CONSTRUCTION PLANS FOR:
HARTLEY ROAD TRAIL IMPROVEMENTS

CITY OF DULUTH
DEPARTMENT OF PARKS AND RECREATION

PROJECT LOCATION MAP

KEY PLAN

SITE LOCATION

WARNING:
LOCATION OF UNDERGROUND UTILITIES TO BE VERIFIED BY CONTRACTOR. CALL BEFORE DIGGING. Gopher State One Call 1.800.252.1188 REQUIRED BY LAW

GOVERNING SPECIFICATIONS
THE 2015 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL APPLY.

INDEX

<table>
<thead>
<tr>
<th>SHEET NO.</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TITLE SHEET &amp; INDEX MAP</td>
</tr>
<tr>
<td>2</td>
<td>OVERALL PLAN AND WORK DESCRIPTION</td>
</tr>
<tr>
<td>3</td>
<td>TRAIL SECTION A1</td>
</tr>
<tr>
<td>4</td>
<td>TRAIL SECTION A2</td>
</tr>
<tr>
<td>5</td>
<td>TRAIL SECTION A3</td>
</tr>
<tr>
<td>6</td>
<td>TRAIL SECTION A4</td>
</tr>
<tr>
<td>7</td>
<td>TRAIL SECTION A5</td>
</tr>
<tr>
<td>8</td>
<td>TRAIL SECTION A6</td>
</tr>
<tr>
<td>9</td>
<td>TRAIL SECTIONS A7 &amp; A8</td>
</tr>
<tr>
<td>10</td>
<td>BOARDWALK, BASE AND TYPICAL CONSTRUCTION</td>
</tr>
<tr>
<td>11</td>
<td>WETLAND BOARDWALK, SECTION &quot;A&quot; ALTERNATE 3</td>
</tr>
<tr>
<td>12</td>
<td>BOARDWALK OVERLOOK, SECTION &quot;A&quot;</td>
</tr>
<tr>
<td>13-16</td>
<td>EXISTING TRAIL CONDITION PHOTOS</td>
</tr>
</tbody>
</table>

THIS PLAN SET CONTAINS 16 SHEETS

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULUTH LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA.

Luke W. Sydow
LANDSCAPE ARCHITECT (HPD 004089)

APPROVED PARKS MANAGER

CITY OF DULUTH PROJECT NO. 15-005

DEPARTMENT OF PARKS AND RECREATION

CITY OF DULUTH PROJECT NO.

LWS

SHEET NO. 1 OF 16

DEPARTMENT OF PARKS AND RECREATION

CITY OF DULUTH PROJECT NO.

LWS

SHEET NO. 1 OF 16
TRAIL SECTION NOTES:

1. Quantities and scope of work for design intent only. Contractor shall field verify conditions, quantities, and materials may vary. Adjustments to quantities and materials will be on a lump-sum basis.

2. Contractors shall be responsible for restoring Pre-construction condition any surfaces, structural, site elements such as steps, walls, benches, railings, etc., damaged due to their work under the contract, at no additional cost to the owner unless agreed to in writing by both parties.

3. 4" mood select topside, seed and erosion control blanket on all disturbed surfaces beyond new trail surface edge.

4. Erosion control measures such as hay bales, silt fences, bio log, etc., shall be in place prior to the commencement of any other work and must be maintained in its operational state until acceptance of the project by the city of Duluth. Once site is stabilized and project accepted, contractor shall promptly remove all erosion control measures as directed.

5. Site disturbance beyond edge of grading/fill is prohibited.

6. Clearing and grubbing will be necessary along the entire corridor length limit of work and site disturbance shall be marked on the site by contractor for review and approval by the city of Duluth. Prior to the start of any work, care must be taken at all times to minimize all site impacts to soil and vegetation outside what is required for this work.

7. Contractor shall submit for review and approval, structural shop drawings signed by Minnesota-registered structural engineer for helical piers and all boardwalk construction.

8. Contractor shall establish all reasonable barricades, signage, trail closures, etc., to ensure safety of the public during the work.

9. All trails shall be constructed in accordance with the specifications and the Typical Trail, Cross Section and Trail Cross Section Types A, B, and C as shown on Sheet L-4, L-5, and L-7. Other requirements and details on Sheets L-8 through L-12.

10. Submit to owner of site sample of limestone trail surfacing material for approval prior to placement.

TRAIL AREA SUMMARIES:

A

B

1. WIDE ROAD BED EXISTING
2. TRAIL REMAINS MOSTLY DRY
3. GOOD TRAIL CONDITION
4. DEFINE TRAIL WIDTH
5. INSTALL 10'-WIDE BOARDWALKS WHERE INDICATED

C

D

1. NARROW ROAD BED EXISTING
2. WETLAND TRAIL EDGES
3. CREATE 10' WIDE FINISHED TRAIL SURFACE
4. FABRICATE AND INSTALL 10'-WIDE BOARDWALKS WHERE INDICATED

E

F

1. WIDE ROAD BED EXISTING
2. TRAIL SURFACE ERODED
3. STABILIZE SURFACE
4. DEFINE 10'-WIDE TRAIL SURFACE
5. DIRECT WATER RUN-OFF

G

H

1. WIDE ROAD BED EXISTING
2. TRAIL SURFACE ERODED
3. DEFINE 10'-WIDE TRAIL SURFACE
4. DIRECT WATER RUN-OFF INTO NEW SWALE

NOTE: THE SURFACES OF ALL TRAIL TYPES (NOT INCLUDING BOARDWALKS) SHALL BE CONSTRUCTED WITH 4" OF CLEAN, COMPACTED CLASS V LIMESTONE.

TRADE AREA SUMMARIES:

B

C

D

E

F

G

H

1. FURNISH AND INSTALL NEW WET MEADOW BOARDWALK OVERLOOK.
TRAIL TYPE "B"  
TRAIL TYPE "A1"  
SUPERIOR HIking TRAIL

EXISTING CONCRETE CULVERT TO REMAIN

NEW 12" CULVERT. TYP. FIELD LOCATED.

TRAIL TYPE "A1" & "A2"

EXISTING GRADE - FIELD VERIFY.

EXISTING TRAIL SURFACE, SLOPE & CONDITION V ARIES. REGRADE AS NEEDED TO E STABLISH A SMOOTH, SURFACE WITH MINIMAL CROSS-SLOPE. COMPACT.

NEW 4" COMPACTED CLASS V LIMESTONE ACCESSIBLE TRAIL SURFACE

TRAiL SURFACE - 10.0' WIDE

BACKSLOPE AT 3:1 NEW EXISTING GRADE

A1 - +/- 1,100 L.F. 5 PIPES REQUIRED
A2 - +/- 300 L.F. 1 PIPE REQUIRED

EXISTING ROAD BED - 9' - 12' WIDE

BACKSLOPE AT 3:1 MEET EXISTING GRADE

TILL AND BACKBLADE EXISTING ROAD BED ALONG SIDES OF EXISTING TRAIL CORRIDOR TO A 10' CLEAR WIDTH. REMOVE VEGETATION FROM TILLED AREA PRIOR TO COMPACTING AND ADDING 4" LIMESTONE SURFACING.

DRAIN PIPE SHALL BE 12" DIAMETER HOPE PIPE WITH SMOOTH INTERIOR WALL. PIPES FIELD LOCATED BY LANDSCAPE ARCHITECT. LENGTH VARIES. SLOPE TO DRAIN. PROVIDE BIO-ROLL EROSION CONTROL. PROTECTION AT CULVERT INLET. PROVIDE RIP-RAP AND SILT FENCE PROTECTION AT CULVERT OUTLETs.

12" HOPE PIPE

EXISTING GRADE - FIELD VERIFY.

WOODHAVEN LANE

EXISTING CONCRETE CULVERT TO REMAIN

NEW 12" CULVERT. TYP. FIELD LOCATED.
TRAIL SURFACE - 10.0' WIDE
CENTER TRAIL IN EXISTING TRAIL CORRIDOR
NEW 4" COMPACTED CLASS V LIMESTONE ACCESSIBLE TRAIL SURFACE
EXISTING TRAIL SURFACE - 5'-7' WIDE
EXISTING GRADE - FIELD VERIFY.

WOVEN GEOTEXTILE FABRIC. NO FABRIC IS TO BE EXPOSED. ALL FABRIC AT EDGES SHALL HAVE 2" MINIMUM COVER

2% SLOPE MAX
WATER PONDING ON SIDES OF TRAIL
12" MIN. COVER ABOVE PIPE

REGRADE AREA BESIDE REALIGNITED TRAIL TO PROVIDE WATER STORAGE AND INFILTRATION. REGRADE AS NEEDED FOR BOTTOM OF 8" PIPE TO BE 4" ABOVE FINISHED GRADE. DITCHING DEPTH NOT TO INTERFERENCE WITH EXISTING BLUESTONE BOULDER SUB-BASE. TYPICAL.

TRAIL SURFACE - 10.0' WIDE CENTER TRAIL IN EXISTING TRAIL CORRIDOR
12" HDPE PIPE
12" SPIRE PIPE
EXISTING TRAIL SURFACE - 6'-7" WIDE

ADJUSTED TRAIL CENTERLINE
NEW 12" PIPE, TYP. FIELD LOCATED.

TRAIL TYPE "A1"
TRAIL TYPE "B"
TRAIL TYPE "C"

SUPERIOR HIKING TRAIL

BOARDWALK SEE SHEET L-11. DEDUCT #1

STRAIGHTEN TRAIL
RAISE SURFACE TO AVOID OVER-TOPPING OF TRAIL BY PONDING WATER
INSTALL DRAIN PIPE BENEATH TRAIL
WATER PONDING ON SIDES OF TRAIL

REGRADE AREA BESIDE REALIGNITED TRAIL TO PROVIDE WATER STORAGE AND INFILTRATION. REGRADE AS NEEDED FOR BOTTOM OF 8" PIPE TO BE 4" ABOVE FINISHED GRADE. DITCHING DEPTH NOT TO INTERFERENCE WITH EXISTING BLUESTONE BOULDER SUB-BASE. TYPICAL.

TRAIL TYPE "B"
12" HDPE PIPE
EXISTING TRAIL SURFACE - 6'-7" WIDE

TRAIL TYPE "A1"

SUPERIOR HIKING TRAIL

WEB SITE - www.SASlandscape.com

ADJUSTED TRAIL CENTERLINE
REMOVE ALL EXISTING BOARDWALKS
6 SECTIONS - 151 +/- LF

FILL AREAS AT BOARDWALKS 4, 5, & 6 TO CREATE 10' WIDE LIMESTONE TRAIL SURFACE. FLOW TO BE REDIRECTED BENEATH NEW BOARDWALK #3.

REPLACE BOARDWALKS 1, 2 & 3 WITH NEW 10' WIDE BOARDWALKS ON STACKED TIMBER SUPPORTS (BASE BID). BID ALTERNATE TO INSTALL WICKCRAFT COMPANY, INC., BOARDWALKS IN LIEU OF TIMBER SUPPORTED WOODEN BOARDWALKS. SEE PLANS AND DETAILS SHEET L-10.

NEW BOARDWALKS SHALL BE INSTALLED AT A HEIGHT TO MAINTAIN FREE-FLOW OF WATER BENEATH STRUCTURE. EXCAVATION BENEATH BOARDWALKS MAY BE NECESSARY. DO NOT CHANGE EXISTING WATER FLOW ELEVATIONS OR PATTERNS.

ANY ADJUSTMENTS TO THE ALIGNMENT OF THE EXISTING CENTER LINE OF TRAIL TO BE FIELD STAKED FOR APPROVAL AND ADJUSTED AS DIRECTED.

FROG POND. DO NOT DISTURB.
WATER LEVEL AND FLOW MUST BE IDENTICAL TO CURRENT EXISTING CONDITIONS.

NOTE:
SEE SHEET L-10 FOR TRAIL TYPE "C" AND BOARDWALK DETAILS
EXISTING TRAIL SURFACE - 10.0' WIDE

3:1 SLOPE

NEW 4" COMPACTED CRUSHED LIMESTONE ACCESSIBLE TRAIL SURFACE

EXISTING GRADE - FIELD VERIFY.

EXISTING TRAIL SURFACE IS RUTTED AND ERODED. RE-GRADE, ADD COMPACTED CLASS V TO ENSURE POSITIVE DRAINAGE OFF THE TRAIL, WHEN FINAL SURFACE IS INSTALLED, FIELD VERIFY.

TRAIL SECTION "D"

ERODED TRAIL SECTION

TRAIL TYPE "C"

TRAIL TYPE "D"

TRAIL TYPE "E"

EXISTING GRADE - FIELD VERIFY.

EXISTING ROAD BED - 9' - 12' WIDE

2% SLOPE MAX

TRAIL TYPE "D"

TRAIL TYPE "E"

TRAIL TYPE "C"

EXISTING GRADE - FIELD VERIFY.

EXISTING TRAIL SURFACE - 5' - 10' WIDE

BACKSLOPE AT 3:1.

MEET EXISTING GRADE
EXISTING STONE-LINED DRAINAGE DITCH TO REMAIN TO COLLECT WATER FROM HILLSIDE ABOVE.

NEW ROCK CHECK DAMS W/ 3" - 6" ROCK TO DIRECT WATER INTO NEW 12" PIPE.

BIO-ROLL PROTECTION.

TRAIL TYPE "A"

EXISTING TRAIL SURFACE - 5' - 10' WIDE
EXISTING ROAD BED - 9' - 12' WIDE
EXISTING GRADE - FIELD VERIFY.

BACKSLOPE AT 3:1.

EXISTING GRADE - FIELD VERIFY.

PLACE TOPSOIL TO TIE OFF EDGE OF LIMESTONE TRAIL SURFACE WITH EXISTING GRADE. GRADE TO AVOID FORESTRY OR CONCENTRATED WATER FLOW. COMPACT SOIL AND SEED AND EROSION CONTROL PER SPECIFICATIONS.

NEW 4" COMPACTED CRUSHED LIMESTONE ACCESSIBLE TRAIL SURFACE

EXISTING STONE-LINED DRAINAGE DITCH TO REMAIN TO COLLECT WATER FROM HILLSIDE ABOVE.

RIP-RAP OUTFALL PROTECTION WITH SILT FENCE EROSION CONTROL.

SHEMATIC TRAIL DRAINAGE PLAN VIEW.

EXISTING TRAIL SURFACE, SLOPE & CONDITION VARIES, REGRADE AS NECESSARY TO FORM SMOOTH, SURFACE WITH MINIMAL CROSS-SLOPE, ADD +/- 1" CLASS V TO RAISE GRADE FOR POSITIVE DRAINAGE TO SWALE. PLACE 4" LIMESTONE, COMPACT.

EDGE OF EXISTING TRAIL

EDGE OF WIDENED TRAIL

12" HDPE PIPE SLOPED TO DAYLIGHT. PROTECT ENDS FROM EROSION. LOCATE APPROXIMATELY EVERY 100', FIELD STAKE FOR APPROVAL.

PLATE TOPSOIL TO TIE OFF EDGE OF LIMESTONE TRAIL SURFACE WITH EXISTING GRADE. GRADE TO AVOID FORESTRY OR CONCENTRATED WATER FLOW. COMPACT SOIL AND SEED AND EROSION CONTROL PER SPECIFICATIONS.

SHEMATIC TRAIL DRAINAGE PLAN VIEW.

NEW ROCK CHECK DAMS W/ 3" - 6" ROCK TO DIRECT WATER INTO NEW 12" PIPE.

BIO-ROLL PROTECTION.

TRAIL SURFACE SLOPED TO DRAIN TO NEW SWALE. 2% MAX

EXISTING ROCK CHECK DAMS BELOW PIPE INLETS. PROVIDE BIO-ROLL EROSION CONTROL PROTECTION ON UP-SLOPE SIDE OF ROCK CHECK DAMS.

EXISTING GRADE TO AVOID FORESTRY OR CONCENTRATED WATER FLOW. COMPACT SOIL AND SEED AND EROSION CONTROL PER SPECIFICATIONS.

DRAINAGE SWALE WITH ROCK CHECK DAMS W/ 3" - 6" ROCK TO DIRECT WATER INTO NEW 12" PIPE.

NEW 4" COMPACTED CRUSHED LIMESTONE ACCESSIBLE TRAIL SURFACE 2% SLOPE MAX.

EXISTING ROAD BED - 6' - 12' WIDE

EDGE OF WIDENED TRAIL

EDGE OF EXISTING TRAIL

EXISTING GRADE - FIELD VERIFY.

PLACE TOPSOIL TO TIE OFF EDGE OF LIMESTONE TRAIL SURFACE WITH EXISTING GRADE. GRADE TO AVOID FORESTRY OR CONCENTRATED WATER FLOW. COMPACT SOIL AND SEED AND EROSION CONTROL PER SPECIFICATIONS.

EXISTING GRADE - FIELD VERIFY.

PLACE TOPSOIL TO TIE OFF EDGE OF LIMESTONE TRAIL SURFACE WITH EXISTING GRADE. GRADE TO AVOID FORESTRY OR CONCENTRATED WATER FLOW. COMPACT SOIL AND SEED AND EROSION CONTROL PER SPECIFICATIONS.

PLATE TOPSOIL TO TIE OFF EDGE OF LIMESTONE TRAIL SURFACE WITH EXISTING GRADE. GRADE TO AVOID FORESTRY OR CONCENTRATED WATER FLOW. COMPACT SOIL AND SEED AND EROSION CONTROL PER SPECIFICATIONS.

EXISTING GRADE - FIELD VERIFY.

PLACE TOPSOIL TO TIE OFF EDGE OF LIMESTONE TRAIL SURFACE WITH EXISTING GRADE. GRADE TO AVOID FORESTRY OR CONCENTRATED WATER FLOW. COMPACT SOIL AND SEED AND EROSION CONTROL PER SPECIFICATIONS.

EXISTING GRADE - FIELD VERIFY.

PLACE TOPSOIL TO TIE OFF EDGE OF LIMESTONE TRAIL SURFACE WITH EXISTING GRADE. GRADE TO AVOID FORESTRY OR CONCENTRATED WATER FLOW. COMPACT SOIL AND SEED AND EROSION CONTROL PER SPECIFICATIONS.

EXISTING GRADE - FIELD VERIFY.

PLACE TOPSOIL TO TIE OFF EDGE OF LIMESTONE TRAIL SURFACE WITH EXISTING GRADE. GRADE TO AVOID FORESTRY OR CONCENTRATED WATER FLOW. COMPACT SOIL AND SEED AND EROSION CONTROL PER SPECIFICATIONS.

EXISTING GRADE - FIELD VERIFY.

PLACE TOPSOIL TO TIE OFF EDGE OF LIMESTONE TRAIL SURFACE WITH EXISTING GRADE. GRADE TO AVOID FORESTRY OR CONCENTRATED WATER FLOW. COMPACT SOIL AND SEED AND EROSION CONTROL PER SPECIFICATIONS.

EXISTING GRADE - FIELD VERIFY.

PLACE TOPSOIL TO TIE OFF EDGE OF LIMESTONE TRAIL SURFACE WITH EXISTING GRADE. GRADE TO AVOID FORESTRY OR CONCENTRATED WATER FLOW. COMPACT SOIL AND SEED AND EROSION CONTROL PER SPECIFICATIONS.

EXISTING GRADE - FIELD VERIFY.

PLACE TOPSOIL TO TIE OFF EDGE OF LIMESTONE TRAIL SURFACE WITH EXISTING GRADE. GRADE TO AVOID FORESTRY OR CONCENTRATED WATER FLOW. COMPACT SOIL AND SEED AND EROSION CONTROL PER SPECIFICATIONS.

EXISTING GRADE - FIELD VERIFY.

PLACE TOPSOIL TO TIE OFF EDGE OF LIMESTONE TRAIL SURFACE WITH EXISTING GRADE. GRADE TO AVOID FORESTRY OR CONCENTRATED WATER FLOW. COMPACT SOIL AND SEED AND EROSION CONTROL PER SPECIFICATIONS.

EXISTING GRADE - FIELD VERIFY.

PLACE TOPSOIL TO TIE OFF EDGE OF LIMESTONE TRAIL SURFACE WITH EXISTING GRADE. GRADE TO AVOID FORESTRY OR CONCENTRATED WATER FLOW. COMPACT SOIL AND SEED AND EROSION CONTROL PER SPECIFICATIONS.

EXISTING GRADE - FIELD VERIFY.

PLACE TOPSOIL TO TIE OFF EDGE OF LIMESTONE TRAIL SURFACE WITH EXISTING GRADE. GRADE TO AVOID FORESTRY OR CONCENTRATED WATER FLOW. COMPACT SOIL AND SEED AND EROSION CONTROL PER SPECIFICATIONS.

EXISTING GRADE - FIELD VERIFY.

PLACE TOPSOIL TO TIE OFF EDGE OF LIMESTONE TRAIL SURFACE WITH EXISTING GRADE. GRADE TO AVOID FORESTRY OR CONCENTRATED WATER FLOW. COMPACT SOIL AND SEED AND EROSION CONTROL PER SPECIFICATIONS.

EXISTING GRADE - FIELD VERIFY.

PLACE TOPSOIL TO TIE OFF EDGE OF LIMESTONE TRAIL SURFACE WITH EXISTING GRADE. GRADE TO AVOID FORESTRY OR CONCENTRATED WATER FLOW. COMPACT SOIL AND SEED AND EROSION CONTROL PER SPECIFICATIONS.

EXISTING GRADE - FIELD VERIFY.
TRAIL TYPE "A1" & "A2"

A1 - +/- 1,100 L.F. 5 PIPES REQUIRED
A2 - +/- 300 L.F. 1 PIPE REQUIRED

TILL AND BACKBLADE EXISTING ROAD BED ALONG SIDES OF EXISTING TRAIL CORRIDOR TO A 10' CLEAR WIDTH. REMOVE VEGETATION FROM TILLED AREA PRIOR TO COMPACTING AND ADDING 4" LIMESTONE SURFACING.
TRAIL SURFACE - 10.0' WIDE

NEW 4" COMPACTED CRUSHED LIMESTONE ACCESSIBLE TRAIL SURFACE

REMOVE TOP 4" OF STONE SURFACE FROM ENTIRE WIDTH OF TRAIL. USE AS FILL WHERE POSSIBLE ON OTHER TRAIL IMPROVEMENTS UNDER THIS CONTRACT. APPROX 1,140 L.F.

EXISTING GRADE - FIELD VERIFY.

EXISTING TRAIL REPLACEMENT OF EXISTING SURFACE

NEW 4" COMPACTED CRUSHED LIMESTONE ACCESSIBLE TRAIL SURFACE

2% SLOPE MAX

NEW TRAIL SURFACE NOT TO EXCEED 1:12 (8.33%) NOT TO EXCEED 1:50 (2%) IN ANY DIRECTION

NEW TRAIL SURFACE AT RESTING AREA (SLOPE NOT TO EXCEED 1:12 (8.33%) FOR 50' MAX.

SIDE SLOPES OF FILL SHALL TAPER AT 2:1 SLOPE FOR A DISTANCE OF 1', THEN SLOPE AT 1:1 FOR REMAINDER OF SLOPED AREA. CARE MUST BE TAKEN TO STRICTLY AVOID FILL BEING PLACED OR ERODING INTO ADJACENT WATERWAY.

EXISTING GRADE - FIELD VERIFY.

NEW TRAIL SURFACE NOT TO EXCEED 1:12 (8.33%) (SLOPE NOT TO EXCEED 1:50 (2%) IN ANY DIRECTION)

4" COMPACTED LIMESTONE TRAIL SURFACE.

ACCESSIBLE PARKING LOT / TRAIL APPROACH (NIC. WORK BY OTHERS)

NEW 4" COMPACTED CRUSHED LIMESTONE ACCESSIBLE TRAIL SURFACE.
2X12 JOISTS 16" O.C.

ROT-RESISTANT 6x6 TIMBER

ADD FILL FOR BOARDWALK APPROACH

1:12 MAX SLOPE

(2) 2X12 RIM JOISTS.

2X6 DECKING WITH 1/4" GAPS BETWEEN BOARDS

2X4 SPACING BLOCKS

2X4 TOP CURB RAIL

EQUAL MINIMUM 8" COMPACTED CLASS V BENEATH ENTIRE LENGTH AND 9" BEYOND ENDS OF TIMBERS.

COMPACTED FILL WITH 4" LIMESTONE SURFACE TO MEET SURFACE OF BOARDWALK. SLOPE NOT TO EXCEED 1:12 FOR 50 FEET MAX.

EXISTING DRAINAGE WAY.

EXISTING TRAIL SURFACE

2X10 JOISTS 16" O.C.

2X10 ROT-RESISTANT BEAM

MINIMUM 8" COMPACTED CLASS V BENEATH ENTIRE LENGTH OF TIMBER.

COMPACTED GRAVEL SUITABLE FOR LOAD BEARING IN WET CONDITIONS. MUST MAINTAIN WATER FLOW BENEATH BOARDWALK.

AVERAGE WATER LEVEL

ROT-RESISTANT TIMBER FOR SUPPORT OF JOISTS. PLACE BOTTOM TIMBER ABOVE AVERAGE WATER LEVEL. CONTINUOUS BENEATH ALL 4 JOISTS. FASTEN TIMBER TOGETHER WITH CORROSION RESISTANT FASTENERS.

AVERAGE WATER LEVEL

10' CLEAR

2X6 DECKING

2X10 JOISTS 16" O.C.

(2) 2X10 ROT-RESISTANT BEAMS

MINIMUM 8" COMPACTED CLASS V BENEATH ENTIRE LENGTH OF TIMBERS.

COMPACTED GRAVEL SUITABLE FOR LOAD BEARING IN WET CONDITIONS. MUST MAINTAIN WATER FLOW BENEATH BOARDWALK.

EXISTING DRAINAGE WAY.

EXISTING TRAIL SURFACE

TRACTOR SHALL SUBMIT LINE ITEM FIGURE FOR INSTALLING WICKCRAFT COMPANY, INC., BOARDWALK IN LEIU OF WOODEN BOARDWALK SHOWN ON THIS SHEET.

SEE BID SHEET FOR BOARDWALK BID ALTERNATE #1. CONTRACTOR SHALL SUBMIT LINE ITEM FIGURE FOR INSTALLING WICKCRAFT COMPANY, INC., BOARDWALK IN LEIU OF WOODEN BOARDWALK SHOWN ON THIS SHEET.

COMPACTED GRAVEL SUITABLE FOR LOAD BEARING IN WET CONDITIONS. MUST MAINTAIN WATER FLOW BENEATH BOARDWALK.

ROT-RESISTANT TIMBER FOR SUPPORT OF JOISTS. PLACE BOTTOM TIMBER ABOVE AVERAGE WATER LEVEL. CONTINUOUS BENEATH ALL 4 JOISTS. FASTEN TIMBER TOGETHER WITH CORROSION RESISTANT FASTENERS.

AVERAGE WATER LEVEL

10'-0" MAX SUPPORT SPACING

DRAINAGE CURB WOVEN GEOTEXTILE FABRIC. NO FABRIC IS TO BE EXPOSED. ALL FABRIC AT EDGES SHALL HAVE 2" MINIMUM COVER

WOVEN GEOTEXTILE FABRIC BENEATH NEW FILL. NO FABRIC IS TO BE EXPOSED. ALL FABRIC AT EDGES SHALL HAVE 2" MINIMUM COVER

SEE BID SHEET FOR BOARDWALK BID ALTERNATE #1.

CONTRACTOR SHALL SUBMIT LINE ITEM FIGURE FOR INSTALLING WICKCRAFT COMPANY, INC., BOARDWALK IN LEIU OF WOODEN BOARDWALK SHOWN ON THIS SHEET.
NEW WOODEN BOARDWALK ON STACKED TIMBER SUPPORTS (SEE SHEET L-10 FOR TYPICAL DETAILS) BASE #45

BASE ALTERNATE #2 NEW WICKCRAFT COMPANY, INC., BOARDWALK IN LEIU OF WOODEN BOARDWALK ON TIMBER SUPPORTS

BASE ALTERNATE #3 NEW HELICAL PIER SUPPORTED WOODEN BOARDWALK

HORIZONTAL LAYOUT ORIENTATION: A - BABY, B - MOTHER, C - DAD, D - IRIS

NEW HELICAL PILES - INSTALLATION, SPACING AND NUMBER PER INSTALLATION

SOIL ALIKE ANALYSIS - INSTRUCTION AND MANUFACTURERS NUMBER PER SPACING, AND NUMBER PER INSTALLATION

NUMBERS: 200', 300', 400', 500', 600'

NEW WOODEN BOARDWALK ON STACKED TIMBER SUPPORTS (SEE SHEET L-10 FOR TYPICAL DETAILS) BASE #45

BASE ALTERNATE #2 NEW WICKCRAFT COMPANY, INC., BOARDWALK IN LEIU OF WOODEN BOARDWALK ON TIMBER SUPPORTS

BASE ALTERNATE #3 NEW HELICAL PIER SUPPORTED WOODEN BOARDWALK

HORIZONTAL LAYOUT ORIENTATION: A - BABY, B - MOTHER, C - DAD, D - IRIS

NEW HELICAL PILES - INSTALLATION, SPACING AND NUMBER PER INSTALLATION

SOIL ALIKE ANALYSIS - INSTRUCTION AND MANUFACTURERS NUMBER PER SPACING, AND NUMBER PER INSTALLATION

NUMBERS: 200', 300', 400', 500', 600'

NEW WOODEN BOARDWALK ON STACKED TIMBER SUPPORTS (SEE SHEET L-10 FOR TYPICAL DETAILS) BASE #45

BASE ALTERNATE #2 NEW WICKCRAFT COMPANY, INC., BOARDWALK IN LEIU OF WOODEN BOARDWALK ON TIMBER SUPPORTS

BASE ALTERNATE #3 NEW HELICAL PIER SUPPORTED WOODEN BOARDWALK

HORIZONTAL LAYOUT ORIENTATION: A - BABY, B - MOTHER, C - DAD, D - IRIS

NEW HELICAL PILES - INSTALLATION, SPACING AND NUMBER PER INSTALLATION

SOIL ALIKE ANALYSIS - INSTRUCTION AND MANUFACTURERS NUMBER PER SPACING, AND NUMBER PER INSTALLATION

NUMBERS: 200', 300', 400', 500', 600'
SEE BID SHEET FOR BOARDWALK DEDUCT #1. CONTRACTOR SHALL SUBMIT LINE ITEM FIGURE FOR INSTALLING WICKCRAFT COMPANY, INC., BOARDWALK IN LEIU OF WOODEN BOARDWALK SHOWN ON THIS SHEET.

CONTRACTOR SHALL SUBMIT FOR REVIEW AND APPROVAL, STRUCTURAL SHOP DRAWINGS, SIGNED BY A MINNESOTA-REGISTERED STRUCTURAL ENGINEER FOR HELICAL PILES AND ALL BOARDWALK CONSTRUCTION.

SEE L-10, L-11 AND BID TAB FOR BASE BID AND ALTERNATES.