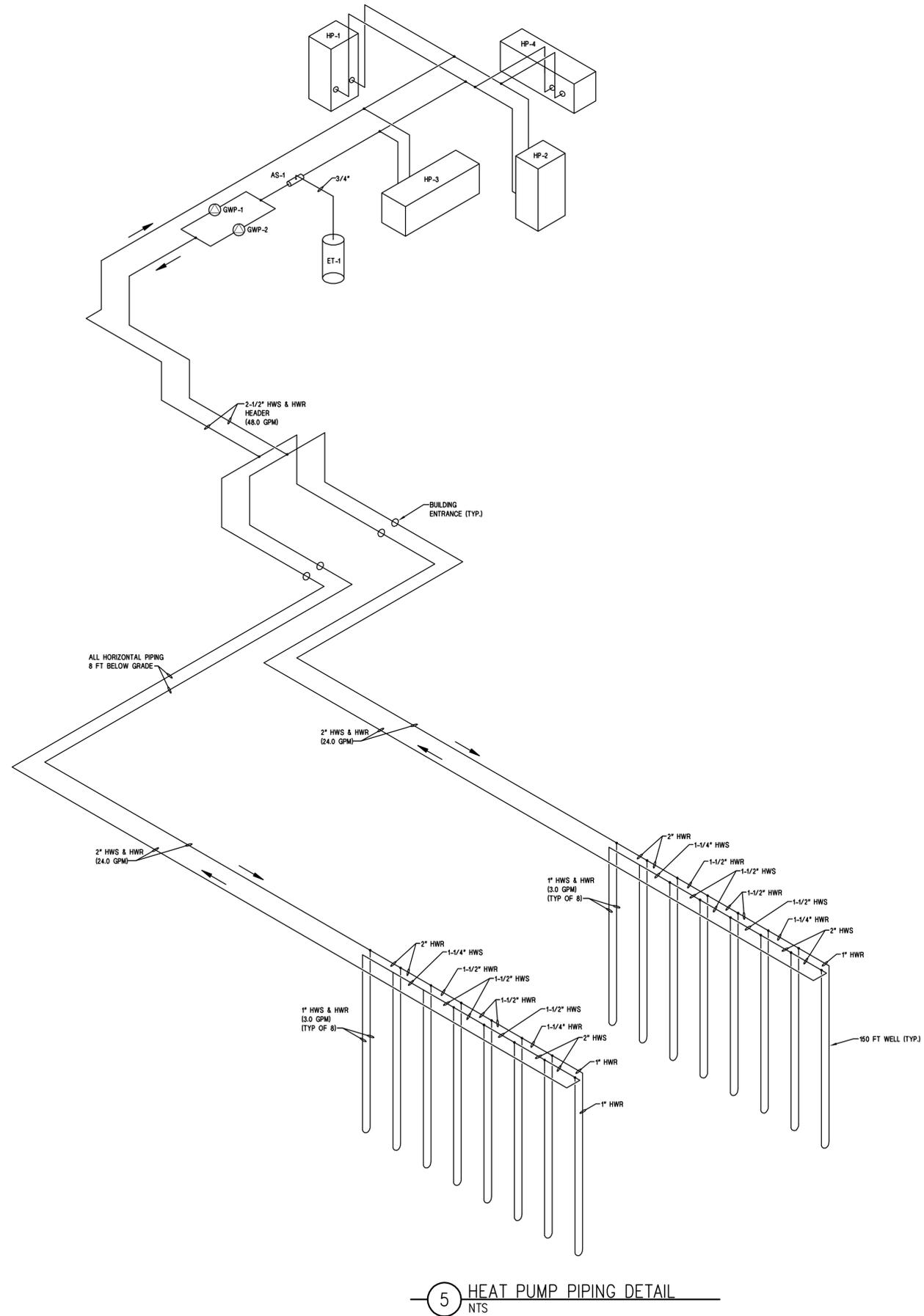
21 W. Superior Street  
Suite 500  
Duluth, MN 55802



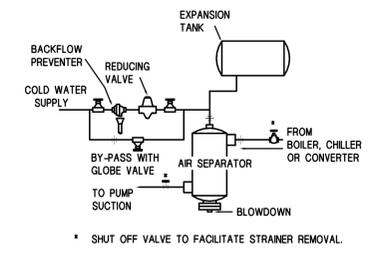
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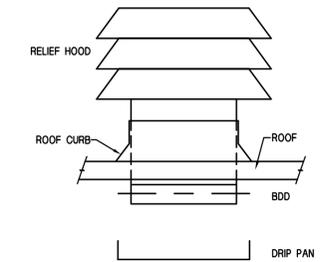


5 HEAT PUMP PIPING DETAIL  
NTS

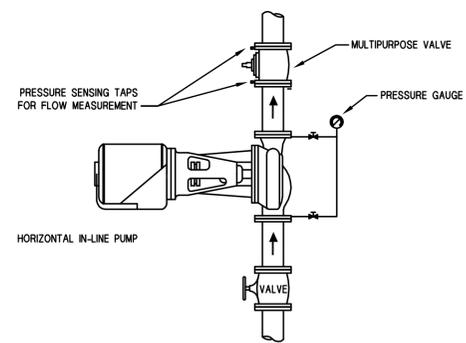


\* SHUT OFF VALVE TO FACILITATE STRAINER REMOVAL.

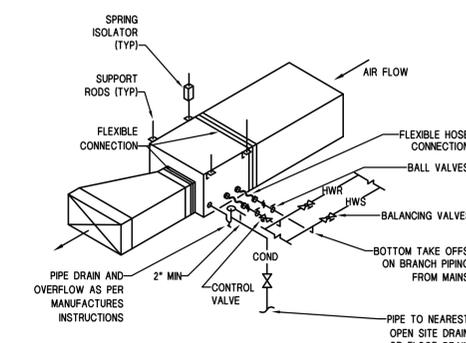
4 AIR SEPARATION DETAIL  
NTS



3 INTAKE HOOD DETAIL  
NTS



2 HORIZONTAL IN-LINE PUMP DETAIL  
NTS



1 HEAT PUMP PIPING DETAIL  
NTS

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Name: *Ryan K. Thorson*

Ryan Thorson  
Date: 01/26/2009

Reg. Number: 41496

Survey: Designed: RKT  
Drawn: Drawn: ELT  
Checked: Checked:  
Horz datum:  
Vert datum:

Mechanical Details

Title:

Sheet: **M6.02**

Req. Number: HP070090  
File Number: SPK00173.00.73.52