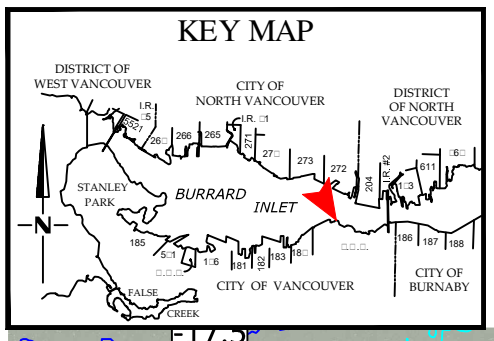
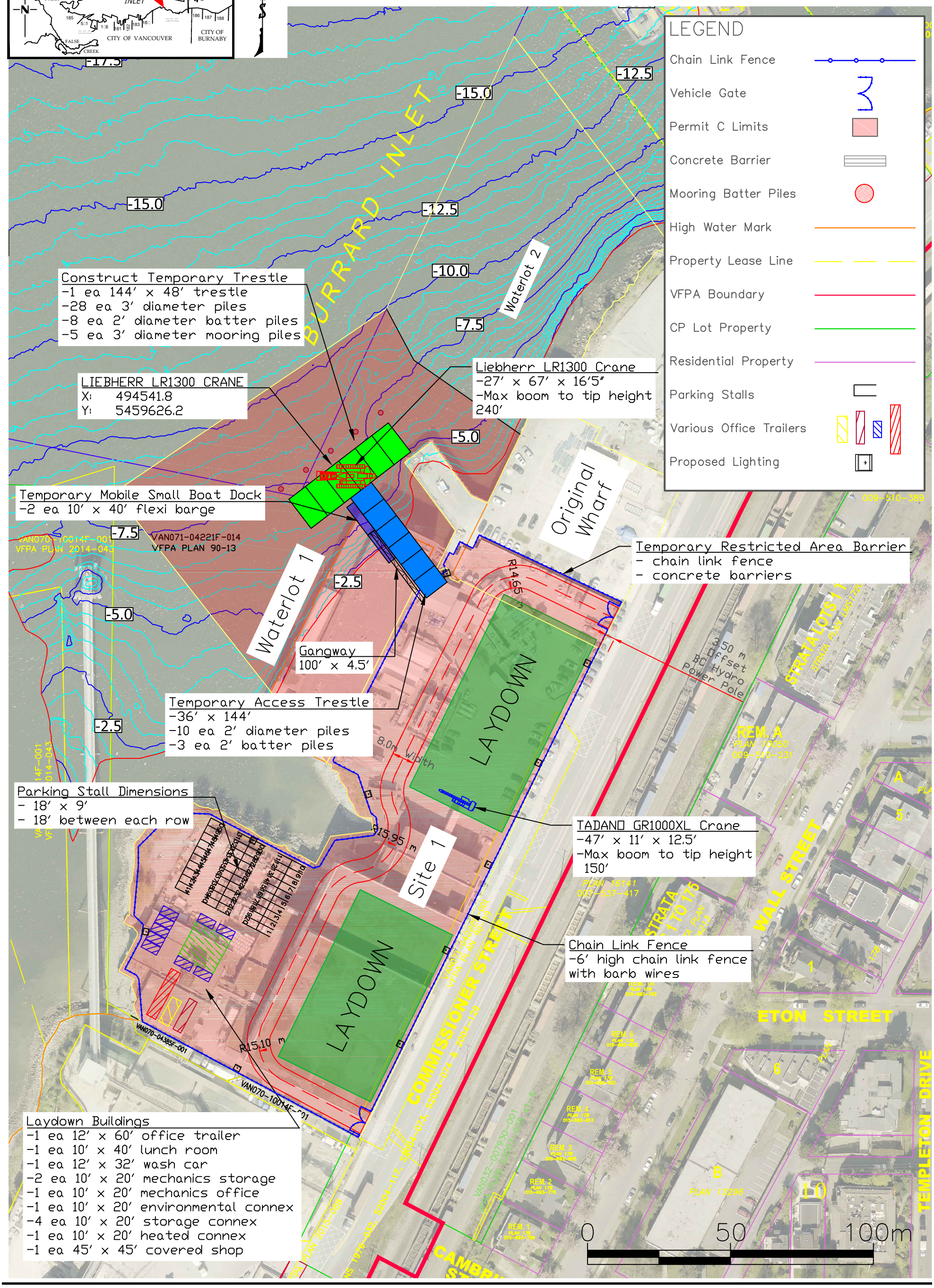
APPENDIX A – SITE LAYOUT

RE□ERE□CE□□□A□0□7□1061□□□001
□□□E□□
□DI□□A□CE□ ARE □□□□ □ I□ I□□ER□A□I□□AL ME□RE□ A□D DECIMAL□
□□ERE□□.
□BEARI□□□ ARE U.□.M.□A□D ARE DERI□ED □R□M □□□A C□□□R□L □UR□E□.
□□RI□R □□ C□M□U□A□I□□ □□U.□.M. C□□□RDI□A□E□□MUL□I□L□ DI□□A□CE□
B□ C□MBI□ED □CALE □AC□□R 0.□□□60.
□□I□AL DIME□□I□□□ A□D C□□□RDI□A□E□ ARE □UBJEC□ □□ □UR□E□.

KEY MAP





LEGEND

- Chain Link Fence
- Vehicle Gate
- Permit C Limits
- Concrete Barrier
- Mooring Batter Piles
- High Water Mark
- Property Lease Line
- VFPA Boundary
- CP Lot Property
- Residential Property
- Parking Stalls
- Various Office Trailers
- Proposed Lighting

KLTP

2115 COMMISSIONER STREET
SITE LAYOUT

D□ □ DA□E	RE□I□I□□	DRA□ I□□
11/15/2017	2	2115CommissionerSt-Site1-001

APPENDIX B – SENSITIVE RECEPTORS OVERVIEW

RE□ERE□CE□□□A□0□7□1061□□□001

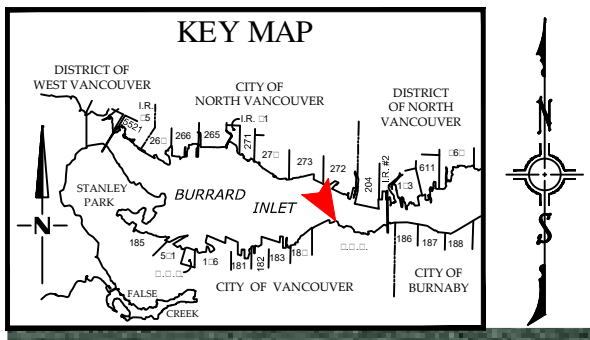
□□□E□□

□DI□□A□CE□ ARE □□□□ □ I□ I□□ER□A□I□□AL ME□RE□ A□D DECIMAL□ □□ERE□ □.

□BEARI□□□ ARE U.□.M.□A□D ARE DERI□ED □R□M □□□A C□□□R□L □UR□E□.

□□RI□R □□ C□M□U□A□I□□ □□ U.□.M. C□ □□RDI□A□E□□MUL□I□L□ DI□□A□CE□ B□ C□MBI□ED □CALE □AC□□R 0.□□□60.

□□I□AL DIME□□I□□□ A□D C□ □□RDI□A□E□ ARE □UBJEC□ □□ □UR□E□.



KLTP

0 100 150

KLTP SITE 1
SENSITIVE RECEPTORS OVERVIEW
SCALE 1:5000 SITE PLAN

D□ □ DA□E	RE□I□I□□	DRA□ I□□
08/15/2017	0	2115CommissionerSt-SR□-001

APPENDIX C – MARINE STRUCTURES SITE

LEGEND

Major Contours

Minor Contours

Water Lot 1

Water Lot 2

Barge
— Approx. 230' x 60'

Mooring Piles
— 5 ea 3' diameter

Barge
— Approx. 180' x 50'

BURRARD INLET

-12.5

-10.0

-7.5

-10.

Temp. Trestle

-7.5

-5.0

-2.5

Waterlot 1

Navigation Marker			
Symbol	Colour	Elevation (m)	Nautical Miles
	RED	8.31	1 to 3
	YELLOW	8.31	1 to 3
	GREEN	8.31	1 to 3

GENERAL NOTES:

1. HORIZONTAL POSITIONING BY TRIMBLE GNSS R8 RTKGPS RECEIVER, TO UTM GRID ZONE 10, NAD 83.
2. SOUNDINGS OBTAINED USING AN INTERNATIONAL ORGANIZATION HYDROGRAPHIC SURVEY GRADE MULTI-BEAM ECHOSOUNDER.
3. DEPTHS ARE METERS AND ARE REDUCED TO CHART DATUM (CONVERSION 3.10m TO GEODETIC DATUM,CHS NAUTICAL CHART)
4. CONTOUR INTERVAL IS 0.5m.
5. ELEVATIONS DERIVED FROM CAN-NET SURVEY CONTROL .
6. REFERENCE DRAWING INFO FOR BACKGROUND SUPPLIED BY CLIENT , FOR REFERENCE ONLY.
7. ALL INFORMATION OF THIS PLAN IS REPRESENTATIVE OF CONDITIONS AT TIME OF SURVEY.

KLTP

NO.	DATE	REVISION / ISSUE	BY	CH	AP
1	06 / 22 / 17	000	JL	HAH	HAH

CLIENT: KIEWIT LEDCOR TMEP PARTNERSHIP

PROJECT: 2115 COMMISSIONER ST, VANCOUVER BC

DRAWING TITLE: MARINE STRUCTURE SITE PLAN

SURVEYED BY: HAH / RC DATE: 05 / 26 / 2017

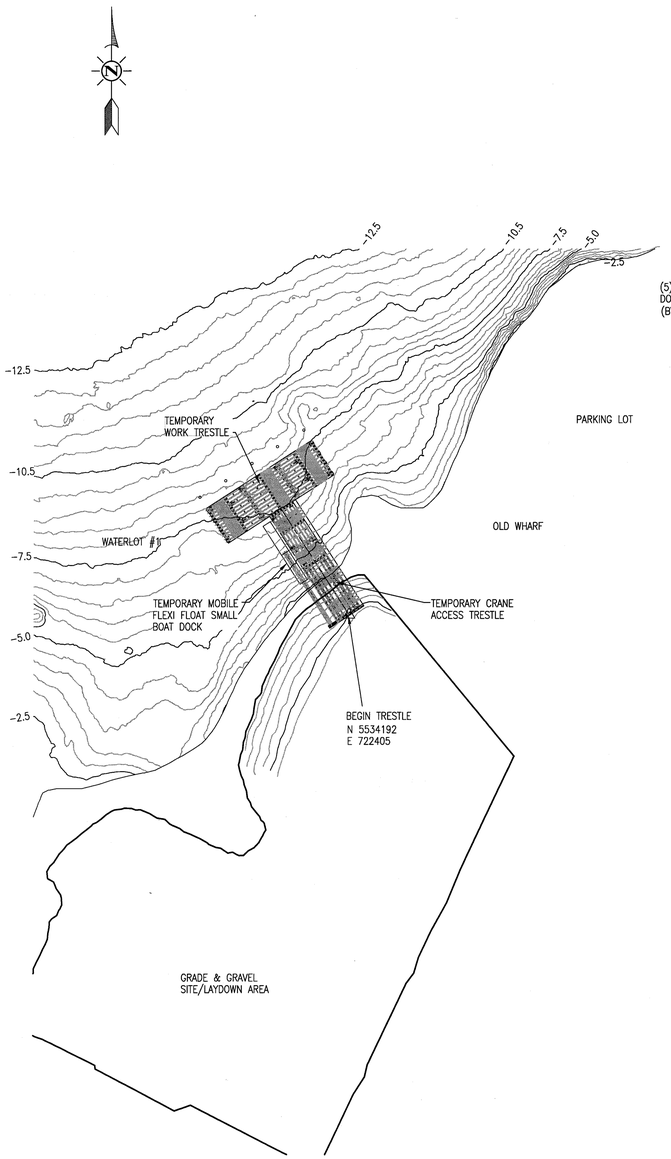
PROCESSED BY: HAH DATE: 05 / 29 / 2017

SCALE: 1 : 750

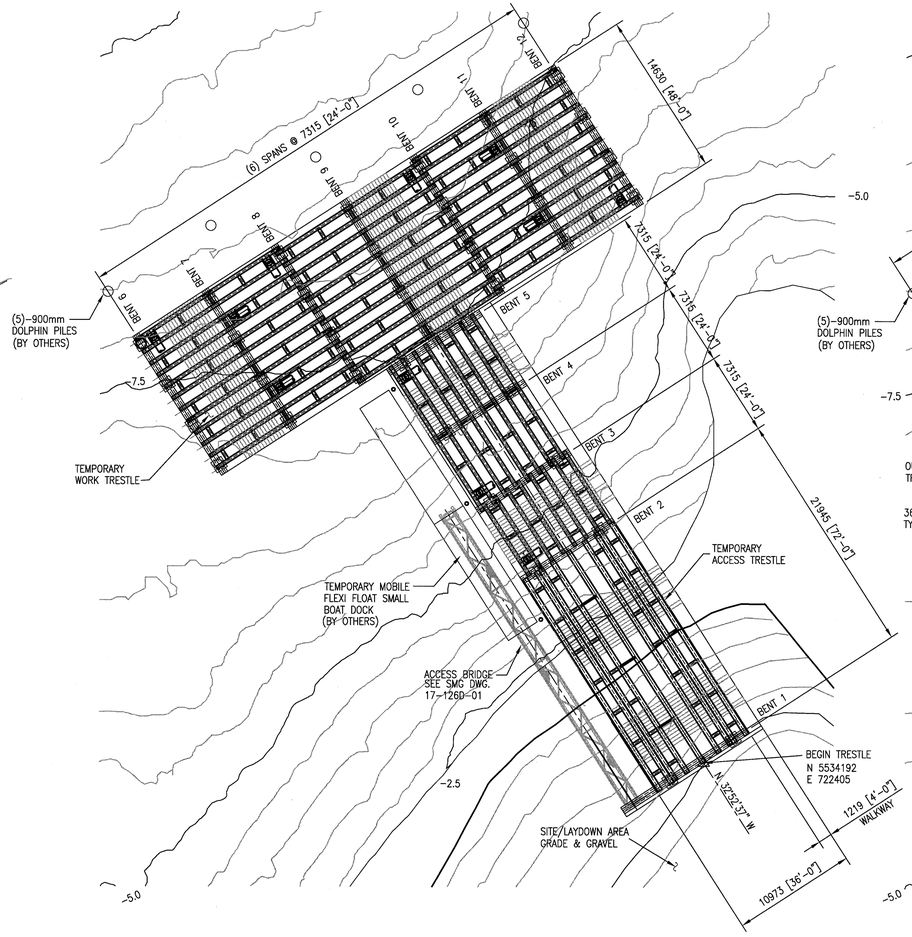
JOB NUMBER: 571_17

DRAWING NUMBER: MarineStructure-001 REV -

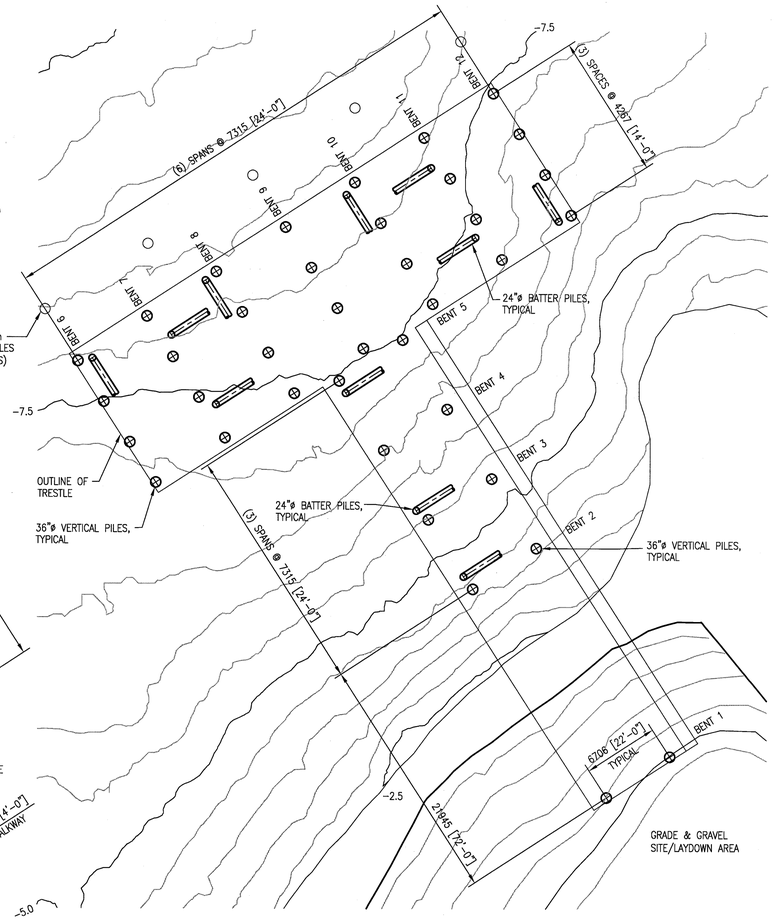
APPENDIX D – TRESTLE DESIGN



A 01 OVERALL SITE PLAN
1:1000



B 01 ENLARGED TRESTLE PLAN VIEW
1:250



C 01 TRESTLE PILE PLAN VIEW
1:250

GENERAL NOTES:

1. ALL STEEL DETAILING, FABRICATION AND IDENTIFICATION SHALL CONFORM TO THE CANADIAN INSTITUTE OF STEEL CONSTRUCTION (CISC) SPECIFICATIONS.
2. STRUCTURAL STEEL SHAPES SHALL CONFORM TO ASTM A572 GRADE 50 OR ASTM A992, U.N.O., ANGLES, AND PLATES SHALL BE ASTM A36.
3. WELD ELECTRODES SHALL CONFORM TO E70XX CLASSIFICATION ACCORDING TO CAN/CSA-S16 SPECIFICATIONS, CURRENT EDITION.
4. STIFFENER PLATES SHALL BE WELDED WITH DOUBLE 5/16" FILLETS AT WEBS AND DOUBLE 3/8" FILLETS AT FLANGES. STIFFENER PLATES SHALL EXTEND TO WITHIN 1/4" FROM EDGES OF FLANGES.
5. WELDS SHALL BE INSPECTED AS REQUIRED TO ENSURE THAT THE WELD QUALITY MEETS THE REQUIREMENTS OF THE LATEST CWB CODE.
6. STRUCTURAL BOLTED CONNECTIONS SHALL CONFORM TO AISC SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 BOLTS, UNLESS OTHERWISE NOTED.
7. 9753 [32'-0"] WIDE ACCESS TRESTLE PILES:
   VERTICAL PILES–
   36"ø x 0.50" WALL, Fy = 35 ksi, ASTM A252 GRADE 2
   BATTERED PILE–
   24"ø x 0.50" WALL, Fy = 45 ksi, ASTM A252 GRADE 3
   14630 [48'-0"] WIDE WORK TRESTLE PILES:
   VERTICAL PILES–
   36"ø x 0.50" WALL, Fy = 35 ksi, ASTM A252 GRADE 2
   BATTERED PILE–
   24"ø x 0.50" WALL, Fy = 45 ksi, ASTM A252 GRADE 3
8. BEAM SIZES SHOWN ARE MINIMUM REQUIRED, LARGER BEAMS MAY BE SUBSTITUTED.
9. ALL 12 x 12 DECK WOOD SHALL BE DF-L NO. 2 OR BETTER.
10. EXISTING GRADE SHOWN ON THE ELEVATION VIEW AND SECTIONS IS BASED ON TOPOGRAPHICAL INFORMATION SHOWN ON CONTRACT DRAWINGS.
11. PILE CAPACITY (SHORT TON):
    - 36"ø VERTICAL PILING SHALL BE DRIVEN TO 700 TON MINIMUM ULTIMATE BEARING CAPACITY. (INCLUDES SAFETY FACTOR = 2.0).
    - 24"ø BATTERED PILING SHALL BE DRIVEN TO 240 TON MINIMUM ULTIMATE BEARING & UPLIFT CAPACITY. (INCLUDES SAFETY FACTOR = 2.0).
12. MINIMUM PILE EMBEDMENTS REQUIRED TO DEVELOP CAPACITIES LISTED IN NOTE 11 ARE BY OTHERS.
13. ALL ELEVATIONS SHOWN ARE CHART DATUM.
14. DESIGN LOADS:
    A) ACCESS TRESTLE: LR1300, 150 KIP PICK, WALKING ONLY BOOM CENTERED AHEAD.
    B) WORK TRESTLE: LR1300, 284 KIP PICK, 360° OPERATION.
    C) ACCESS WALKWAY – 50 PSF
15. DIMENSIONS ARE SHOWN IN METRIC AND IMPERIAL UNITS. MATERIALS ARE SHOWN IN IMPERIAL SIZES ONLY.
16. TRESTLE BEGINNING COORDINATES AND BEARING MAY BE ADJUSTED AS REQUIRED DUE TO FIELD CONDITIONS.

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SYM.	REVISIONS	BY	DATE	CHK'D
0	ISSUED FOR SUBMITTAL	DK	11/7/2017	DAH

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA D. A. HAMANN #156203
11-07-17

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DRAWN BY	DATE	CHKD BY	DATE
D. KEARL	6/13/2017		

KIEWIT LEDCOR TMEP PARTNERSHIP
TRANS MOUNTAIN EXPANSION PROJECT LOWER MAINLAND

TEMPORARY CRANE TRESTLE
SITE PLAN, PILE PLAN & NOTES

SCALE	DWG. NO.	REV.
AS NOTED	17-126A-01	0

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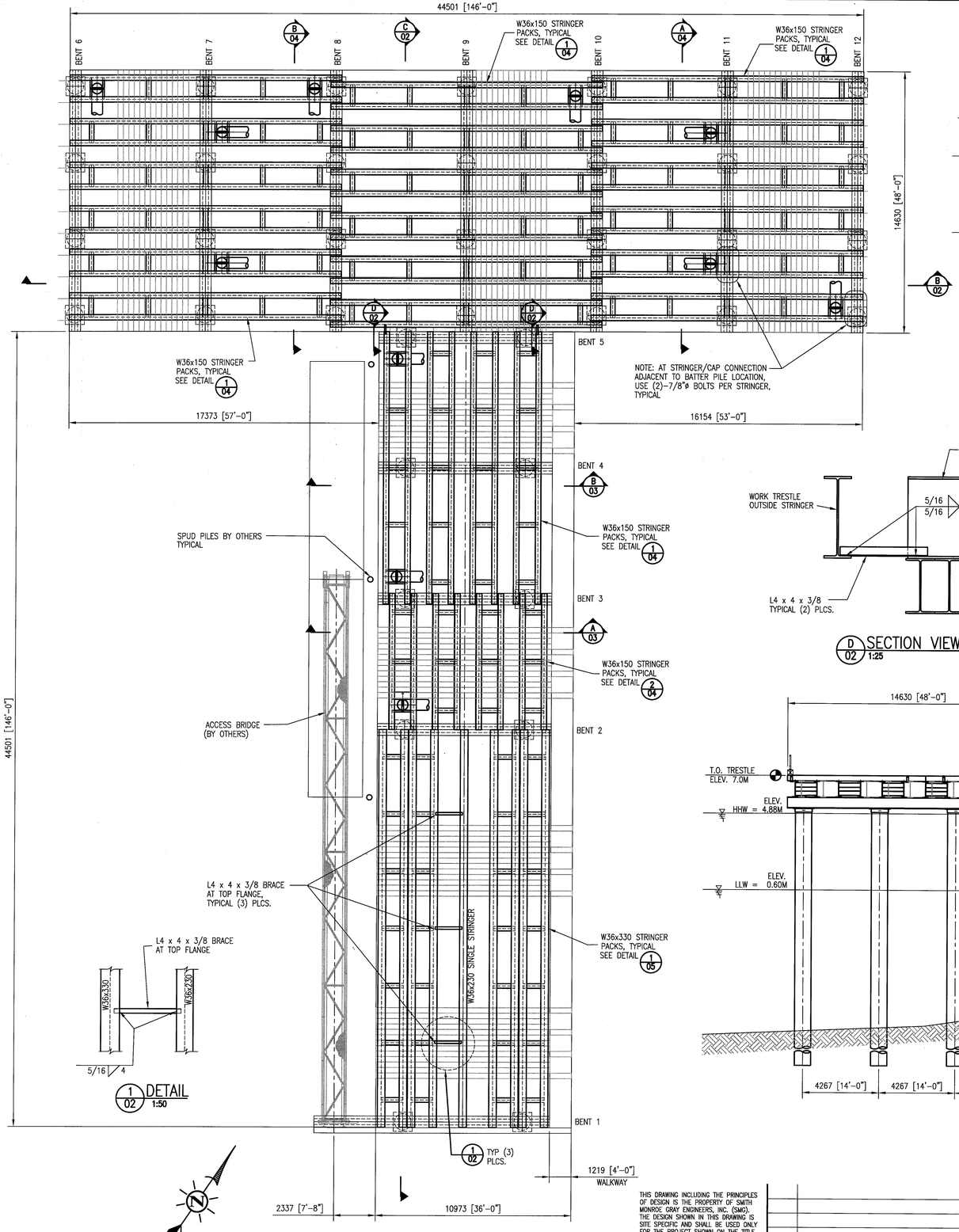
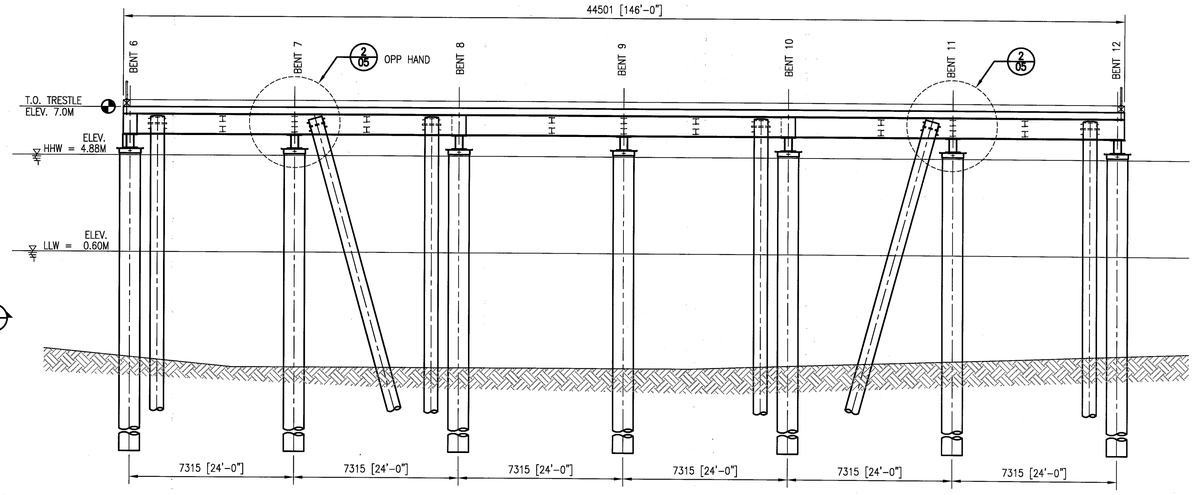
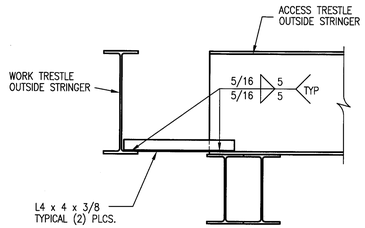




B/02 TRESTLE SECTION VIEW 1:125



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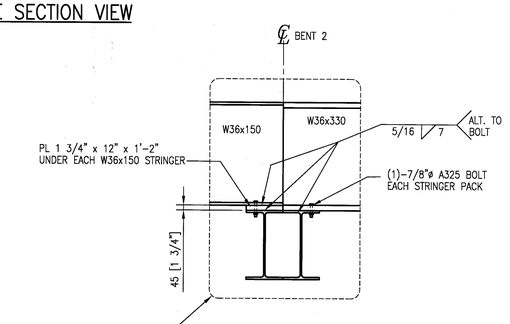

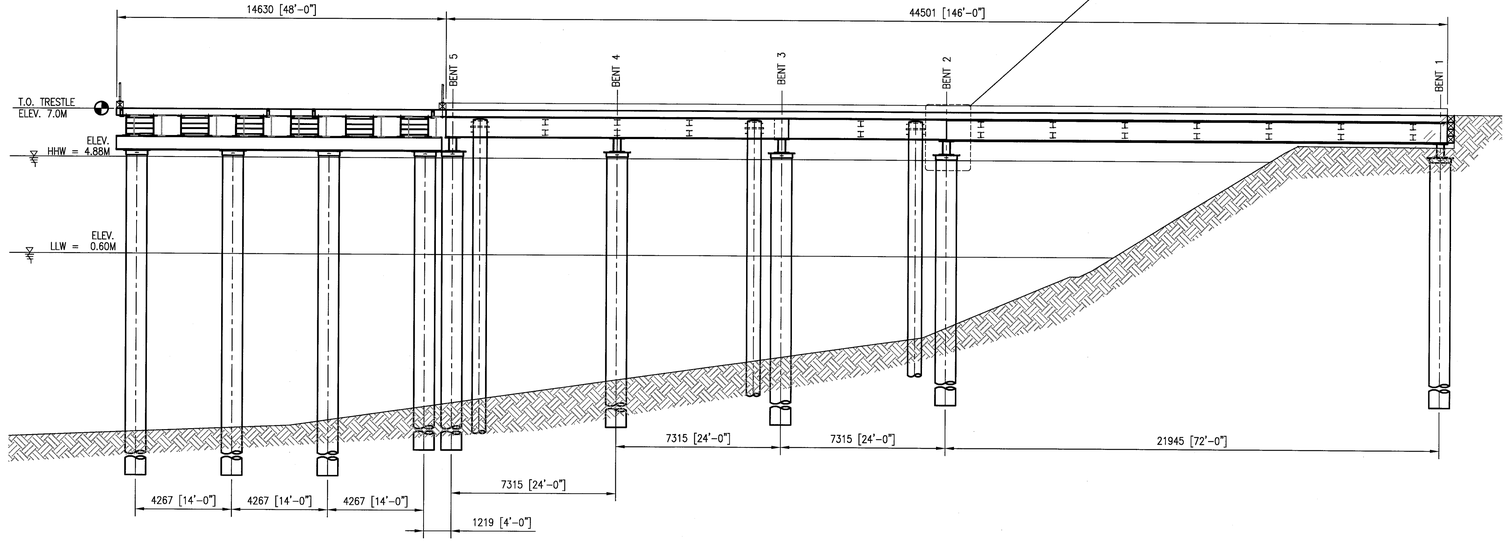

C/02 TRESTLE SECTION VIEW 1:125

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DRAWN BY	DATE	CHKD BY	DATE
D. KEARL	6/13/2017		

KIEWIT LEDCOR TMEP PARTNERSHIP
TRANS MOUNTAIN EXPANSION PROJECT LOWER MAINLAND

TEMPORARY CRANE TRESTLE
ENLARGED TRESTLE PLAN & SECTION VIEWS

SCALE	DWG. NO.	REV.
AS NOTED	17-126A-02	0

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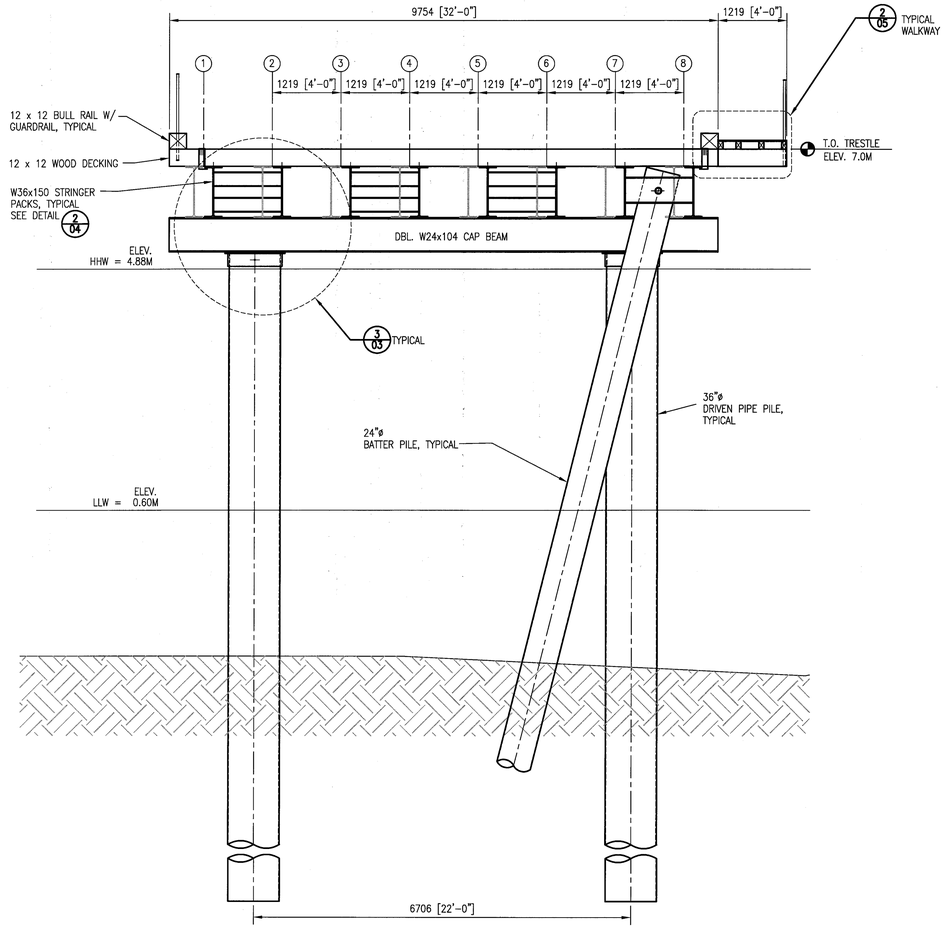
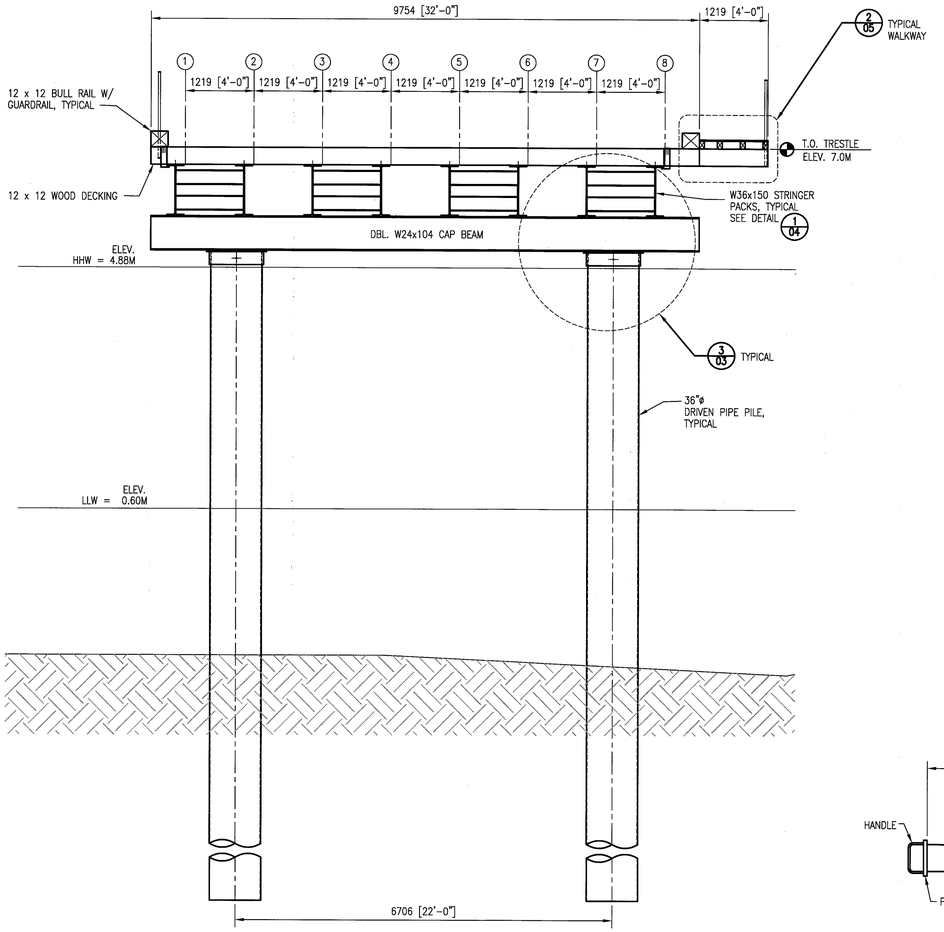


A/03 TRESTLE SECTION VIEW 1:50



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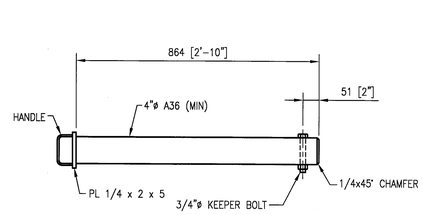

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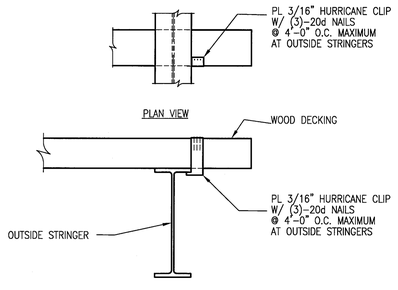

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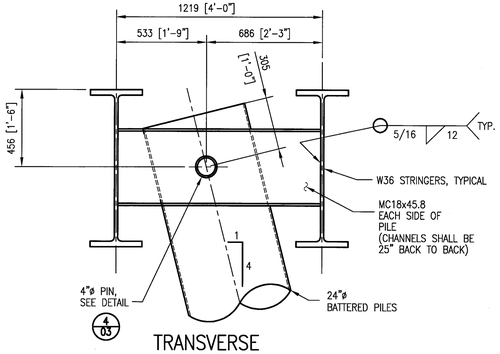
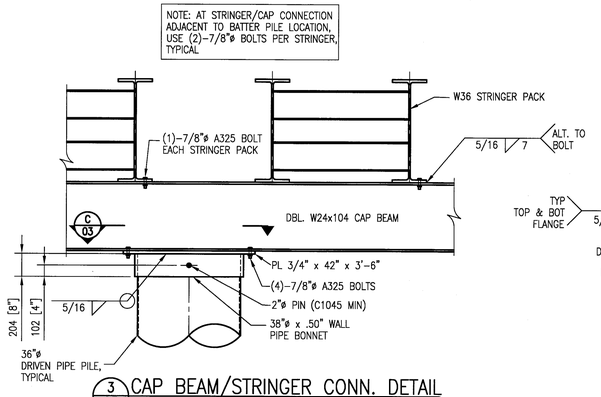
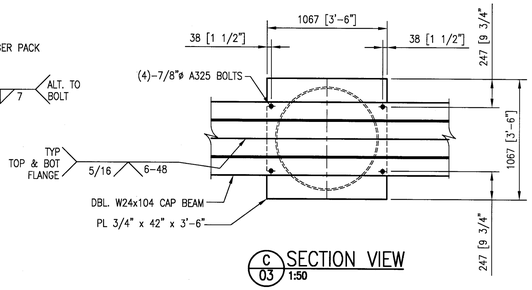


TRANSVERSE BATTERED PILE DETAIL 2/03



3/03 CAP BEAM/STRINGER CONN. DETAIL



C/03 SECTION VIEW 1:50

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SYM.	REVISIONS	BY	DATE	CHK'D
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PROFESSIONAL ENGINEER — D. A. HAHN — #156203 — BRITISH COLUMBIA
11-07-17

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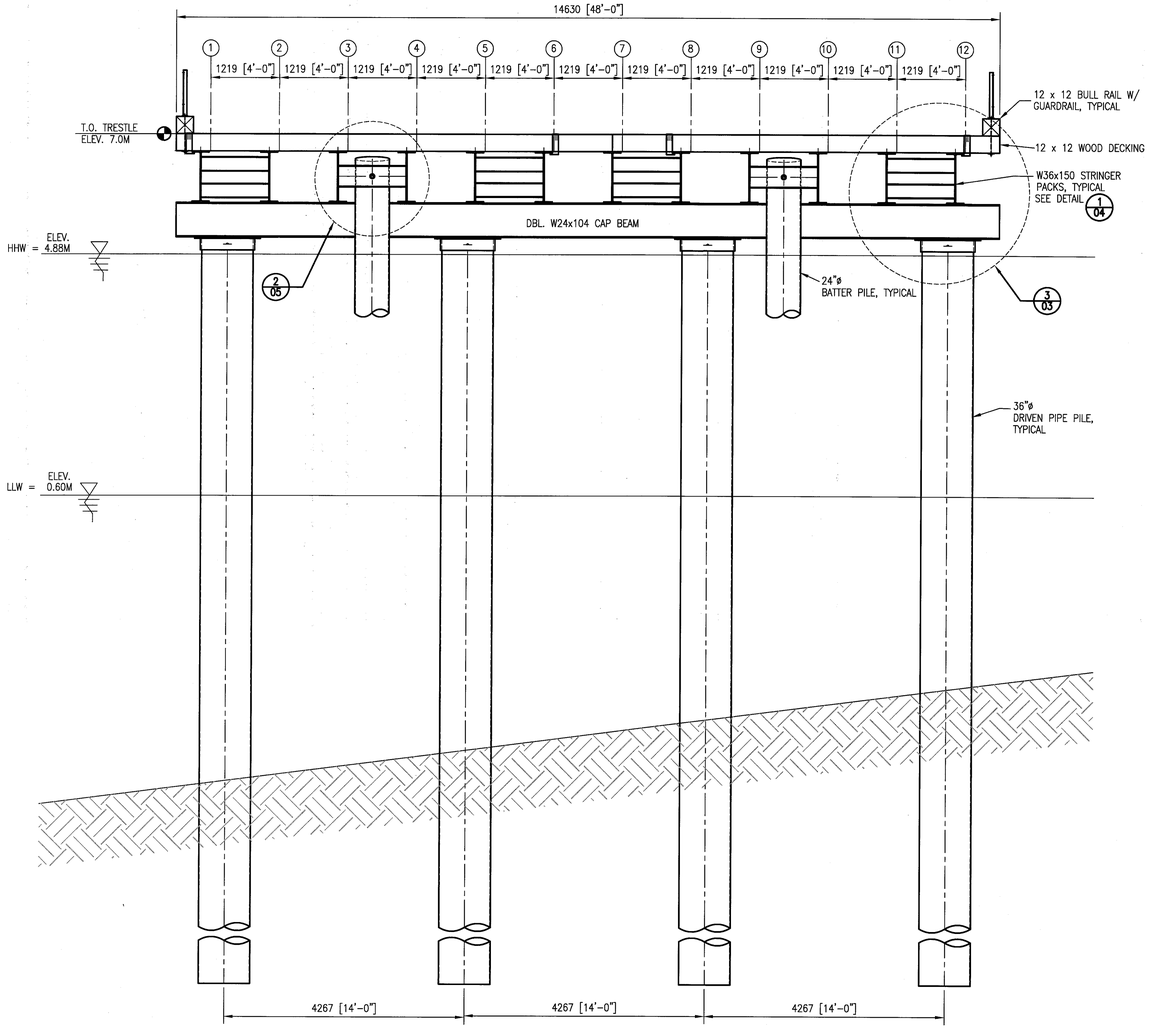
KIEWIT LEDCOR TMEP PARTNERSHIP
TRANS MOUNTAIN EXPANSION PROJECT LOWER MAINLAND

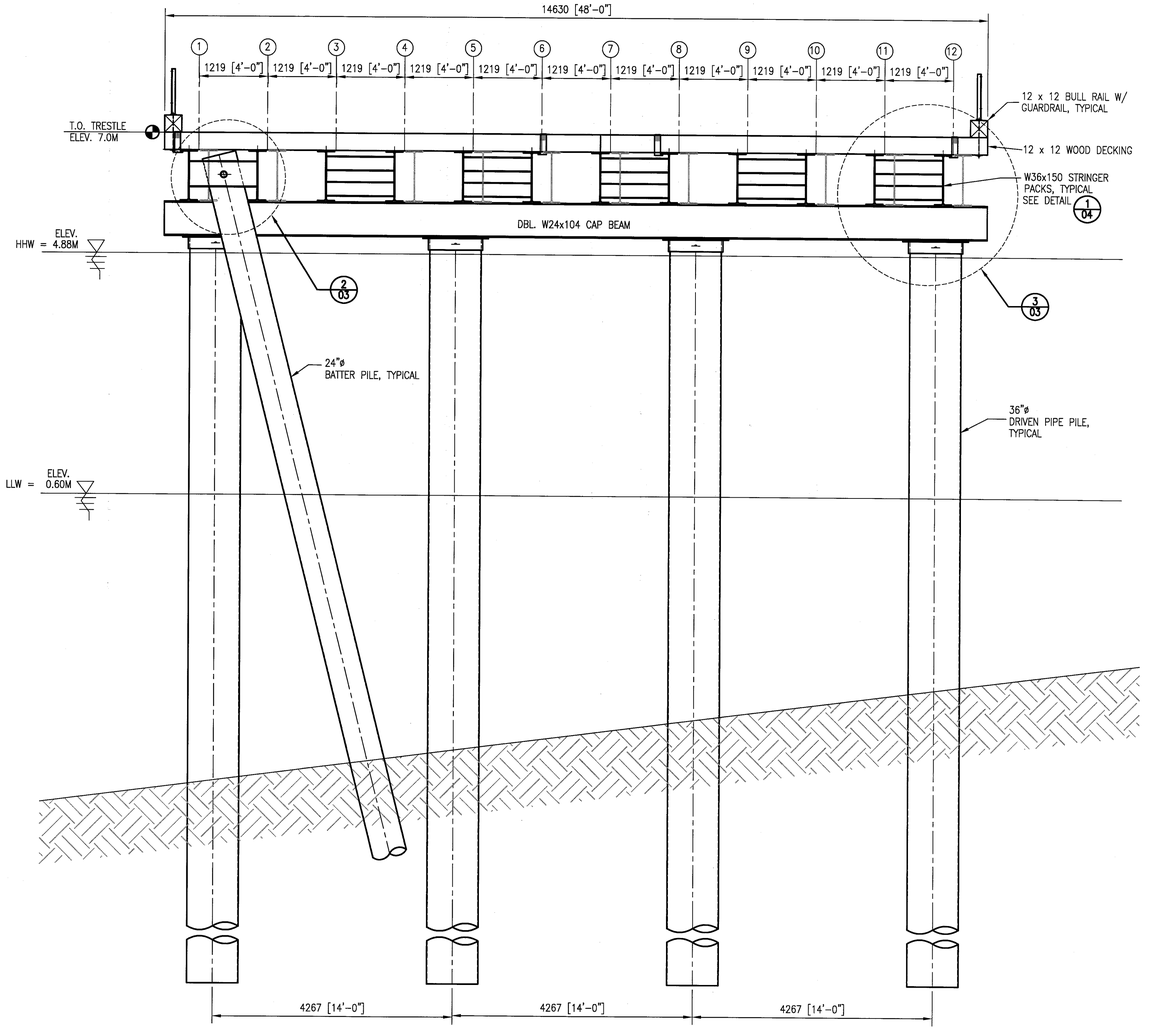
TEMPORARY CRANE TRESTLE
SECTION VIEWS & DETAILS

DRAWN BY	DATE	CHKD BY	DATE	SCALE	DWG. NO.	REV.
D. KEARL	6/13/2017			AS NOTED	17-126A-03	0

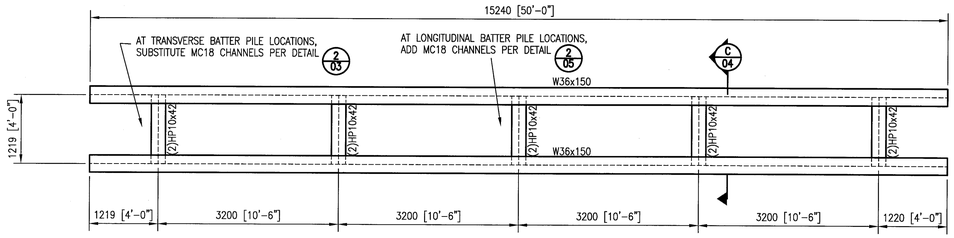
FILE: Q:\17\17126 KIEWIT LEDCOR TMEP PARTNERSHIP TMEP LOWER MAINLAND\PHASE A TEMPORARY TRESTLE\DWGS\17126A01-07.dwg, D36xvD, PLOT 1=1, 11/07/17 AT 13:29, Printed By: dwk014



A/04 TRESTLE SECTION VIEW 1:50

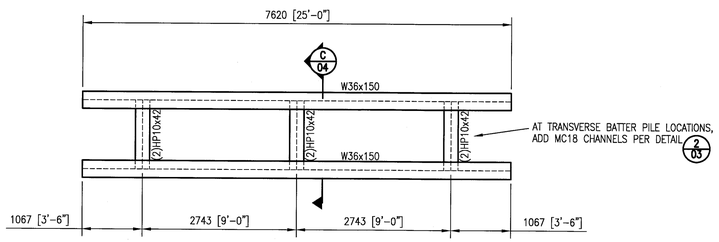


B/04 TRESTLE SECTION VIEW 1:50



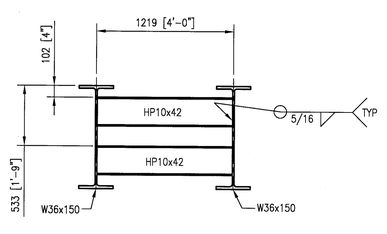
1/04 STRINGER PACK DETAIL 1:50

NOTE: STRINGER PACKS SHALL BE MODIFIED AS REQUIRED AT BATTER PILE LOCATIONS, SEE DETAILS 2/03 & 2/05



2/04 STRINGER PACK DETAIL 1:50

NOTE: STRINGER PACKS SHALL BE MODIFIED AS REQUIRED AT BATTER PILE LOCATIONS, SEE DETAIL 2/03



C/04 SECTION VIEW 1:25

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SYM.	REVISIONS	BY	DATE	CHK'D
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PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA D. A. HAMANN #156203

11-07-17

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KIEWIT LEDCOR TMEP PARTNERSHIP
TRANS MOUNTAIN EXPANSION PROJECT LOWER MAINLAND

TEMPORARY CRANE TRESTLE
SECTION VIEWS & DETAILS

DRAWN BY	DATE	CHKD BY	DATE	SCALE	DWG. NO.	REV.
D. KEARL	6/13/2017			AS NOTED	17-126A-04	0

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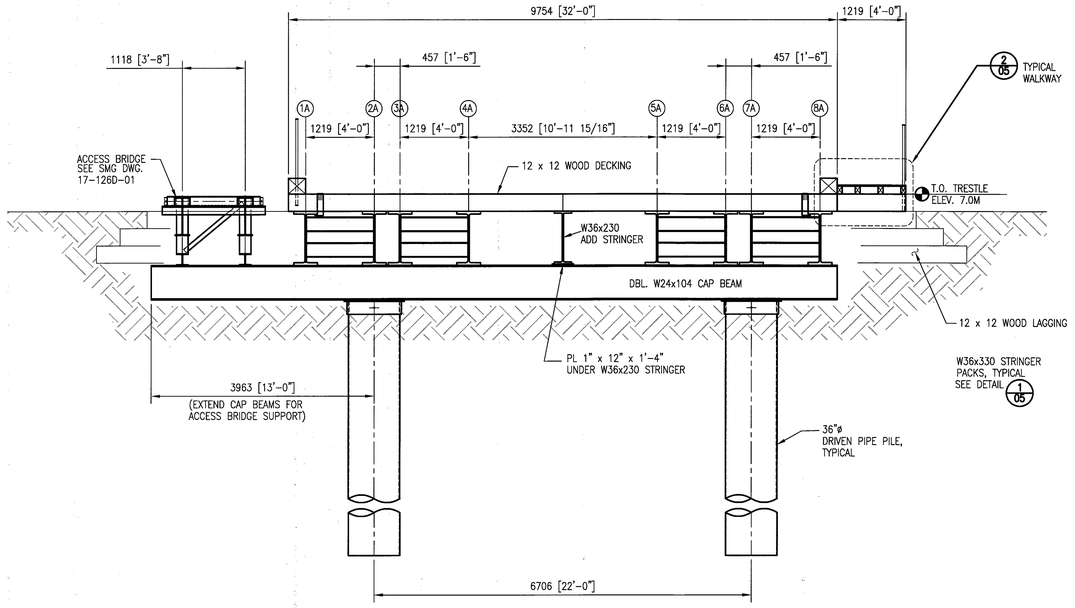
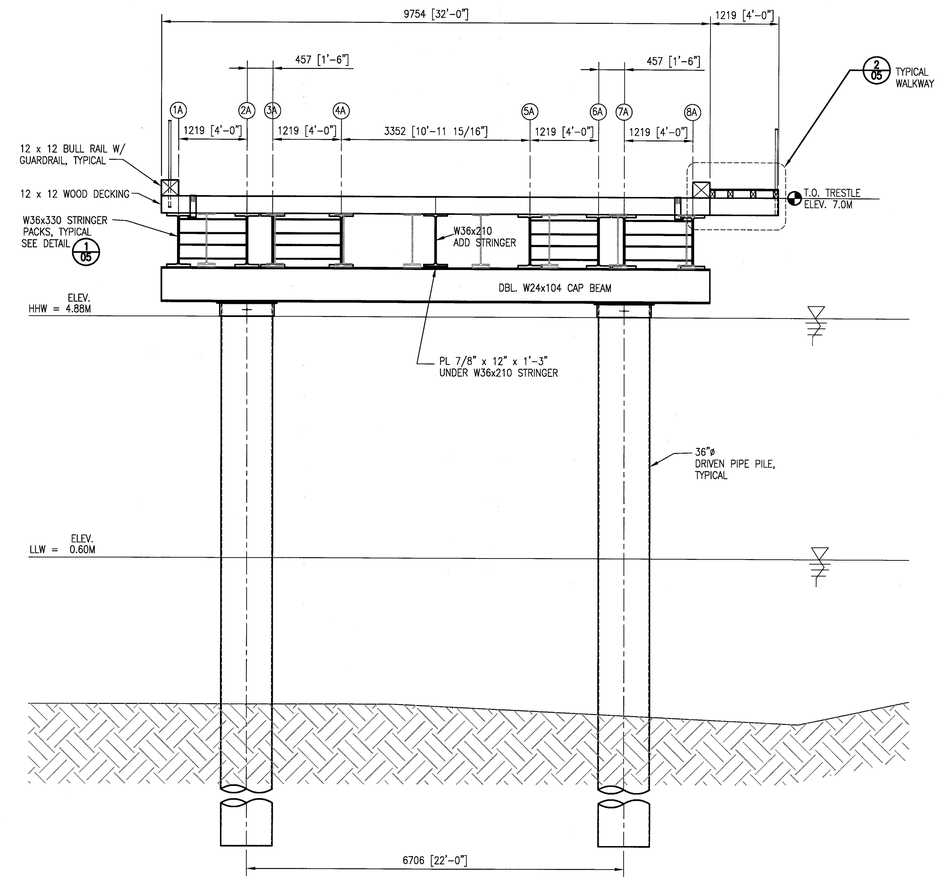
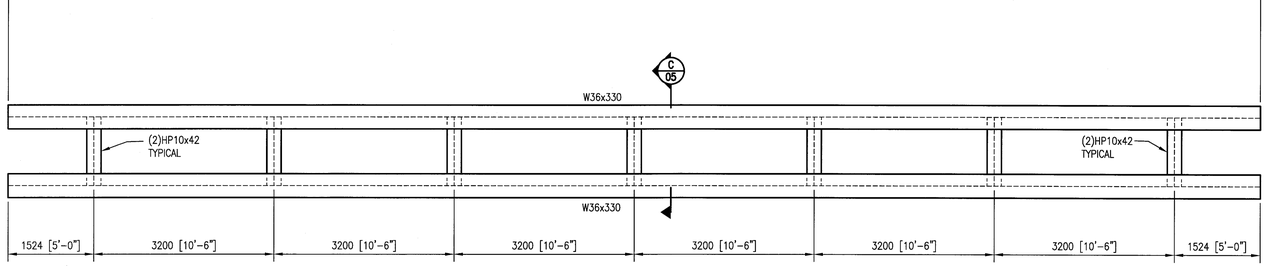


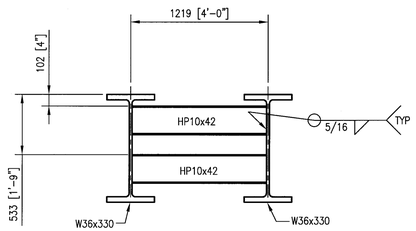
A/05 TRESTLE SECTION VIEW
1:50



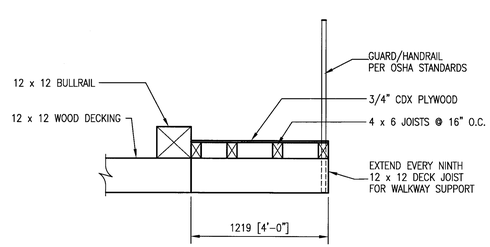
B/05 TRESTLE SECTION VIEW
1:50



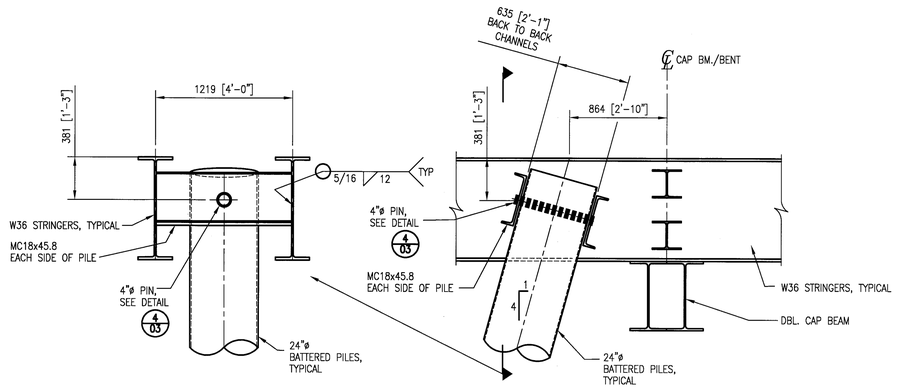
1/05 STRINGER PACK DETAIL
1:50



C/05 SECTION VIEW
1:25



1/05 WALKWAY DETAIL
1:25



2/05 LONGITUDINAL BATTERED PILE DETAIL
1:25

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SYM.	REVISIONS	BY	DATE	CHK'D
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11-07-17

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KIEWIT LEDCOR TMEP PARTNERSHIP
TRANS MOUNTAIN EXPANSION PROJECT LOWER MAINLAND

TEMPORARY CRANE TRESTLE
SECTION VIEWS & DETAILS

DRAWN BY	DATE	CHKD BY	DATE	SCALE	DWG. NO.	REV.
D. KEARL	6/13/2017			AS NOTED	17-126A-05	0

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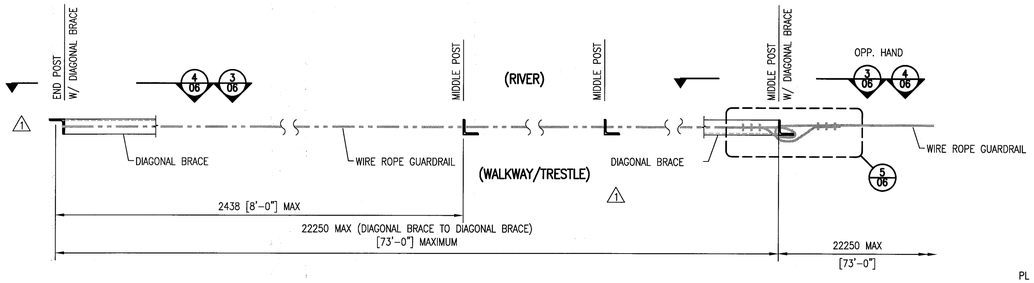
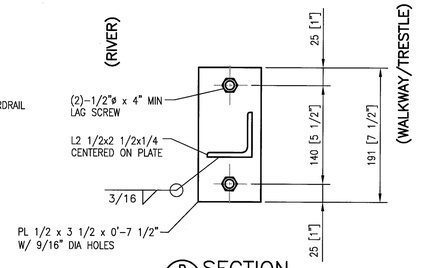
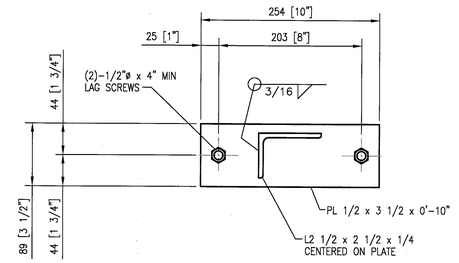


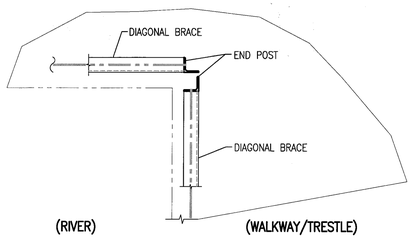
A/06 PLAN – TYPICAL GUARDRAIL
1: 12.5



B/06 SECTION
1 : 4



C/06 SECTION
1 : 4



D/06 PLAN – TRESTLE CORNERS
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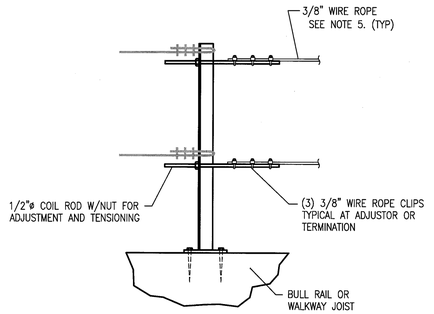

E/06 ELEVATION – GUARDRAIL WIRE TENSIONING
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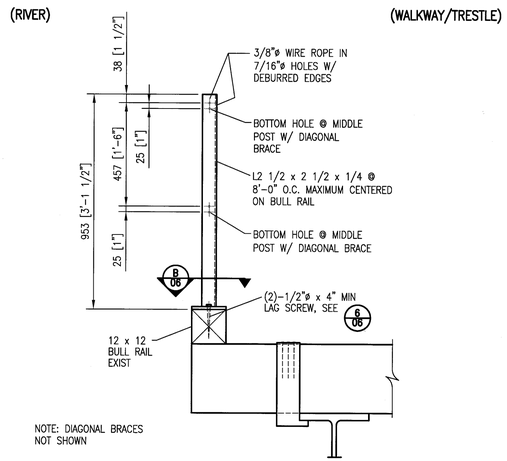
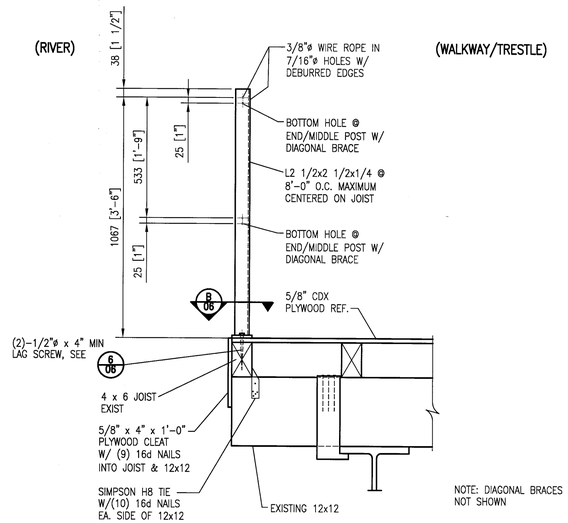
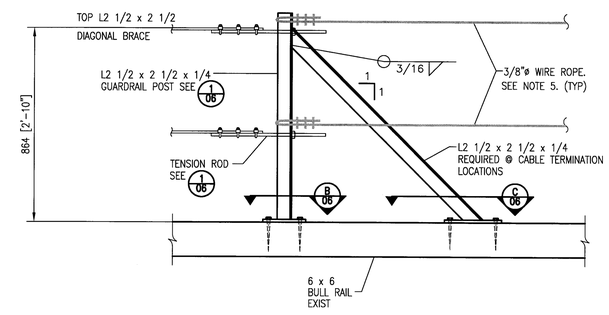


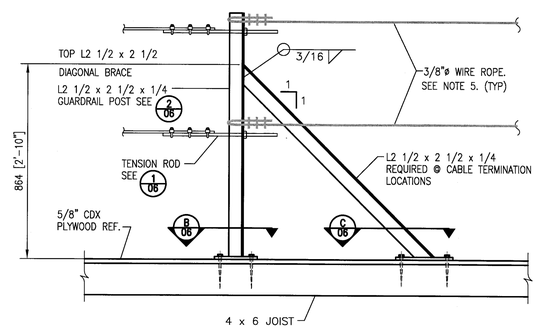
1/06 SECTION – END/MIDDLE POST
1 : 12.5



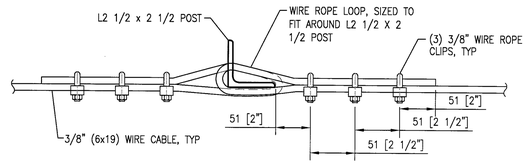
2/06 SECTION – END/MIDDLE POST
1 : 12.5



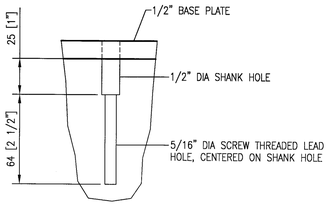
3/06 ELEVATION – END/MIDDLE POST W/ DIAGONAL BRACE @ BULL RAIL



4/06 ELEVATION – END/MIDDLE POST W/ DIAGONAL BRACE @ WALKWAY



5/06 DETAIL – GUARDRAIL TERMINATION
1: 4



6/06 LAG SCREW LEAD HOLE
1: 2

GENERAL NOTES:

1. GUARDRAIL DESIGNED FOR MAXIMUM HORIZONTAL OR VERTICAL DOWNWARD FORCE. OF 550N (125 LBS).
2. WIRE ROPE – 7x19 GALVANIZED AIRCRAFT CABLE WITH A MINIMUM BREAKING STRENGTH OF 64.1 KN (14,400 POUNDS.)
3. WIRE ROPE CLIPS – FORGED WIRE ROPE CLIPS (CROSBY TYPE), INSTALLED PER MANUFACTURER'S WRITTEN SPECIFICATIONS AND INSTRUCTIONS.
4. COIL ROD & NUT – DAYTON/RICHMOND B–12 COIL ROD W/B–13 COIL NUT, OR EQUAL.
5. VERTICAL DEFLECTON OF WIRE ROPE BETWEEN POSTS @ 8'–0" O.C., AT TIME OF INSTALLATION, SHALL BE ½" TO 1" MAXIMUM.
6. LAG SCREWS SHALL BE INSTALLED BY TURNING WITH A WRENCH, NOT DRIVEN.
7. MEMBER SIZES SHOWN ARE MINIMUM REQUIRED, APPROVED EQUIVALENT OR LARGER MEMBER SECTIONS MAY BE SUBSTITUTED, UPON WRITTEN APPROVAL FROM SMG.
8. DIMENSIONS SHOWN ARE IN METRIC AND IMPERIAL UNITS. MATERIAL SIZES SHOWN ARE IN IMPERIAL UNITS ONLY.

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KIEWIT LEDCOR TMEP PARTNERSHIP
TRANS MOUNTAIN EXPANSION PROJECT LOWER MAINLAND

TEMPORARY CRANE TRESTLE GUARDRAIL DETAILS

DRAWN BY	DATE	CHKD BY	DATE	SCALE	DWG. NO.	REV.
D. KEARL	11/6/2017			AS NOTED	17-126A-06	0

FILE: Q:\17\17126 KIEWIT LEDCOR TMEP PARTNERSHIP TMEP LOWER MAINLAND\PHASE A TEMPORARY TRESTLE\DWGS\17126A01-07.dwg, D6Rev0, PLOT 1=1, 11/07/17 AT 13:29, Printed By: dwk014

APPENDIX E – FLEXI-FLOAT AND ACCESS RAMP

WORK SHEET

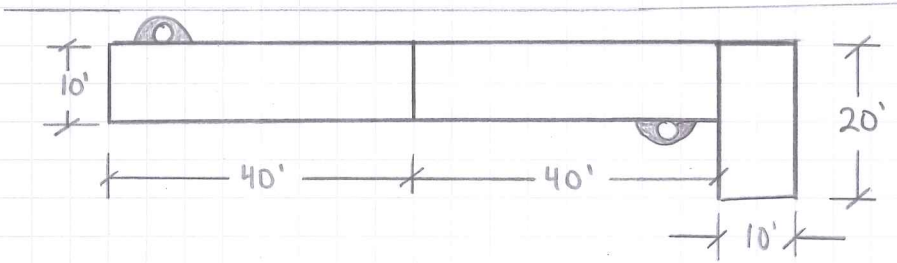
Item No.
Sheet No.

Estimator
Date

Project
Type of Work

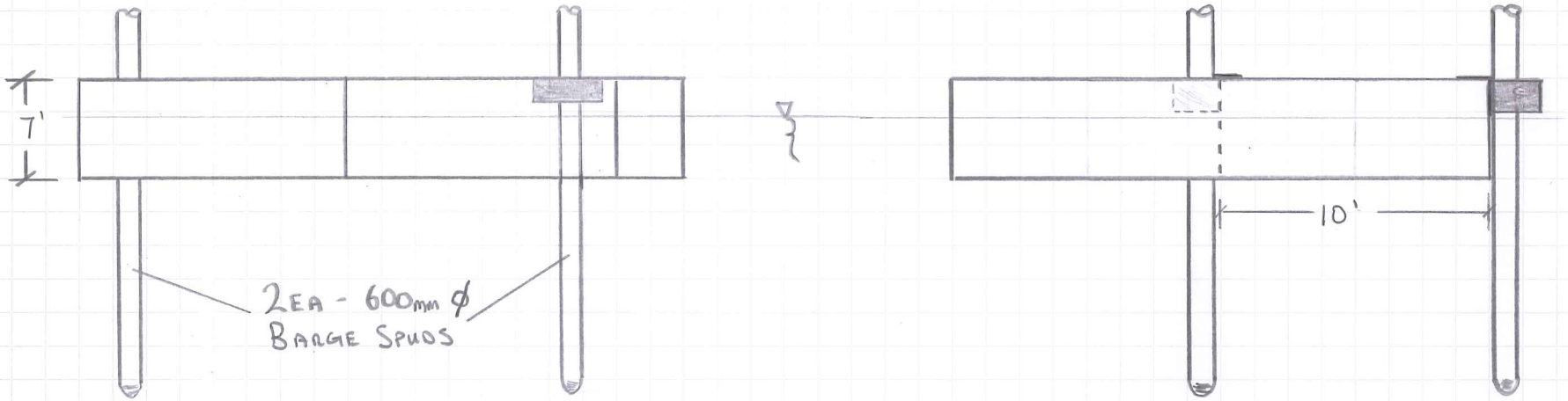
Form 435 - Printed in U.S.A. 11/95

TRESTLE



SITE 1 - FLEXI-FLOAT DOCK DETAILS

C. PERESSINI
12/JUL/17
NTS



THE POSEIDON® II PORTABLE SECTIONAL BARGE

- Now fabricating P2-7' sections to **ABS approved plans!**
- Flexifloat® Compatible Connection
- 20,000 psf point load capacity
- Exterior Coated with Baril Zinc Urethane Primer & an Aliphatic Polyuria Finish
- Interior Coated with Bio-Float
- **18" deck hatches allow for OSHA required interior inspections #1926.1437.**
- Counter sunk Zinc Anodes for additional corrosion control
- Stocking 24" Spuds with Pockets
- Sides and Bottoms fabricated with Grade A36 Steel
- Tops fabricated with a 11 gauge roll form embossed steel with patented skirt plate design U.S. D0807,9320
- Engineering Stability Analysis and platform design available
- Pocket Mounted Pullmaster H-18 and M-18 winches with Independent Hydraulic Power Packs

Stock Item Sizes with Shipping Weights:

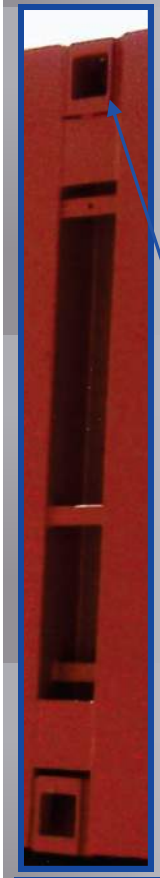
40' x 10' x 7' - 31,207 lbs.
20' x 10' x 7' - 16,587 lbs.
10' x 10' x 7' Rakes 7,732 lbs.
20' x 10' x 7' Ramps: 12,150 lbs.
Spud Pockets: 4,350 lbs.
Pocket Mounted Winch units
Male to Male Adapters
Railing Brackets
Bolt on Deck Cleats

POSEIDON® BARGE

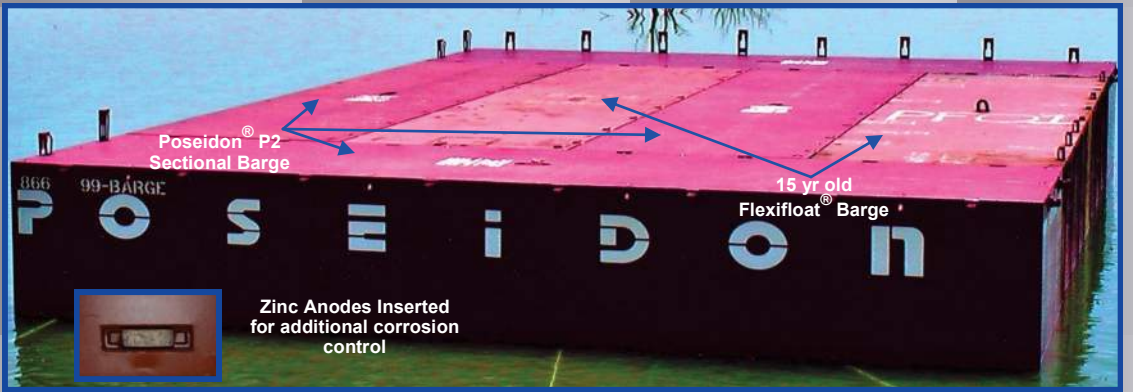
MID-AMERICA FOUNDATION SUPPLY INC d/b/a POSEIDON® BARGE
3101 NEW HAVEN AVE, FORT WAYNE, IN 46803
PH: 866-99-BARGE; FAX 260-424-8635; WEBSITE; www.poseidonbarge.com

POSEIDON® Barge Corp.

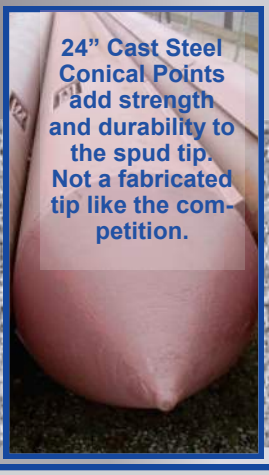
866-992-2743



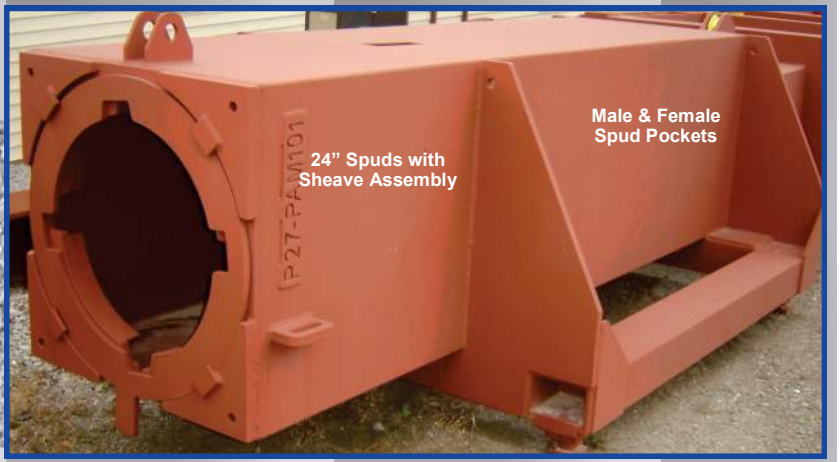
The lock-bar pin is incorpo-rated into the female side of the barge



24" x 1/2" Wall Spuds: Stock lengths range from 40' up to 120' lengths. Longer lengths are shipped in two pieces and welded together at the job



24" Cast Steel Conical Points add strength and durability to the spud tip. Not a fabricated tip like the com-petition.



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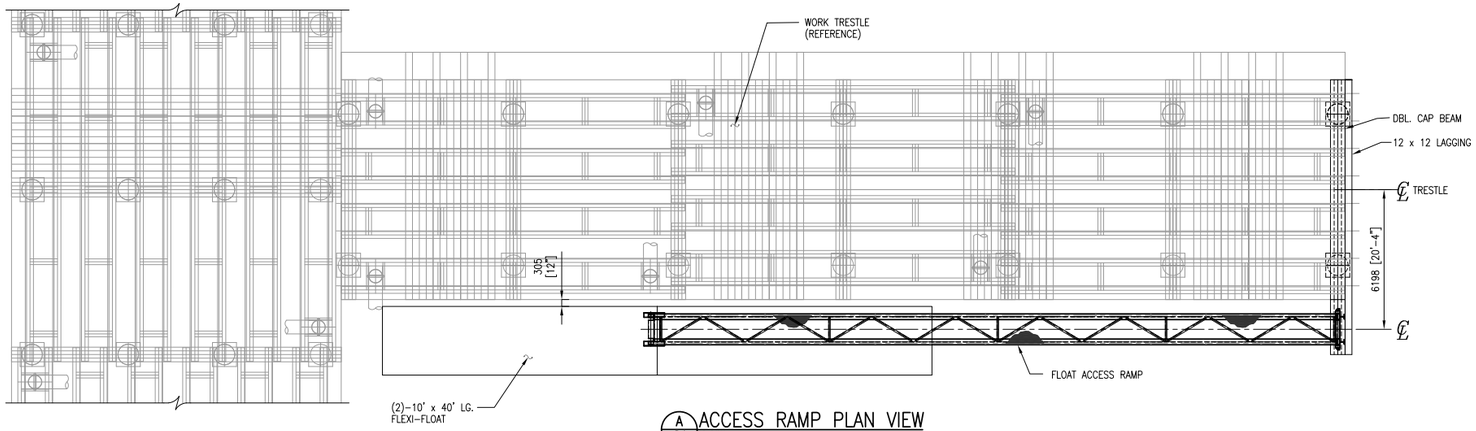
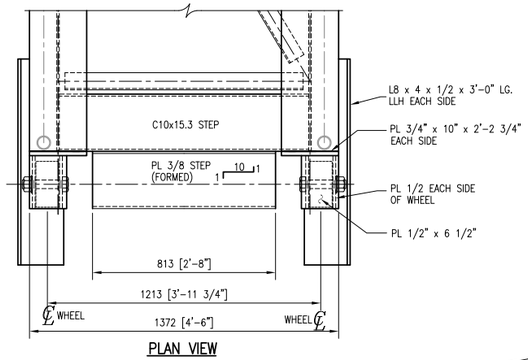
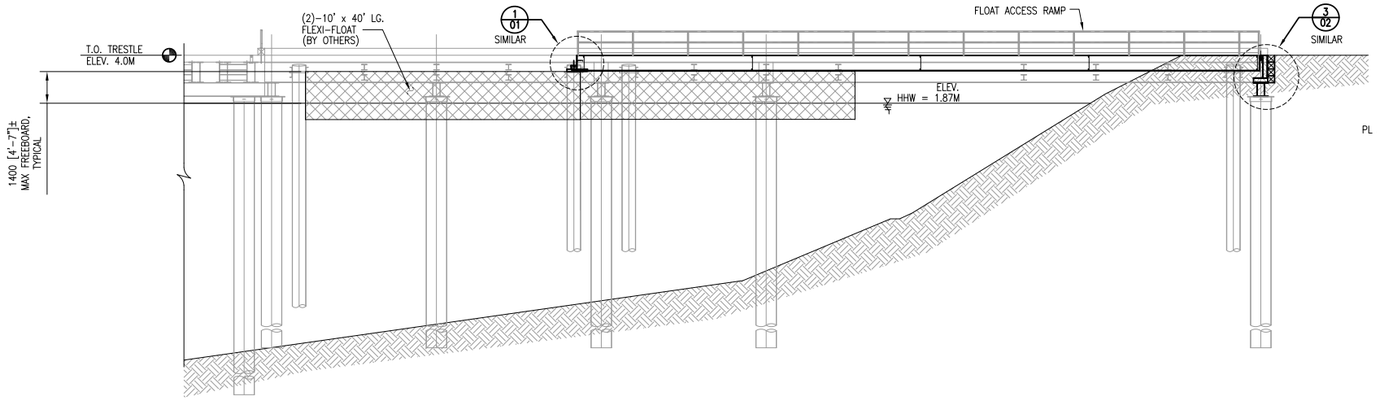


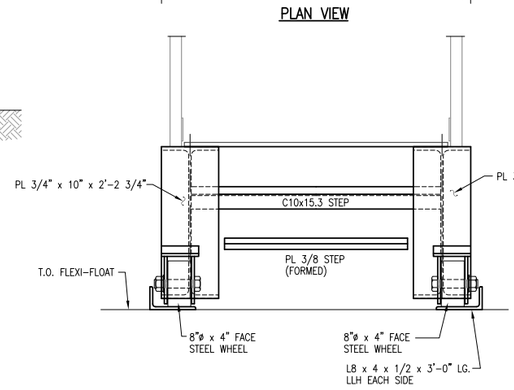
A/01 ACCESS RAMP PLAN VIEW 1:125

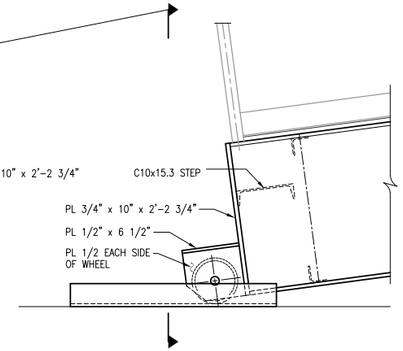


PLAN VIEW

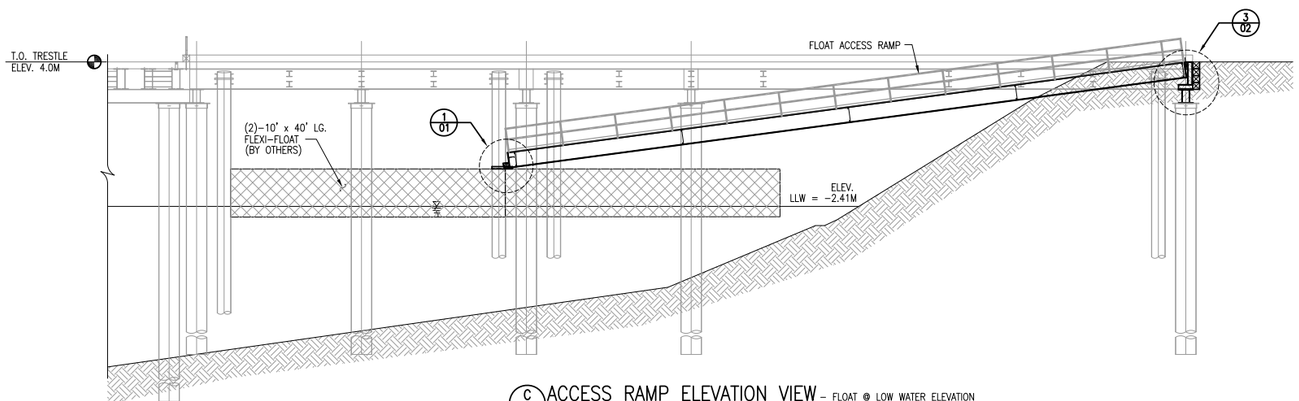


B/01 ACCESS RAMP ELEVATION VIEW – FLOAT @ HIGH WATER ELEVATION 1:125





1/01 DETAIL 1:12.5



C/01 ACCESS RAMP ELEVATION VIEW – FLOAT @ LOW WATER ELEVATION 1:125

GENERAL NOTES:

1. ALL STEEL DETAILING, FABRICATION AND IDENTIFICATION SHALL CONFORM TO THE CANADIAN INSTITUTE OF STEEL CONSTRUCTION (CISC) SPECIFICATIONS.
2. STRUCTURAL STEEL SHAPES SHALL CONFORM TO ASTM A572 GRADE 50 OR ASTM A992, U.N.O., ANGLES, CHANNELS AND PLATES SHALL BE ASTM A36.
3. WELD ELECTRODES SHALL CONFORM TO E70XX CLASSIFICATION ACCORDING TO CAN/CSA-S16 SPECIFICATIONS, CURRENT EDITION.
4. STIFFENER PLATES SHALL BE WELDED WITH DOUBLE 5/16" FILLETS AT WEBS AND DOUBLE 3/8" FILLETS AT FLANGES. STIFFENER PLATES SHALL EXTEND TO WITHIN 1/4" FROM EDGES OF FLANGES.
5. WELDS SHALL BE INSPECTED AS REQUIRED TO ENSURE THAT THE WELD QUALITY MEETS THE REQUIREMENTS OF THE LATEST CWB CODE.
6. STRUCTURAL BOLTED CONNECTIONS SHALL CONFORM TO AISC SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 BOLTS, UNLESS OTHERWISE NOTED.
8. BEAM SIZES SHOWN ARE MINIMUM REQUIRED, LARGER BEAMS MAY BE SUBSTITUTED.
9. EXISTING GRADE SHOWN ON THE ELEVATION VIEW AND SECTIONS IS BASED ON TOPOGRAPHICAL INFORMATION SHOWN ON CONTRACT DRAWINGS.
10. DESIGN LOADS:
    A) ACCESS WALKWAY – 50 PSF
11. DIMENSIONS ARE SHOWN IN METRIC AND IMPERIAL UNITS. MATERIALS ARE SHOWN IN IMPERIAL SIZES ONLY.

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SYM.	REVISIONS	BY	DATE	CHK'D
A	ISSUED FOR REVIEW	DK	10/3/2017	DAH

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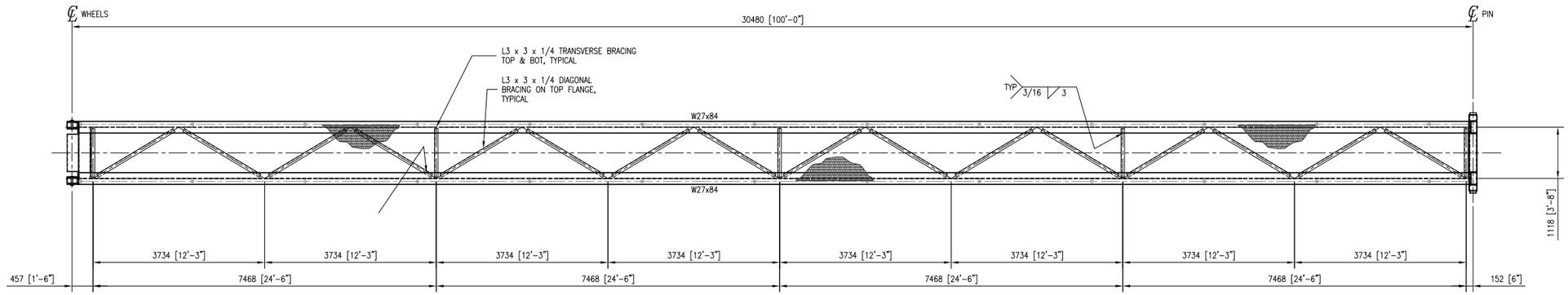
www.smgengr.com

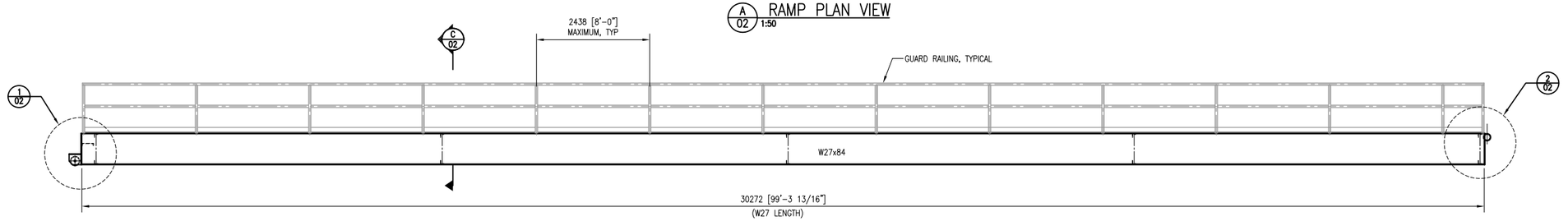
KIEWIT LEDCOR TMEP PARTNERSHIP
TRANS MOUNTAIN EXPANSION PROJECT LOWER MAINLAND

FLOAT ACCESS RAMP
PLAN, ELEVATION VIEWS & NOTES

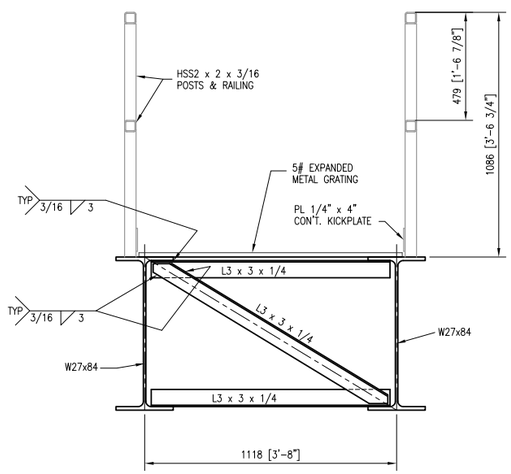
DRAWN BY	DATE	CHKD BY	DATE	SCALE	DWG. NO.	REV.
D. KEARL	10/2/2017			AS NOTED	17-126D-01	A



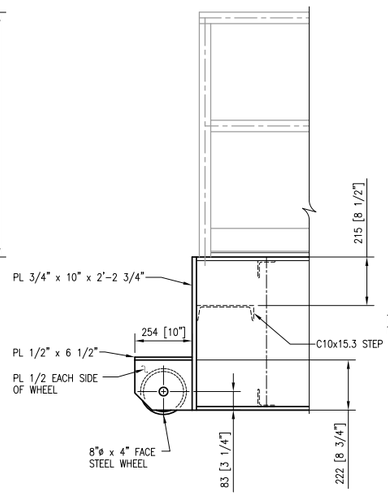
A 02 RAMP PLAN VIEW 1:50



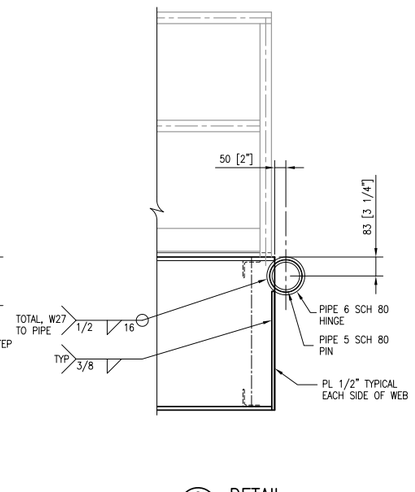
B 02 RAMP ELEVATION VIEW 1:50



C 02 TYPICAL SECTION VIEW 1:12.5



1 02 DETAIL 1:12.5



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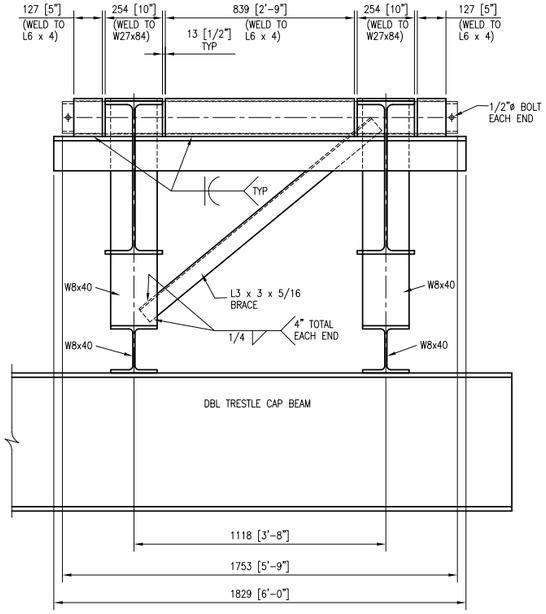

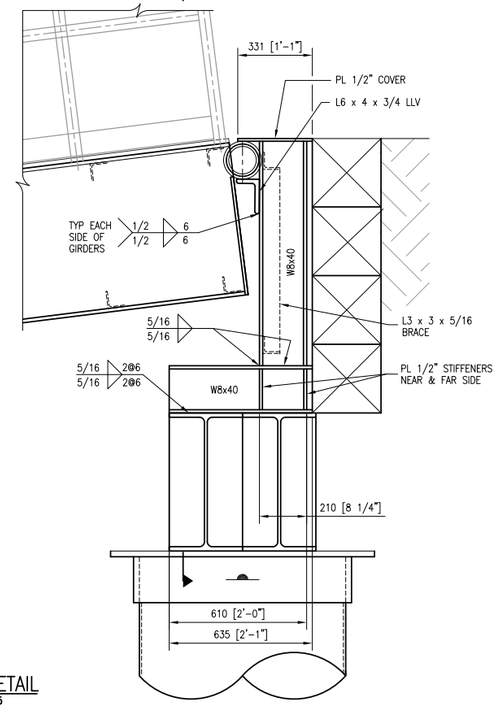

3 02 DETAIL 1:12.5

PRELIMINARY

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SYM.	REVISIONS	BY	DATE	CHK'D
A	ISSUED FOR REVIEW	DK	10/3/2017	DAH

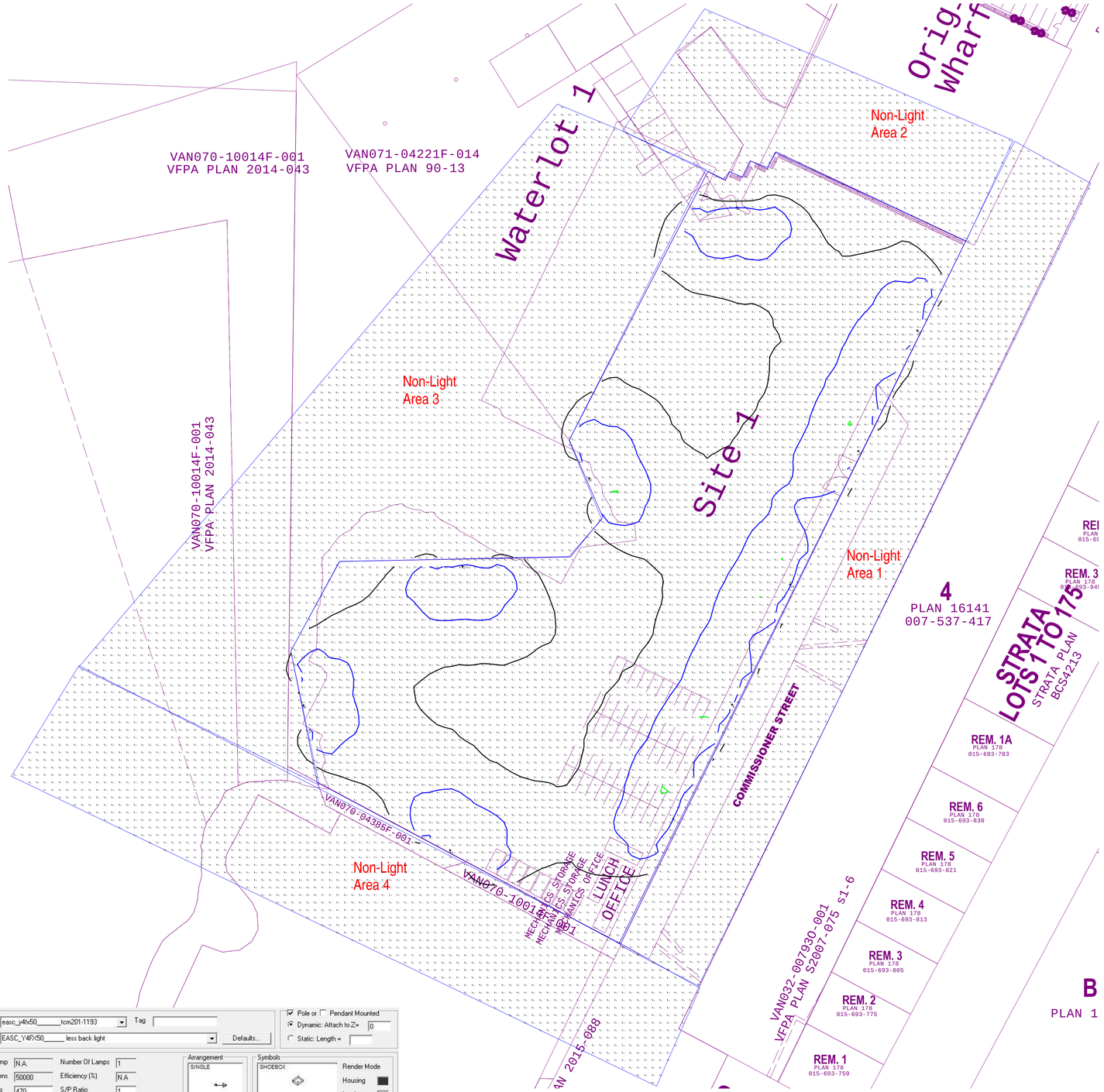
Smith Monroe Gray
ENGINEERS, INC.
8625 SW Cascade Ave.
Suite 600
Beaverton, Oregon 97008
Phone: 503.643.8595
Fax: 503.643.8610
www.smgengr.com

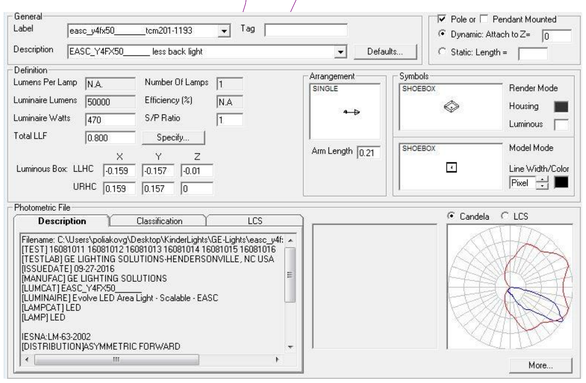
KIEWIT LEDCOR TMEP PARTNERSHIP
TRANS MOUNTAIN EXPANSION PROJECT LOWER MAINLAND

FLOAT ACCESS RAMP
DETAILS

DRAWN BY	DATE	CHK'D BY	DATE	SCALE	DWG. NO.	REV.
D. KEARL	10/2/2017			AS NOTED	17-126D-02	A

APPENDIX E – FLEXI-FLOAT AND ACCESS RAMP





Luminaire Location Summary

Coordinates In Meters

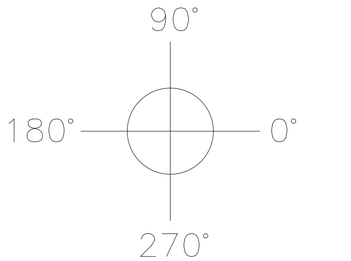
Luminaire Location Summary								
LumNo	Label		X	Y	Z	Orient	Tilt	Switched
6	easc_y4fx50	tcm201-1193	495414.3	5459404.	9	58.593	30	On
7	easc_y4fx50	tcm201-1193	495474.0	5459413.	9	155.008	30	On
8	easc_y4fx50	tcm201-1193	495489.7	5459443.	9	154.416	30	On
13	easc_y4fx50	tcm201-1193	495505.1	5459475.	9	154.416	30	On
14	easc_y4fx50	tcm201-1193	495523.3	5459511.	9	154.416	30	On
15	easc_y4fx50	tcm201-1193	495539.0	5459543.	9	154.416	30	On
50	easc_y4fx50	tcm201-1193	495375.1	5459443.	9	8.948	30	On
51	easc_y4fx50	tcm201-1193	495417.7	5459480.	9	269.974	30	On
52	easc_y4fx50	tcm201-1193	495451.3	5459604.	9	21.232	30	On
53	easc_y4fx50	tcm201-1193	495490.6	5459576.	9	269.945	30	On

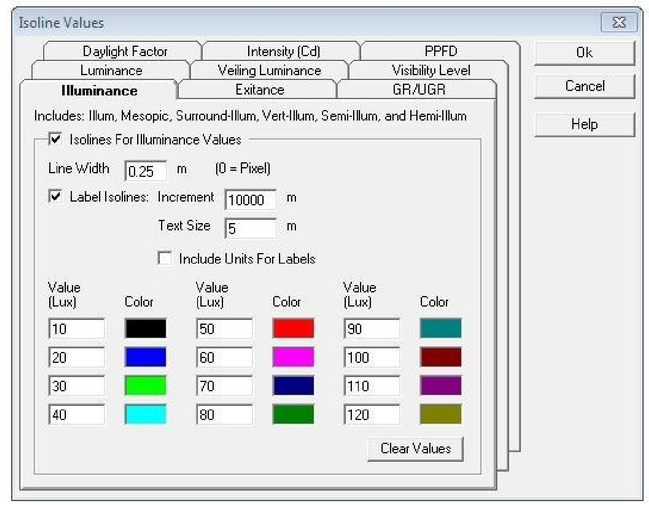
Calculation Summary

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
MainCalcArea (Site 1)_Planar	Illuminance	Lux	14.66	30.6	0.7	20.94	43.71
Non-Light-Area 1_Planar	Illuminance	Lux	1.46	13.5	0.1	14.60	135.00
Non-Light-Area 2_Planar	Illuminance	Lux	1.14	4.6	0.1	11.40	46.00
Non-Light-Area 3_Planar	Illuminance	Lux	1.93	15.2	0.2	9.65	76.00
Non-Light-Area 4_Planar	Illuminance	Lux	0.96	16.5	0.1	9.60	165.00

Luminaire Summary

Luminaire Schedule						
Symbol	Qty	Label	Arrangement	Total Lamp Lumens	LLF	Description
	10	easc_y4fx50_____tcm201-1193	SINGLE	N.A.	0.800	EASC_Y4FX50_____ less back light





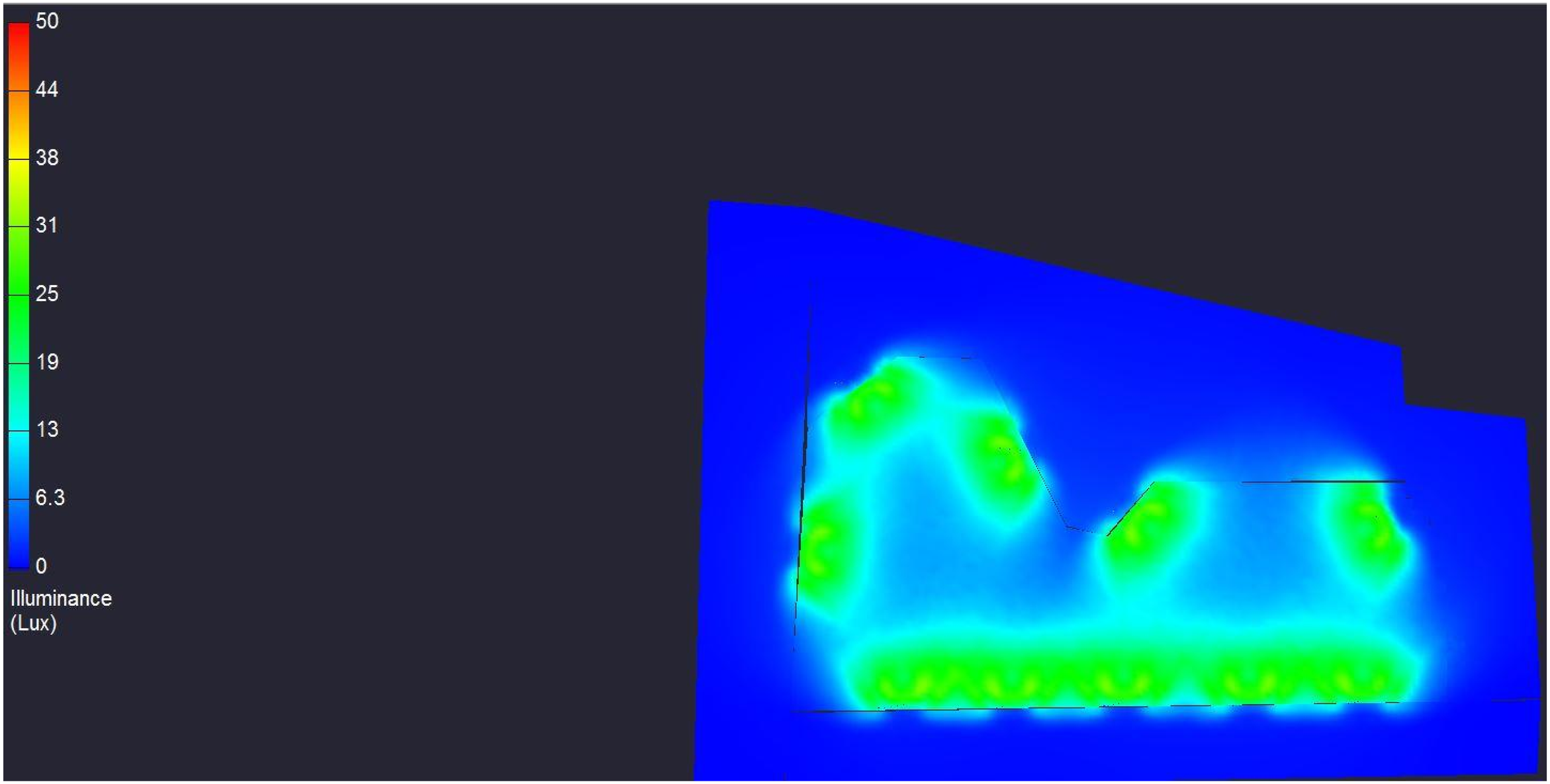
XX	XXX	XXX	XXX	YY/MM/DD	XX	XX	XX	XX	XXX	
NO.	REFERENCE DRAWING TITLE	REFERENCE DRAWING NO.	NO	DATE	REVISION	DRN	CHK	ENG	APPR	

BANTREL

KLTP

DRAWN BY G. Poliakov	2115 Commissioner St. Site 1 Laydown Site Plan and Calculations	SHEET SIZE A1
CHECKED BY B. Oryshak		SCALE NTS
APPROVED BY		DATE 17/07/12

PROJECT CODING	DRAWING NUMBER			
AFE	FACILITY ID	DOCUMENT NO	SHT NO	REV
XXX	XXX —	XXX	001	A



NO.	REFERENCE DRAWING TITLE	REFERENCE DRAWING NO.	NO	DATE	REVISION	DRN	CHK	ENG	APPR
XX	XXX	XXX	XXX	YY/MM/DD	XX	XX	XX	XX	XXX

BANTREL

KLTP

DRAWN BY G. Poliakov	2115 Commissioner St. Site 1 Laydown Site Plan and Calculations	SHEET SIZE A1
CHECKED BY B. Oryshak		SCALE NTS
APPROVED BY		DATE 17/07/12

PROJECT CODING	DRAWING NUMBER			
AFE	FACILITY ID	DOCUMENT NO	SHT NO	REV
XXX	XXX —	XXX	002	A

Product Features

The next evolution of the GE Evolve™ EASC LED Area Light continues to deliver outstanding features, while adding greater lumen output, flexibility and style. This latest design focuses on high lumen output and provides photometric combinations with high efficacy, providing the ability to serve demanding area applications where pole spacing is wide and illuminance requirements are high. The EASC Evolve Luminaire comes with a specially designed auto dealership optic for exceptional illuminance on the dealership's front row, while providing an impressive high lumen output. Optional programmable motion sensing for Title 24 compliance is available.

Applications

- Site, area, roadway and general lighting applications utilizing advanced LED optical system providing high uniformity, excellent vertical light distribution, reduced offsite visibility, reduced on-site glare and effective security light levels.
- Ideal for large retailers, commercial to medical properties, and big box retailers. Also suitable for roadways.

Housing

- Die-cast aluminum housing.
- Slim architectural design incorporates an integral heat sink and light engine, ensuring maximum heat transfer, long LED life, and a reduced Effective Projected Area (EPA).
- Meets 3G vibration standards per ANSI C136.31-2010 for Slipfitter and Mounting Arm configurations. Meets 1.5G vibration standards for Knuckle Slipfitter Mounting.

LED & Optical Assembly

- Structured LED arrays for optimized area light photometric distribution.
- Evolve light engine with directional reflectors designed to optimize application efficiency and minimize glare.
- Utilizes high brightness LEDs, 70 CRI at 3000K, 4000K and 5000K typical.

Lumen Maintenance

- Projected L90>50,000 hours per IES TM-21 L5, L4, L3, L2, LA ,V5, M5, M4, M3, M2, MA ,W5
- Projected L90>100,000 hours per IES TM-21 Y5, Y4, Y3, Y2, YA & Z5
- Projected Lxx per IES TM-21 at 25°C for reference:

Optical Codes	Lxx (18k) @ Hours*		
	25,000 hr	50,000 hr	100,000 hr
L5, L4, L3, L2, LA & V5 M5, M4, M3, M2, MA, W5	L94	L90	L82

Optical Codes	Lxx (6k) @ Hours**		
	25,000 hr	50,000 hr	100,000 hr
Y5, Y4, Y3, Y2, YA & Z5	L96	L94	L90

Note: *Projected Lxx based on LM80 (18,000 hour testing). **Projected Lxx based on LM80 (6,000 hour testing).
DOE Lighting Facts Verification Testing Tolerances apply to initial luminous flux and lumen maintenance measurements.

Lumen Ambient Temperature Factors:

Ambient Temperature: (°C)	Initial Flux Factor
10	1.02
20	1.01
25	1.00
30	0.99
35	0.98

Ratings

- UL listed, suitable for wet locations.
- cUL listed with option code "J" SKUs.
- IP65 rated optical enclosure per ANSI C136.25-2009.
- Temperature rated at –40° to 35°C
- Upward Light Output Ratio (ULOR) = 0.
- Title 24 compliant with "H" motion sensor option.
- Compliant with the material restriction of RoHS.
- DLC Premium qualified models available. Please refer to http://www.designlights.org/QPL for complete information.

Mounting

- **Option A** -10-inch (254mm) mounting arm for square pole prewired with 24-inch (610mm) leads.
- **Option B** -10-inch (254mm) mounting arm for round pole prewired with 24-inch (610mm) leads.
- **Option C** -Slipfitter mounting for 2 3/8-inch (60mm) O.D. pipe prewired with 24-inch (610mm) leads.
- **Option D** -10-inch (254mm) mounting arm for round or square pole prewired with 24-inch (610mm) leads.
- **Option S** -Knuckle Slipfitter mounting for 2.3-3" O.D. pipe, pre-wired with 24-inch (610mm) leads.

Finish

- Corrosion resistant polyester powder painted, minimum 2.0 mil. thickness.
- Standard colors: Black & Dark Bronze.
- RAL & custom colors available.

Electrical

- 120-277 VAC and 347-480 VAC available.
- System power factor is >90% and THD <20%.
- ANSI C136.41 7-pin dimming receptacle, standard.
- ANSI photo electric sensors (PE) available for all voltages. Light Grid compatible.
- Dimming/Occupancy:
  - Wired 0-10V continuous dimming
  - DALI digital dimming. Contact manufacturer for availability.
  - Standalone motion sensor based dimming using "H" option code.
- Surge Protection per ANSI C136.2-2015.
  - 6kV/3kA "Basic" surge protection, standard.
  - 10kV/5kA "Enhanced" surge protection optional.

Accessories

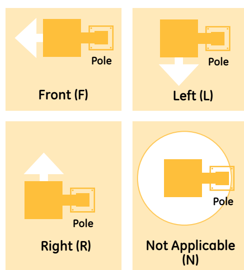
- Photoelectric Controls (see page 3).

Ordering Number Logic

Evolve™ LED Scalable Area Light (EASC)

E A S _ _ _   C _   _   _   _   _ _   _   _   _ _ _ _   _ _ _

PROD. ID	PHOTOMETRIC	VOLTAGE	OPTICAL CODE	DISTRIBUTION ORIENTATION	DRIVE CURRENT	LED COLOR TEMP	PE FUNCTION	MOUNTING ARM	COLOR	OPTIONS
E = Evolve **A** = Area **S** = Scalable	**C** = Photometric Series	**0** = 120 - 277 **1** = 120* **2** = 208* **3** = 240* **4** = 277* **5** = 480* **D** = 347* **H** = 347-480 *Specify single voltage if fuse option is selected.		**F** = Front **L** = Left **R** = Right **N** = Not Applicable Light pattern thrown in direction specified in relation to Pole and Fixture.	**7** = 700mA (380W or 398W Only) **X** = Greater than 700mA (>380W)	**30** = 3000K **40** = 4000K **50** = 5000K	**1** = None **A** = ANSI C136.41 7-pin dimming PE Receptacle †# **D** = ANSI C136.41 7-pin dimming PE Receptacle with Shorting Cap †# † When ordering PE function socket A-D, a dimming driver must also be ordered under the "OPTIONS" column. # Order Dimming/Control PE as a separate item.	**A** = 10" Arm for Square Pole supplied with leads **B** = 10" Arm for Round Pole supplied with leads **C** = EXT Slip-fitter 2" Pipe (2.378 in. OD) supplied with leads **D** = 10" Arm for round or square poles, supplied with leads and additional hardware **S** = Knuckle Slipfitter for 2.3 in. - 3.0 in. OD Tenon, supplied with leads. 0-45° vertical aiming angles achievable.	**BLCK** = Black **DKBZ** = Dark Bronze **GRAY** = Gray **WHTE** = White Contact manufacturer for other colors.	**C** = IEC **D** = Dimming (0-10 Volt Input)† **F** = Fusing **H** = Motion Sensor**# **J** = cUL/Canada **R** = 10kV Extra Surge Protection **U** = DALI dimming+^ **XXX** = Special Options † Dimming leads will be provided through the back of the arm, unless specified with A or D PE Function. ** When ordering Motion Sensing Option H - "A" or "B" Mounting Arm must be selected. Fixture power increase of 1W expected with sensor use. # Dimming is standard with H option code. Do not also select D option. + Compatible with LightGrid 2.0 nodes ^Not compatible at 347-480V or with motion sensor control.



	OPTICAL CODE	TYPE	TYPICAL INITIAL LUMENS 3000K	4000K	5000K	TYPICAL SYSTEM WATTAGE 120-277V & 347-480V	DISTRIBUTION ORIENTATION AVAILABLE	BUG RATING* 3000K B-U-G	4000K B-U-G	5000K B-U-G	IES FILE NUMBER 3000K	4000K	5000K
TYPE V	L5†	Symmetric Medium	36500	38000	38000	380	N	5-0-4	5-0-4	5-0-4	EASC_L5N730_____.IES	EASC_L5N740_____.IES	EASC_L5N750_____.IES
	M5	Symmetric Medium	N/A	N/A	40400	404	N	N/A	N/A	5-0-4	N/A	N/A	EASC_M5NX50_____.IES
	Y5	Symmetric Medium	48000	50000	50000	470	N	5-0-4	5-0-4	5-0-4	EASC_Y5NX30_____.IES	EASC_Y5NX40_____.IES	EASC_Y5NX50_____.IES
	V5†	Symmetric Short	39800	41500	41500	380	N	5-0-3	5-0-3	5-0-3	EASC_V5N730_____.IES	EASC_V5N740_____.IES	EASC_V5N750_____.IES
	W5	Symmetric Short	N/A	N/A	44100	404	N	N/A	N/A	5-0-3	N/A	N/A	EASC_W5NX50_____.IES
	Z5	Symmetric Short	54200	56500	56500	470	N	5-0-3	5-0-4	5-0-4	EASC_Z5NX30_____.IES	EASC_Z5NX40_____.IES	EASC_Z5NX50_____.IES
TYPE IV	L4†	Asymmetric Forward	36800	38300	38300	380	F, L, R	3-0-5	3-0-5	3-0-5	EASC_L4F730_____.IES	EASC_L4F740_____.IES	EASC_L4F750_____.IES
	M4	Asymmetric Forward	N/A	N/A	40700	404	F, L, R	N/A	N/A	3-0-5	N/A	N/A	EASC_M4FX50_____.IES
	Y4	Asymmetric Forward	48000	50000	50000	470	F, L, R	3-0-5	3-0-5	3-0-5	EASC_Y4FX30_____.IES	EASC_Y4FX40_____.IES	EASC_Y4FX50_____.IES
TYPE III	L3†	Asymmetric Wide	39800	41500	41500	380	F, L, R	3-0-4	3-0-4	3-0-4	EASC_L3F730_____.IES	EASC_L3F740_____.IES	EASC_L3F750_____.IES
	M3	Asymmetric Wide	N/A	N/A	44100	404	F, L, R	N/A	N/A	4-0-4	N/A	N/A	EASC_M3FX50_____.IES
	Y3	Asymmetric Wide	54200	56500	56500	470	F, L, R	4-0-5	4-0-5	4-0-5	EASC_Y3FX30_____.IES	EASC_Y3FX40_____.IES	EASC_Y3FX50_____.IES
TYPE II	L2†	Asymmetric Narrow	38400	40000	40000	380	F, L, R	4-0-4	4-0-4	4-0-4	EASC_L2F730_____.IES	EASC_L2F740_____.IES	EASC_L2F750_____.IES
	M2	Asymmetric Narrow	N/A	N/A	42500	404	F, L, R	N/A	N/A	4-0-4	N/A	N/A	EASC_M2FX50_____.IES
	Y2	Asymmetric Narrow	52800	55000	55000	470	F, L, R	4-0-4	4-0-4	4-0-4	EASC_Y2FX30_____.IES	EASC_Y2FX40_____.IES	EASC_Y2FX50_____.IES
AUTO	LA†	Asymmetric 100° Wide Auto	45000	46900	46900	398	F, L, R	5-0-3	5-0-4	5-0-4	EASC_LAF730_____.IES	EASC_LAF740_____.IES	EASC_LAF750_____.IES
	MA	Asymmetric 100 ° Wide Auto	N/A	N/A	49400	404	F, L, R	N/A	N/A	5-0-4	N/A	N/A	EASC_MAFX50_____.IES
	YA	Asymmetric 100° Wide Auto	57600	60000	60000	470	F, L, R	5-0-4	5-0-4	5-0-4	EASC_YAFX30_____.IES	EASC_YAFX40_____.IES	EASC_YAFX50_____.IES

Note: *Rating values for B and G are based on rated lumens and may vary due to flux tolerances. †L-Series and V5 optical codes using 3000K CCT are not DLC QPL listed.

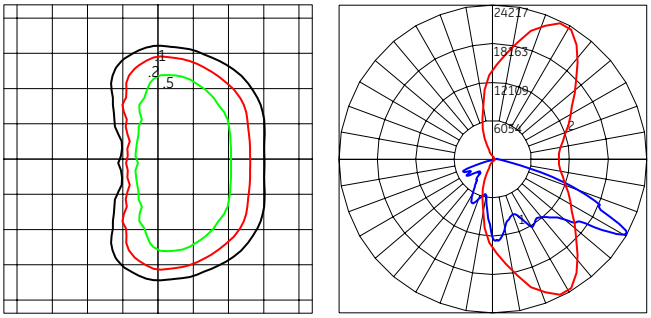
PE Accessories (to be ordered separately)

SAP Number	Part Number	Description
93029237	PED-MV-LED-7	ANSI C136.41 Dimming PE, 120-277V
93029238	PED-347-LED-7	ANSI C136.41 Dimming PE, 347V
93029239	PED-480-LED-7	ANSI C136.41 Dimming PE, 480V

SAP Number	Part Number	Description
28299	PECOTL	STANDARD 120-277V
28294	PEC5TL	STANDARD 480V
80436	PECDTL	STANDARD 347V
73251	SCCL-PECTL	Shorting cap

Photometrics

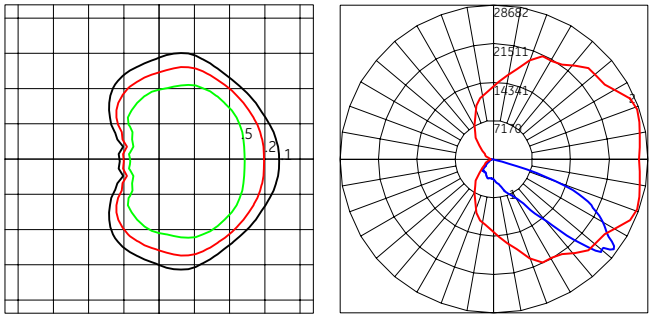
EASC Type III - Asymmetric Narrow (L2)
40,000 Lumens, 5000K (EASC_L2F750___.IES)



Grid Distance in Units of Mounting Height at 40' Initial Footcandle Values at Grade

— Vertical plane through horizontal angle of maximum candlepower at 65°
— Vertical plane through horizontal angle of 60°

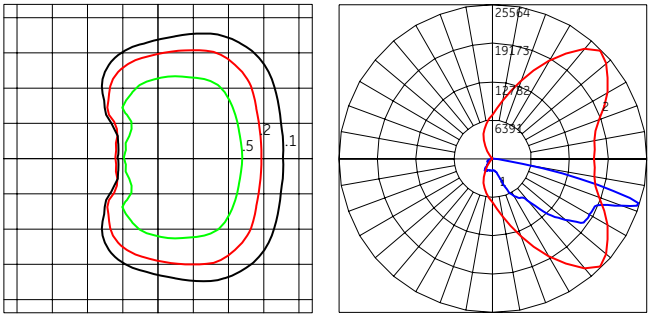
EASC Type III - Asymmetric Wide (L3)
41,500 Lumens, 5000K (EASC_L3F750___.IES)



Grid Distance in Units of Mounting Height at 40' Initial Footcandle Values at Grade

— Vertical plane through horizontal angle of maximum candlepower at 20°
— Vertical plane through horizontal angle of 52°

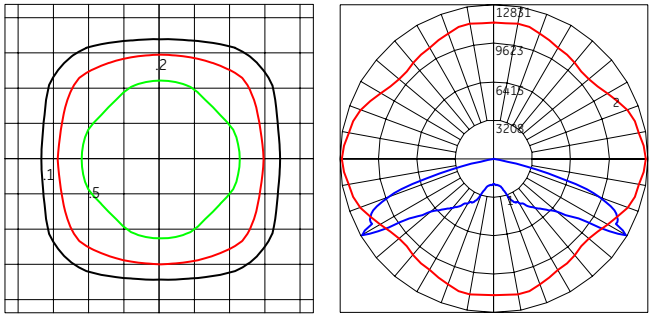
EASC Type IV - Asymmetric Forward (L4)
38,300 Lumens, 5000K (EASC_L4F750___.IES)



Grid Distance in Units of Mounting Height at 40' Initial Footcandle Values at Grade

— Vertical plane through horizontal angle of maximum candlepower at 45°
— Vertical plane through horizontal angle of 73°

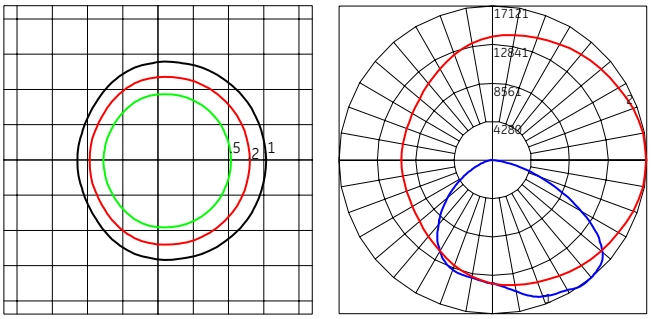
EASC Type VS - Symmetric Medium (L5)
38,000 Lumens, 5000K (EASC_L5N750___.IES)



Grid Distance in Units of Mounting Height at 40' Initial Footcandle Values at Grade

— Vertical plane through horizontal angle of maximum candlepower at 0°
— Vertical plane through horizontal angle of 60°

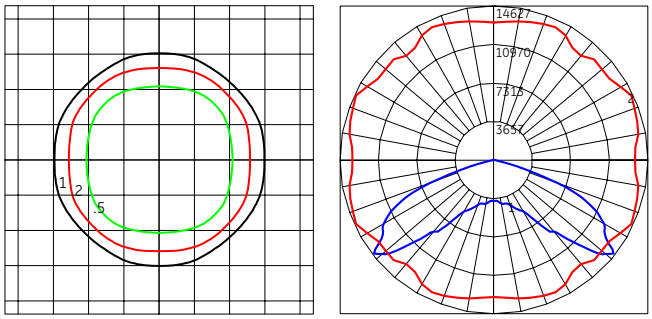
EASC Type III - Asymmetric 100° Wide Auto (LA)
46,900 Lumens, 5000K (EASC_LAF750___.IES)



Grid Distance in Units of Mounting Height at 40' Initial Footcandle Values at Grade

— Vertical plane through horizontal angle of maximum candlepower at 0°
— Vertical plane through horizontal angle of 37°

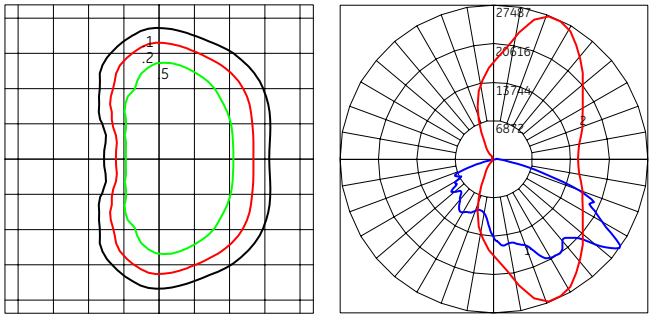
EASC Type VS - Symmetric Short (V5)
41,500 Lumens, 5000K (EASC_V5750___.IES)



Grid Distance in Units of Mounting Height at 40' Initial Footcandle Values at Grade

— Vertical plane through horizontal angle of maximum candlepower at 25°
— Vertical plane through horizontal angle of 52°

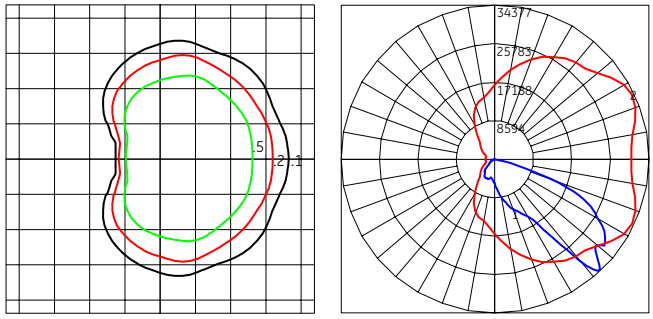
EASC Type II – Asymmetric Narrow (Y2)
55,000 Lumens, 5000K (EASC_Y2FX50_____.IES)



Grid Distance in Units of Mounting Height at 40' Initial Footcandle Values at Grade

— Vertical plane through horizontal angle of maximum candlepower at 70°
— Vertical plane through horizontal angle of 54°

EASC Type III – Asymmetric Wide (Y3)
56,500 Lumens, 5000K (EASC_Y3FX50_____.IES)

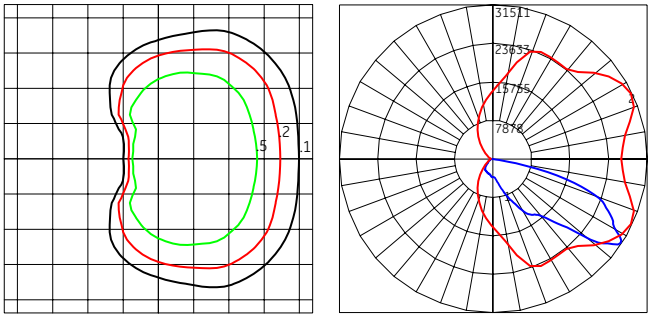


Grid Distance in Units of Mounting Height at 40' Initial Footcandle Values at Grade

— Vertical plane through horizontal angle of maximum candlepower at 25°
— Vertical plane through horizontal angle of 44°

Photometrics

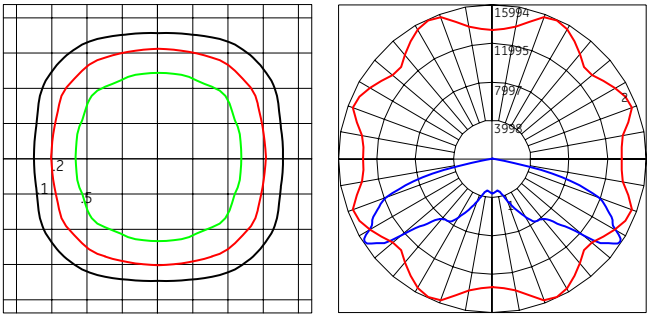
EASC Type IV – Asymmetric Forward (Y4)
50,000 Lumens, 5000K (EASC_Y4FX50_____.IES)



Grid Distance in Units of Mounting Height at 40' Initial Footcandle Values at Grade

— Vertical plane through horizontal angle of maximum candlepower at 25°
— Vertical plane through horizontal angle of 57°

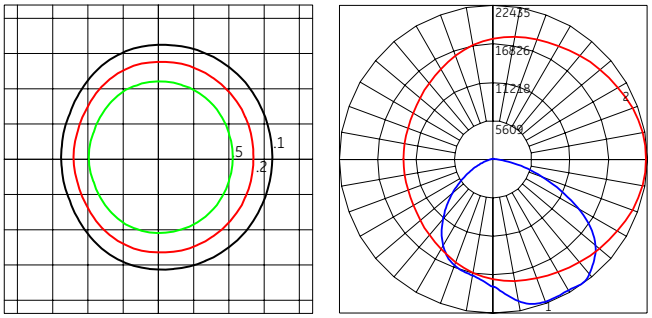
EASC Type V – Symmetric Medium (Y5)
50,000 Lumens, 5000K (EASC_Y5FX50_____.IES)



Grid Distance in Units of Mounting Height at 40' Initial Footcandle Values at Grade

— Vertical plane through horizontal angle of maximum candlepower at 65°
— Vertical plane through horizontal angle of 57°

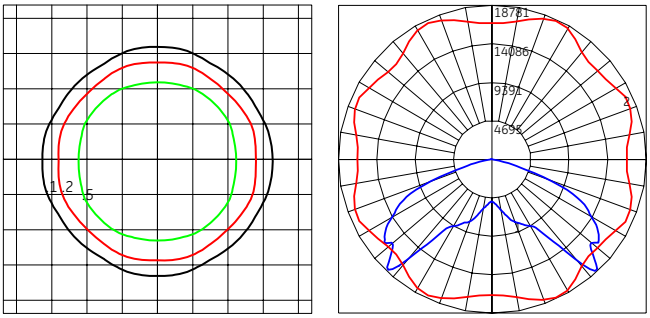
EASC Type III – Asymmetric 100° Wide Auto (YA)
60,000 Lumens, 5000K (EASC_YAFX50_____.IES)



Grid Distance in Units of Mounting Height at 40' Initial Footcandle Values at Grade

— Vertical plane through horizontal angle of maximum candlepower at 0°
— Vertical plane through horizontal angle of 35°

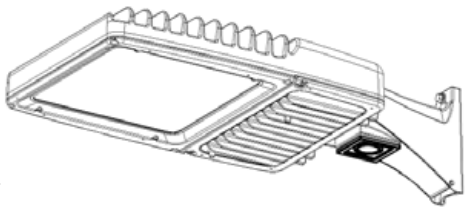
EASC Type VS – Symmetric Short (Z5)
56,500 Lumens, 5000K (EASC_Z5FX50_____.IES)



Grid Distance in Units of Mounting Height at 40' Initial Footcandle Values at Grade

— Vertical plane through horizontal angle of maximum candlepower at 65°
— Vertical plane through horizontal angle of 44°

H-Motion Sensing Option:

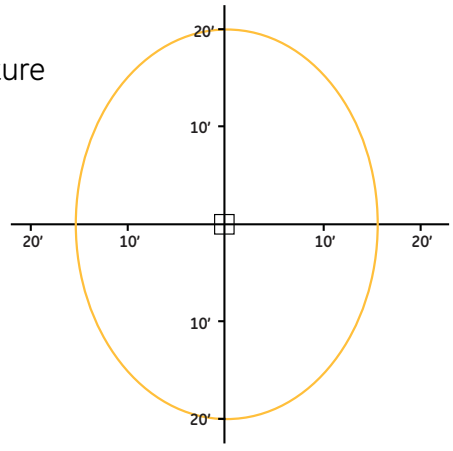


- Intended for high mounting applications, between 15-30ft (4.57-9.14m). For mounting heights exceeding 30ft, pole mounted sensors are recommended.
- Provides a coverage area radius for walking motion of 15-20ft (4.57-6.10m).
- Provides 270° of coverage (~90° is blocked by the pole).
- Comes standard with 50% dimmed light output with no occupancy, and full power at occupancy.
- Comes standard with photocell function. Note: It is not necessary to also purchase PE receptacle or control.
- Comes standard with a 5 minute occupancy time delay and a 5 minute ramp-down to the 50% dimmed level.
- Must order with decorative mounting arm options "A" or "B".
- Fixture power increase of 1W expected with sensor use.

Note: Standard options may be reprogrammed in the field. Reprogramming instructions included in product shipment.

Sensor Pattern:

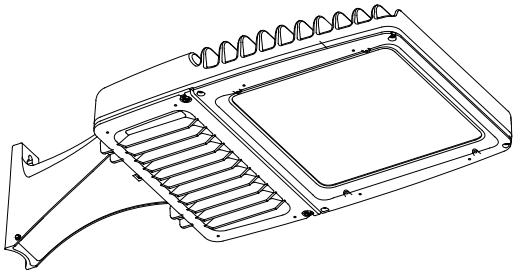
Sensing Pattern Area Fixture
Up to 30 ft.

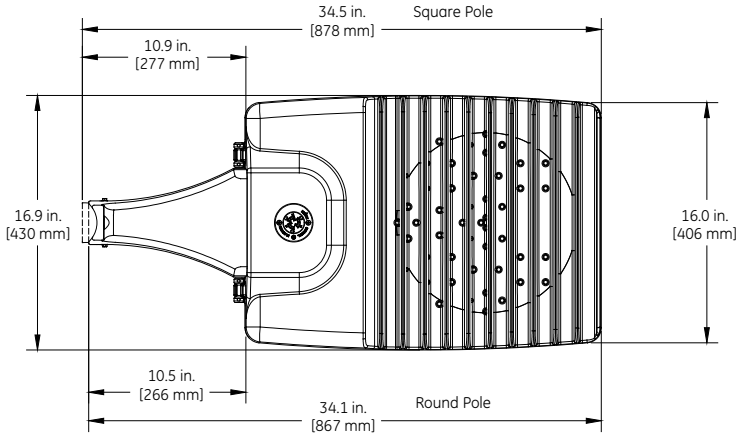


Product Dimensions

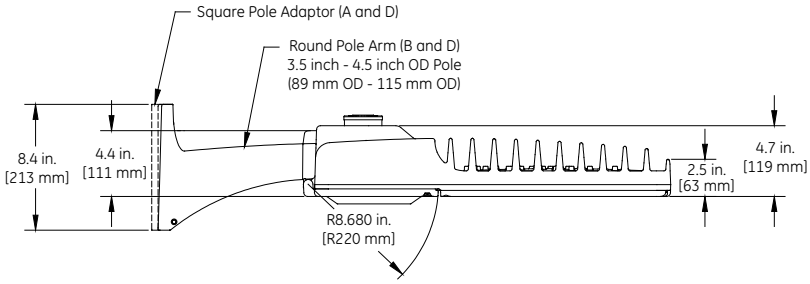
(Option A) 10” Arm for Square Pole Mount
(Option B) 10” Arm for Round Pole Mount
(Option D) 10” Arm for Square Pole Mount or Round Pole Mount

Option D includes all mounting hardware in Option A and Option B

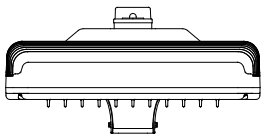




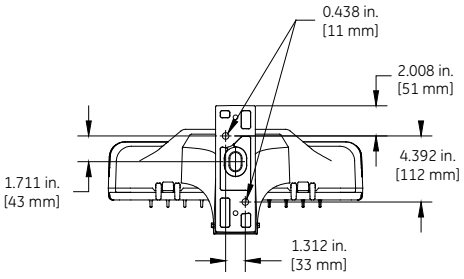
TOP VIEW



SIDE VIEW

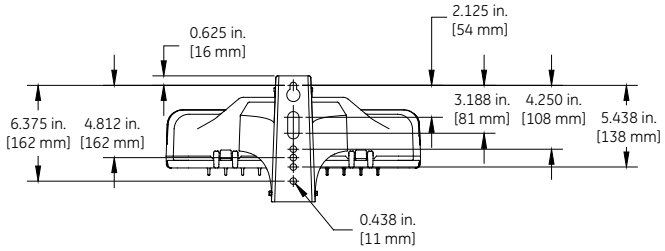


FRONT VIEW



BACK VIEW

Option A and D Square Pole
3.5 inch - 4.5 inch Pole
(89 mm - 115 mm)



BACK VIEW

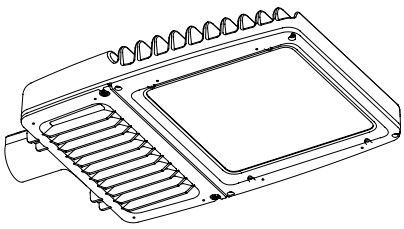
Option B and D Round Pole
3.5 inch - 4.5 inch OD Pole
(89 mm OD - 115 mm OD)

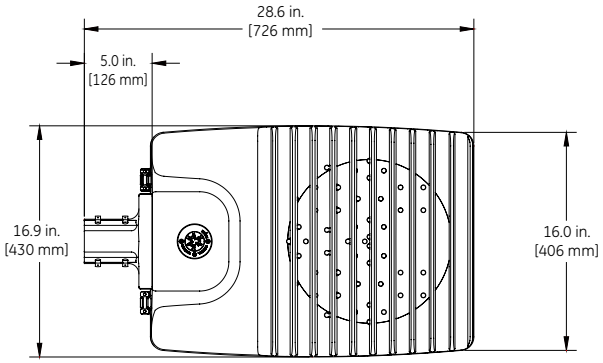
DATA

- Approximate net weight: 43-47 lbs (19.50 - 21.32 kgs)
  Contact manufacturer for specific configuration weight.
- Effective Projected Area (EPA) with 10” Mounting Arm: 0.97 sq ft max (0.09 sq m)

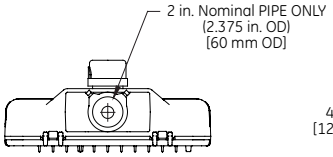
Product Dimensions

(Option C) Slipfitter Arm Mount

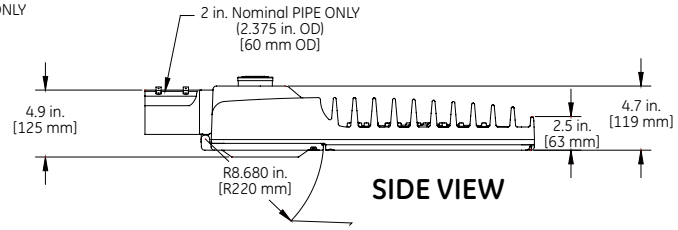




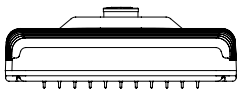
TOP VIEW



BACK VIEW



SIDE VIEW

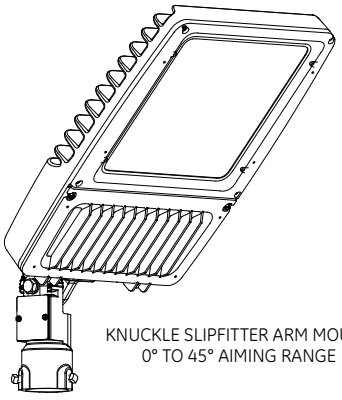


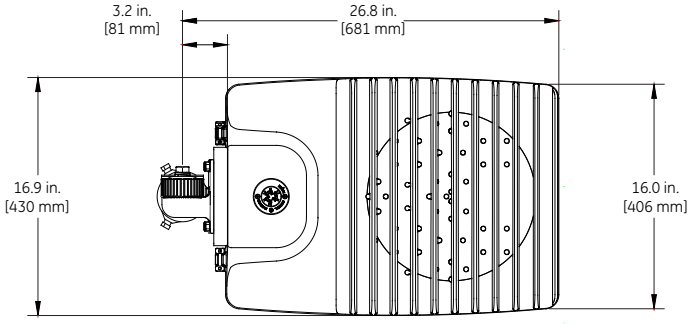
FRONT VIEW

DATA

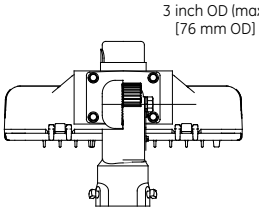
- Approximate net weight: 41-45 lbs (18.60 - 20.41 kgs)
  Contact manufacturer for specific configuration weight.
- Effective Projected Area (EPA) with Slipfitter: 0.47 sq ft max (0.04 sq m)

(Option S) Knuckle Arm Mount

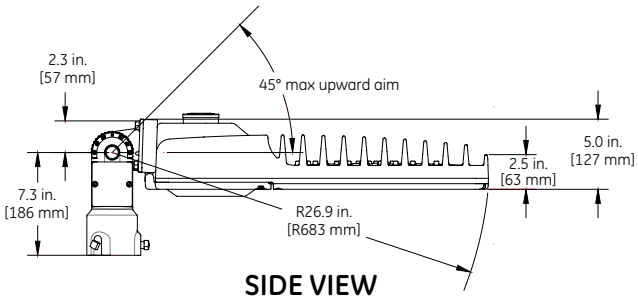




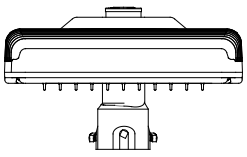
TOP VIEW



BACK VIEW



SIDE VIEW



FRONT VIEW

DATA

- Approximate net weight: 41-45 lbs (18.60 - 20.41 kgs)
  Contact manufacturer for specific configuration weight.
- Effective Projected Area (EPA) with fixture mounted at 45° upward: 1.97 sq ft max

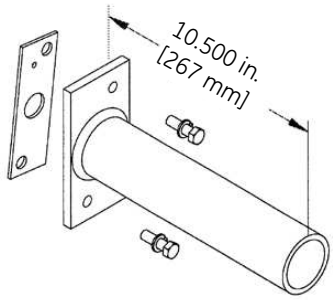
Mounting Information

Mounting Arms for Slipfitter

Order separately with Mounting Option C (External Slipfitter)

SQUARE POLE MOUNTING ARM

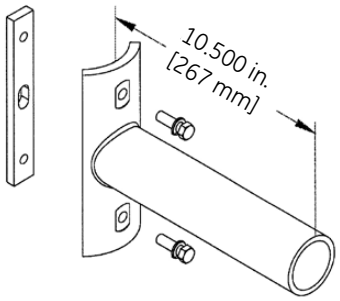
3.5 TO 4.5-inch (89 to 114mm) SQUARE
(WILL ALLOW 4 FIXTURES PER POLE @ 90 DEGREES.)



ORDER SEPARATELY FROM FIXTURE AS CATALOG NUMBER
SPA-EAMT10BLCK "Black"
SPA-EAMT10DKBZ "Dark Bronze"

ROUND POLE MOUNTING ARM

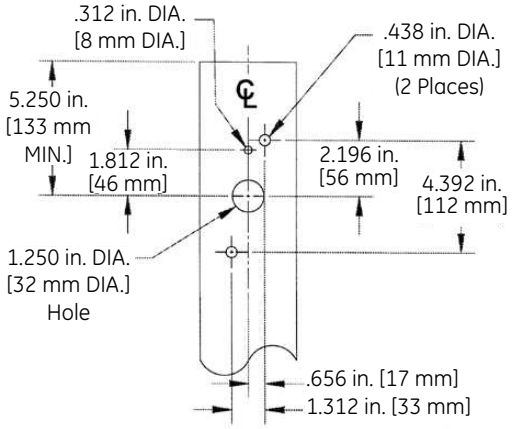
3.5 TO 4.5-inch (89 to 114mm) OD
(WILL ALLOW 4 FIXTURES PER POLE @ 90 DEGREES.)



ORDER SEPARATELY FROM FIXTURE AS CATALOG NUMBER
RPA-EAMT10BLCK "Black"
RPA-EAMT10DKBZ "Dark Bronze"

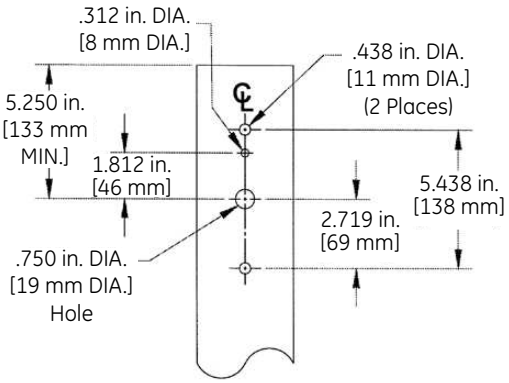
Drilling Templates for Slipfitter Arms & Arm Mount

SQUARE POLE MOUNTING



ROUND POLE MOUNTING

3.5 TO 4.5-inch (89 to 114mm) OD
round pole mounting arm



Wall Mounting Bracket Adapter Plate

ORDER SEPARATELY FROM FIXTURE AS CATALOG NUMBER
WMB-EAMT06
NOTE: For Wall Mounting, order luminaire with mounting arm: C = EXT Slip-fitter 2" Pipe (2.378 in. OD) supplied with leads.

**Other mounting patterns are available for retrofit installations.
Contact manufacturing for other available mounting patterns.**

current powered by GE

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APPENDIX G-1 – DRAINAGE SITE PLAN

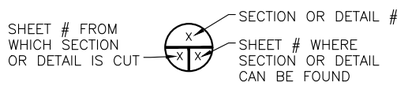
GENERAL NOTES:

1. ALL DIMENSIONS AND UNITS IN MILLIMETERS UNLESS NOTED OTHERWISE (UNO). ALL ELEVATIONS IN METERS.
2. DESIGN CRITERIA
   A. AASHTO LRFD FOR GRAVITY AND LATERAL LOADING
   B. AISC 360–05 FOR STEEL DESIGN
   C. NDS 2005 FOR TIMBER DESIGN
   D. ASCE 7–05 FOR LOAD COMBINATIONS
   E. ACI 318–11 FOR CONCRETE DESIGN
3. DESIGN LOADS
   A. LIVE LOAD: 2.4 KPA [50 PSF]
   B. DEAD LOAD: 5 KN/M³ [32 PCF]
   C. WIND: 160 KM/HR [100 MPH]
   D. FLUID: 6 M/S [20 FT/S]
   E. LR 1300
   F. VOLVO A40D ARTICULATED HAULER: 68,270 KG [150 K]
   G. CAT 385CL HYDRAULIC EXCAVATOR: 84,980 KG [187 K]
   H. ROCK ANCHOR PRETENSION: 360 KN [80 K]
   I. ROCK ANCHOR TEST LOAD: 430 KN [96 K]
   J. GUARDRAIL: 44.5 KN [10 K]
   K. SOIL: 20 KN/M³ [125 PCF]
   L. ALLOWANCE FOR ICE LOADING NOT INCLUDED IN THE DESIGN, AND SHALL BE ADDRESSED THROUGH THE OPERATIONS, MAINTENANCE, & SURVEILLANCE PLAN
11. INSPECTIONS OF THE ACCESS TRESTLE SYSTEM SHALL BE UNDERTAKEN BY A QUALIFIED ENGINEER ON AN ANNUAL BASIS TO ASSURE SAFE ONGOING PERFORMANCE. INSPECTIONS SHALL INCLUDE SIGNOFF ON THE DESIGN AND RECOMMENDATIONS FOR ANY REQUIRED MAINTENANCE OR MODIFICATIONS.
12. AN OPERATION MAINTENANCE AND INSPECTION PLAN SHALL BE PREPARED FOR THE TRESTLE. THE PLAN SHALL BE APPROVED BY A QUALIFIED DESIGN ENGINEER PRIOR TO FIRST USE, AND BE RE–APPROVED ANNUALLY FOR THE LIFE OF THE TRESTLE.
13. DESIGN PREPARED EXCLUSIVELY FOR THE MEANS AND METHODS OF PETER KIEWIT INFRASTRUCTURE CO. USE OF THE TRESTLE BY ANY OTHER CONTRACTOR, FIRM, OR ENTITY SHALL REQUIRE INDEPENDENT ENGINEERING CALCULATIONS AND COMPLETE DESIGN RESPONSIBILITY SHALL BE ASSUMED BY THE ASSOCIATED CONTRACTOR, FIRM, OR HIS DESIGNATED ENGINEER. USE OF THE TRESTLE BY OTHERS SHALL CONSTITUTE AGREEMENT BY THE USER TO DEFEND, INDEMNIFY AND HOLD HARMLESS PETER KIEWIT INFRASTRUCTURE CO., KIEWIT ENGINEERING CO., KINDER MORGAN CANADA, TRANS MOUNTAIN EXPANSION PROJECT, AND THEIR RESPECTIVE EMPLOYEES FROM ANY AND ALL CLAIMS, LIABILITY, CAUSES OF ACTION OR LITIGATION ARISING OUT OF SUCH USE.
14. CONTRACTOR TO VERIFY ALL DIMENSIONS AND SITE CONDITIONS PRIOR TO COMMENCING WORK. ANY ERRORS, OMISSIONS, OR UNUSUAL CONDITIONS ARE TO BE REPORTED TO THE ENGINEER IMMEDIATELY.

ABBREVIATIONS:

ABV	ABOVE
ABUT	ABUTMENT
ACI	AMERICAN CONCRETE INSTITUTE
ADJ	ADJUST / ADJUSTABLE
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALT	ALTERNATE
ALUM	ALUMINUM
ANCH	ANCHOR / ANCHORAGE
APPROX	APPROXIMATELY
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASTM	AMERICAN SOCIETY OF TESTING MATERIALS
@	AT
AVG	AVERAGE
BEL	BELOW
BLDG	BUILDING
BLK	BLOCK
BM	BEAM
BOC	BOTTOM OF CONCRETE
BOT	BOTTOM
BP	BASE PLATE / BEGIN POINT
BRG	BEARING
BRKT	BRACKET
BTWN	BETWEEN
BVCE	BEGIN VERTICAL CURVE ELEVATION
BVCS	BEGIN VERTICAL CURVE STATION
BW	BOTH WAYS
CC	CENTER TO CENTER
CAIS	CAISSON
CAP	CAPACITY
CIP	CAST–IN–PLACE
℄	CENTERLINE
CF	CUBIC FEET
CHAN	CHANNEL
CJ	CONTROL JOINT
CLG	CEILING
CLR	CLEAR
COG	CENTER OF GRAVITY
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACTOR
CTR	CENTER
CU FT	CUBIC FOOT
M³	CUBIC METER
CU YD	CUBIC YARD
Ø	DIAMETER
DBL	DOUBLE
DEG	DEGREE
DEMO	DEMOLISH / DEMOLITION
DIAG	DIAGONAL
DN	DOWN
DWG	DRAWING
E	EAST / EASTING
EA	EACH
EF	EACH FACE
EL	ELEVATION
EMBED	EMBEDMENT
ENGR	ENGINEER
EP	END POINT
EQ	EQUAL
EQUIP	EQUIPMENT
EVCS	END VERTICAL CURVE STATION
EVCE	END VERTICAL CURVE ELEVATION
EW	EACH WAY
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
FF	FINISH FLOOR
FLG	FLANGE
FND	FOUNDATION
F/S	FAR SIDE
FT	FOOT / FEET
FTG	FOOTING
FY	YIELD STRESS
GA	GAUGE
GALV	GALVANIZED
GOVT	GOVERNMENT
GRND	GROUND
H	HIGH / HEIGHT
HCL	HORIZONTAL CONTROL LINE
HORIZ	HORIZONTAL
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
INV	INVERT
INT	INTERIOR
JST	JOIST
JT	JOINT
K	KIP = 1000 LBS
KG	KILOGRAM
KPA	KILOPASCAL
KSI	KIPS PER SQUARE INCH
L	ANGLE
±	PLUS OR MINUS
LBS	POUNDS
LG	LONG
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
M	METER
MAX	MAXIMUM
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MM	MILLIMETER
MPA	MEGAPASCAL
MPH	MILES PER HOUR
MSE	MECHANICALLY STABILIZED EARTH
N	NORTH / NORTHING
NIC	NOT IN CONTRACT
NO.	NUMBER
N/S	NEAR SIDE
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OPNG	OPENING
OPP	OPPOSITE HAND
ℙ	PLATE
PC	PRECAST
PERP	PERPENDICULAR
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
PLF	POUNDS PER LINEAR FOOT
PLWD	PLYWOOD
PNL	PANEL
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
QTY	QUANTITY
R	RADIUS
RD	ROAD
REINF	REINFORCEMENT
REQD	REQUIRED
REV	REVISION
ROW	RIGHT OF WAY
RR	RAILROAD
S	SOUTH
SCH	SCHEDULE
SF	SQUARE FOOT
SIM	SIMILAR
SPA	SPACING
SPECS	SPECIFICATION
STA	STATION
STD	STANDARD
STIFF	STIFFENER
STL	STEEL
ST	STREET
SWL	SAFE WORKING LOAD
SYM	SYMMETRICAL
T&B	TOP AND BOTTOM
TBD	TO BE DETERMINED
TEMP	TEMPORARY
THK	THICK / THICKNESS
TOC	TOP OF CONCRETE
TOF	TOP OF FOOTING
TOP	TOP OF PIER
TOS	TOP OF STEEL
TOW	TOP OF WALL
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
UG	UNDERGROUND
VERT	VERTICAL
VPI	VERTICAL POINT OF INTERSECTION
W	WEST
W/	WITH
W/O	WITHOUT
WD	WOOD
WP	WORK POINT

DETAIL INDICATOR



SHEET INDEX

NO.	DRAWING SUBJECT
1	GENERAL NOTES
2	EXISTING SITE PLAN
3	PROPOSED SITE PLAN
4	GRADING PLAN
5	SECTIONS – TYPICAL DETAILS

PRELIMINARY

REV.	DATE	BY	DESCRIPTION	CHK'D

KLTP
KIEWIT LEDCOR TMEP PARTNERSHIP
10333 SOUTHPORT RD.
SW CALGARY, AB T3W3X6

DESIGNED BY C.W.S.
DRAWN BY C.W.S.
CHECKED BY X.X.X.

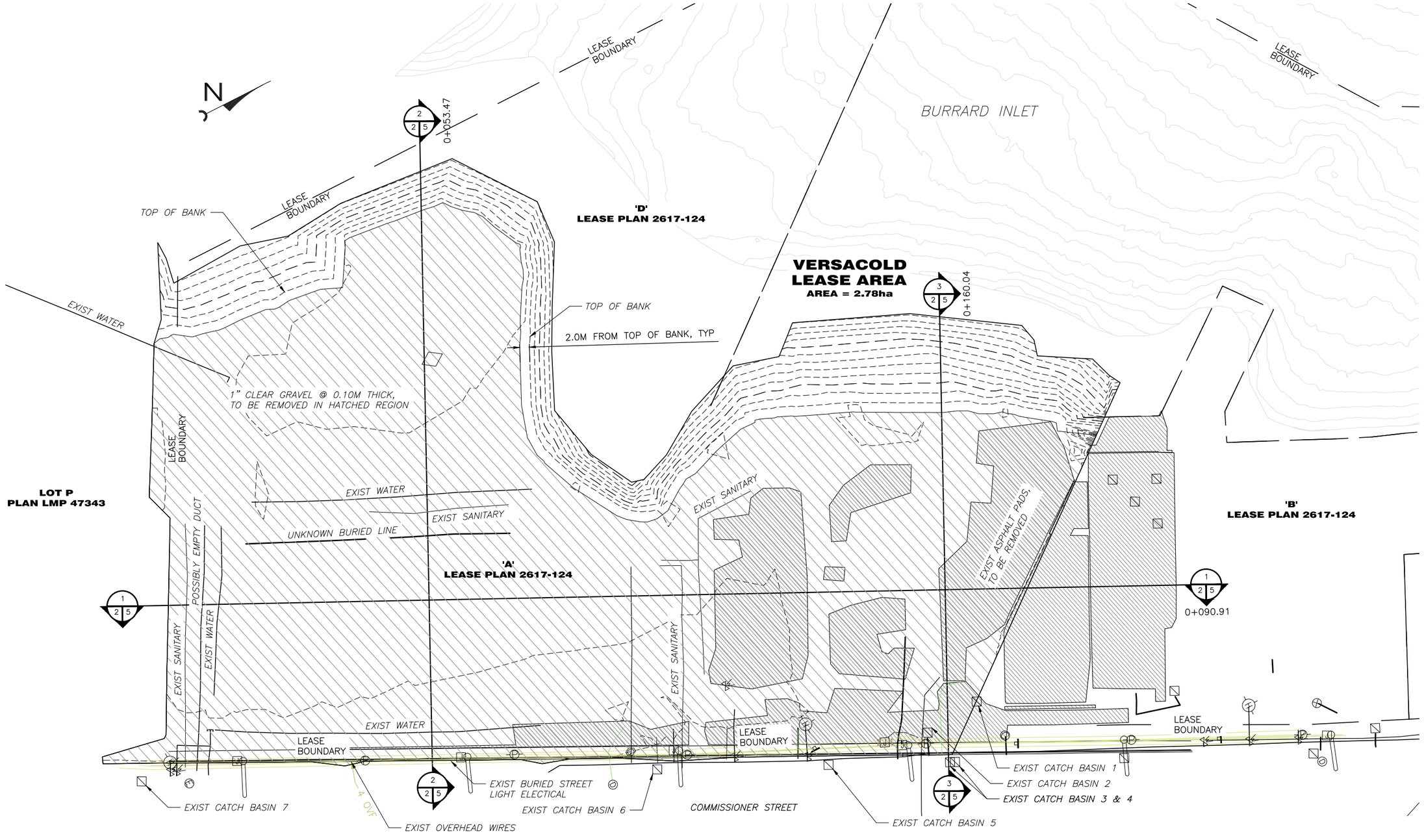
SCALE AS NOTED
IF SHEET IS LESS THAN 22"x34" IT IS A REDUCED PRINT SCALE REDUCED ACCORDINGLY
DATE (MM-DD-YY) 08–24–17

Think! SAFETY BEGINS WITH ME

PROJECT TITLE: TMEP LOWER MAINLAND EPC
PROJECT LOCATION: VANCOUVER, BC
PROJECT TASK: VERSACOLD SITE PLAN
DRAWING SUBJECT: GENERAL NOTES

JOB NO. 16–101
TASK NO. TMEP VERSACOLD SITE
SHEET NO. 1 OF 5

DRAWING FILE: TMEP_VERSACOLD_SITE.DWG, 8/25/2017 4:25 PM



PLAN - EXIST SITE

SCALE: SCALE: 1:400

PRELIMINARY

REV.	DATE	BY	DESCRIPTION	CHK'D

KLTP
KIEWIT LEDCOR TMEP PARTNERSHIP
10333 SOUTHPORT RD.
SW CALGARY, AB T3W3X6

DESIGNED BY: C.W.S.
DRAWN BY: C.W.S.
CHECKED BY: X.X.X.

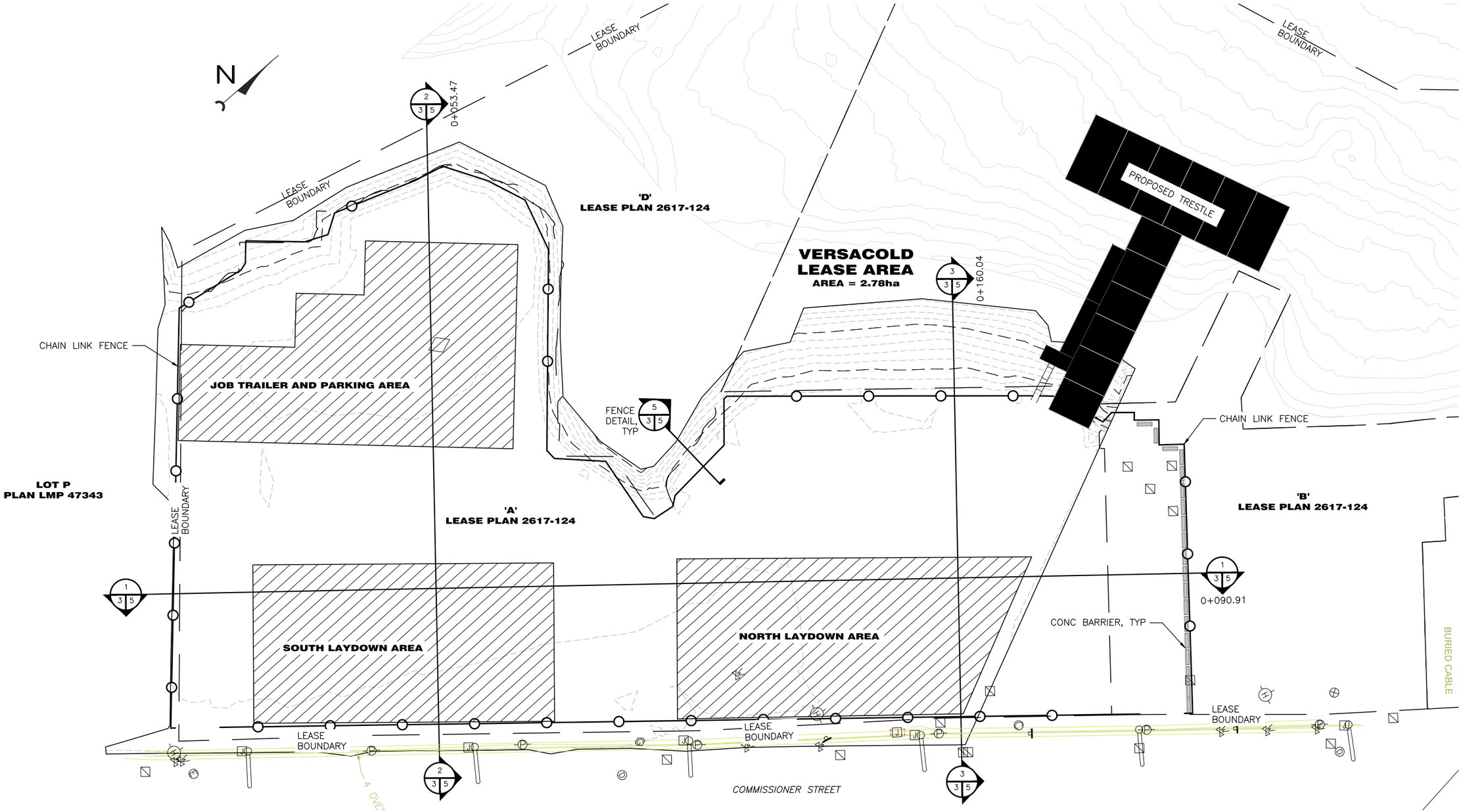
SCALE: AS NOTED
IF SHEET IS LESS THAN 22"x34" IT IS A REDUCED PRINT SCALE REDUCED ACCORDINGLY
DATE (MM-DD-YY): 08-24-17

SAFETY BEGINS WITH ME

PROJECT TITLE: TMEP LOWER MAINLAND EPC
PROJECT LOCATION: VANCOUVER, BC
PROJECT TASK: VERSACOLD SITE PLAN
DRAWING SUBJECT: EXISTING SITE PLAN / REMOVAL

JOB NO.: 16-101
TASK NO.: TMEP VERSACOLD SITE
SHEET NO.: 2 OF 5

DRAWING FILE: TMEP VERSACOLD SITE.DWG 8/25/2017 4:25 PM



PLAN - PROPOSED SITE

SCALE: 1:400

PRELIMINARY

REV.	DATE	BY	DESCRIPTION	CHK'D

KLTP
KIEWIT LEDCOR TMEP PARTNERSHIP
10333 SOUTHPORT RD.
SW CALGARY, AB T3W3X6

DESIGNED BY	C.W.S.
DRAWN BY	C.W.S.
CHECKED BY	X.X.X.
SCALE	AS NOTED

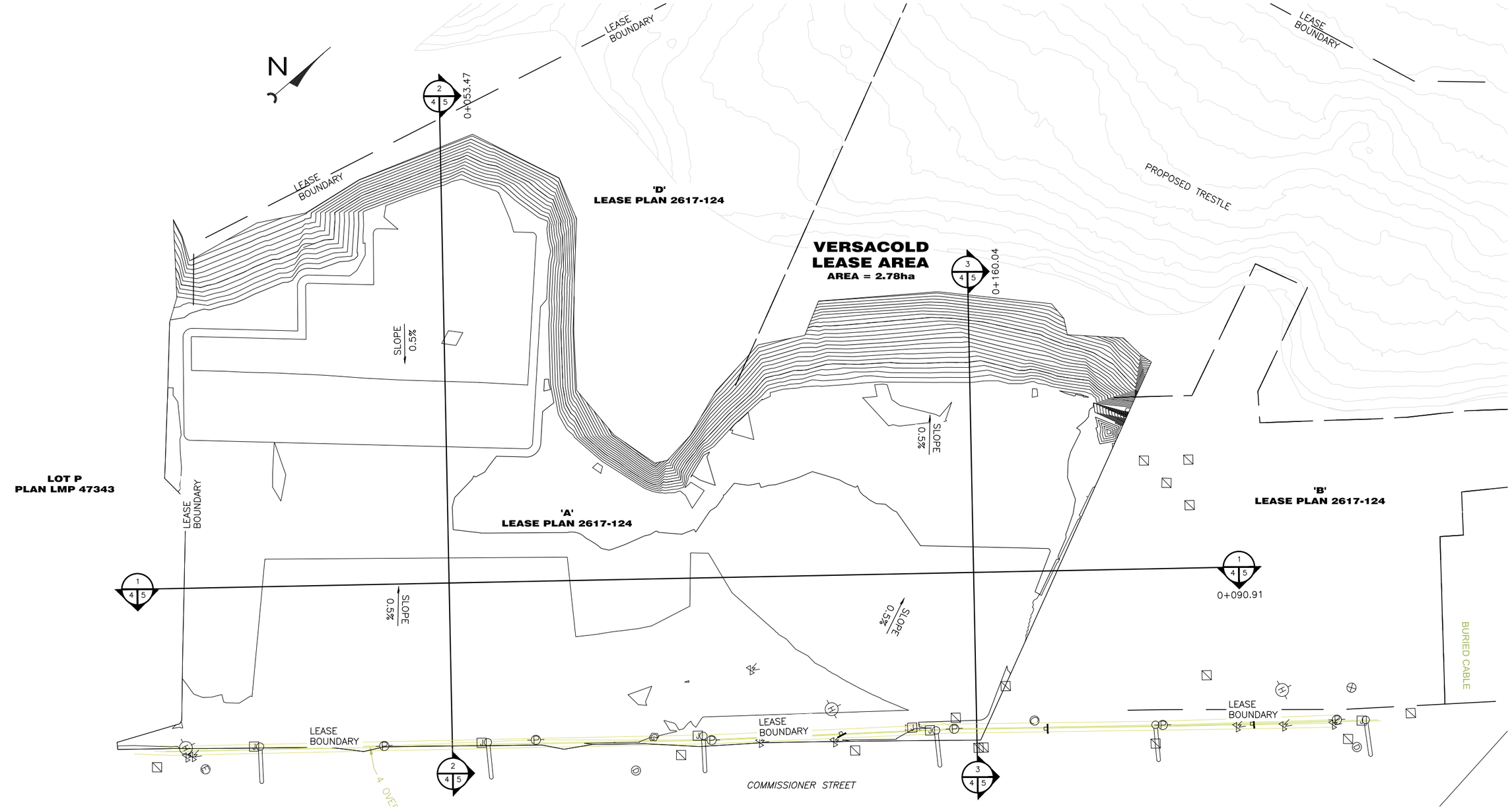
IF SHEET IS LESS THAN 22"x34" IT IS A REDUCED PRINT SCALE REDUCED ACCORDINGLY

DATE (MM-DD-YY) 08-24-17

SAFETY BEGINS WITH ME

PROJECT TITLE	TMEP LOWER MAINLAND EPC
PROJECT LOCATION	VANCOUVER, BC
JOB NO.	16-101
PROJECT TASK	VERSACOLD SITE PLAN
TASK NO.	TMEP-MEER-SAC-SITE-VERSACOLD SITE SITE
DRAWING SUBJECT	PROPOSED SITE PLAN
SHEET NO.	3 OF 5

DRAWING FILE: TMEP_VERSACOLD_SITE.DWG 8/25/2017 4:25 PM



GRADING PLAN

SCALE: 1:400

PRELIMINARY

DRAWING FILE: TMEP_VERSACOLD_SITE.DWG, 8/25/2017 4:25 PM

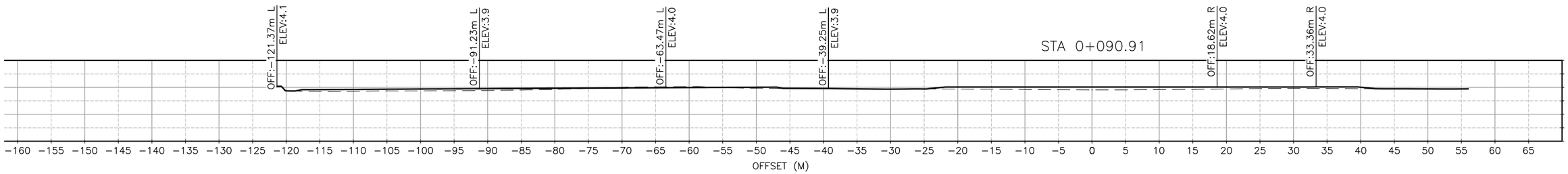
REV.	DATE	BY	DESCRIPTION	CHK'D

KLTP
KIEWIT LEDCOR TMEP PARTNERSHIP
10333 SOUTHPORT RD.
SW CALGARY, AB T3W3X6

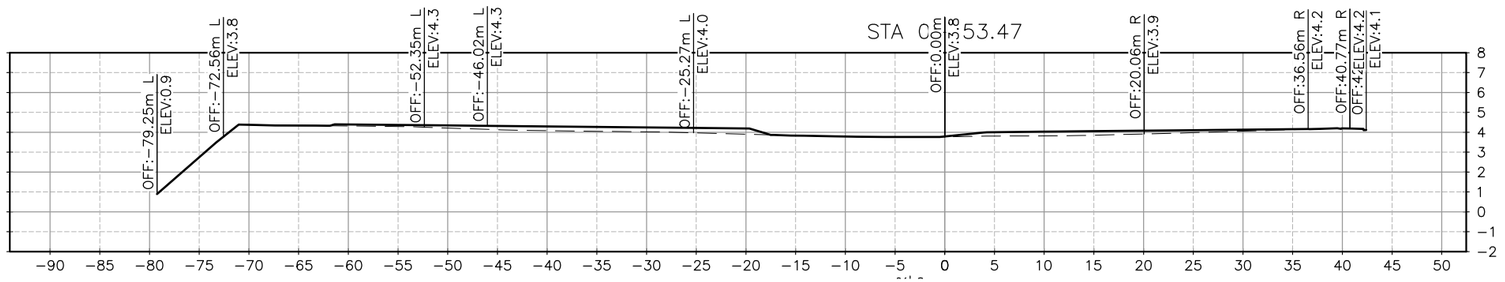
DESIGNED BY	C.W.S.
DRAWN BY	C.W.S.
CHECKED BY	X.X.X.
SCALE	AS NOTED
	IF SHEET IS LESS THAN 22"x34" IT IS A REDUCED PRINT SCALE REDUCED ACCORDINGLY
DATE (MM-DD-YY)	08-24-17

Think! SAFETY BEGINS WITH ME

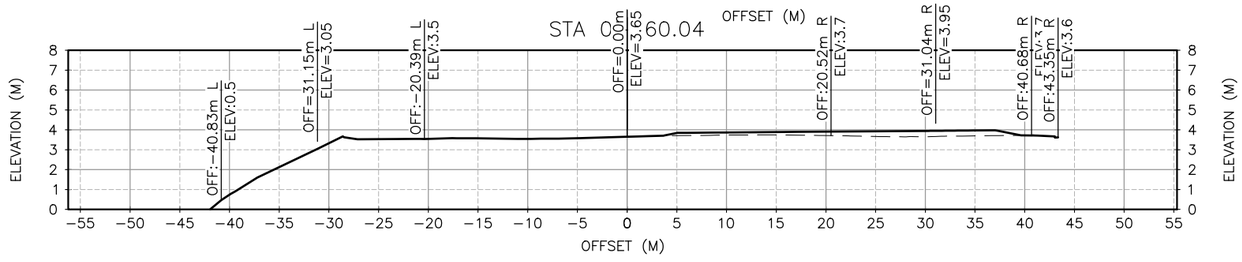
PROJECT TITLE	TMEP LOWER MAINLAND EPC
PROJECT LOCATION	VANCOUVER, BC
JOB NO.	16-101
PROJECT TASK	VERSACOLD SITE PLAN
TASK NO.	TMEP VERSACOLD SITE
DRAWING SUBJECT	GRADING PLAN
SHEET NO.	4 OF 5



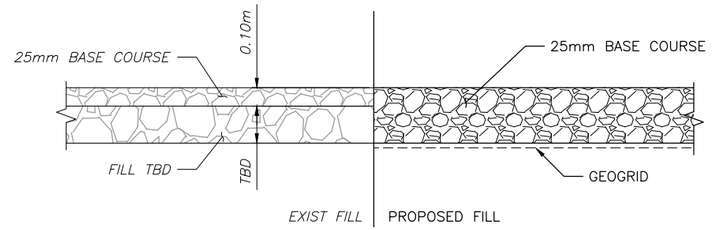
1/5 **SECTION**
SCALE: SCALE: 1:300



2/5 **SECTION**
SCALE: SCALE: 1:300

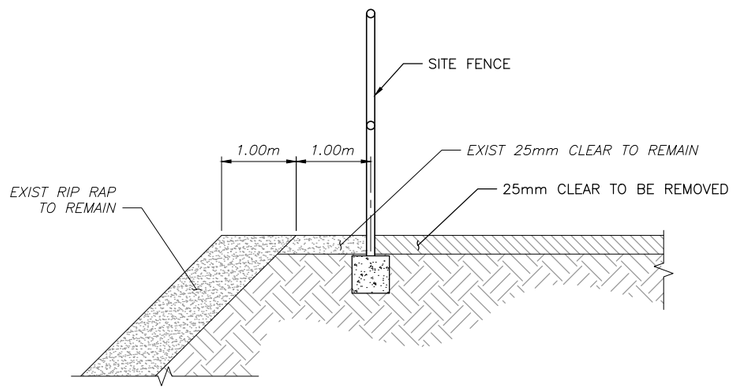


3/5 **SECTION**
SCALE: SCALE: 1:300



CRANE PAD DETAIL - PRELIM
SCALE: NTS

NOTE: DESIGN IS PRELIMINARY,
PENDING GEOTECHNICAL ANALYSIS



5/5 **TYP FENCE DETAIL - PRELIM**
SCALE: NTS

NOTE: DESIGN IS PRELIMINARY,
PENDING GEOTECHNICAL ANALYSIS

PRELIMINARY

REV.	DATE	BY	DESCRIPTION	CHK'D

KLTP
KIEWIT LEDCOR TMEP PARTNERSHIP
10333 SOUTHPORT RD.
SW CALGARY, AB T3W3X6

DESIGNED BY C.W.S.
DRAWN BY C.W.S.
CHECKED BY X.X.X.

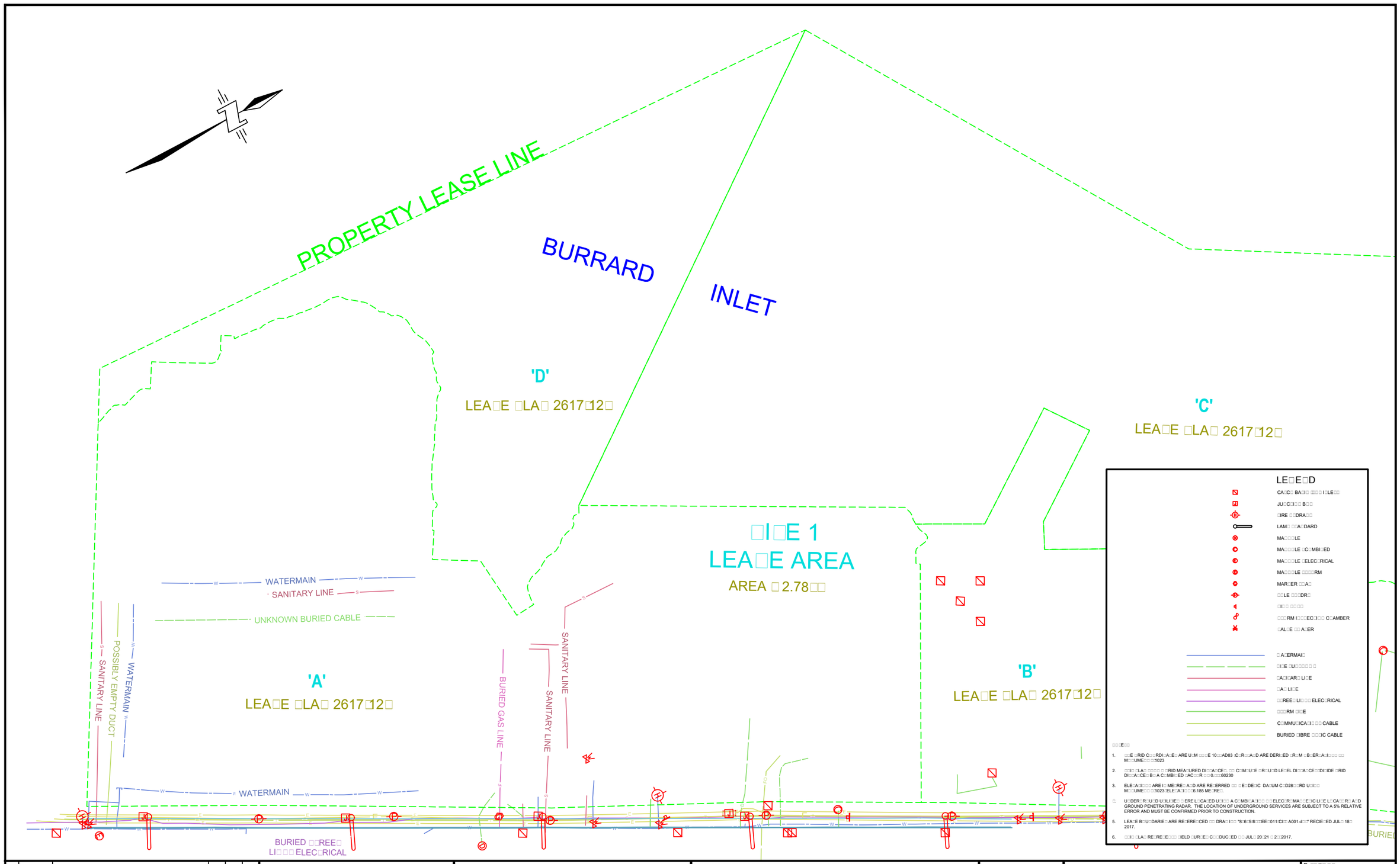
SCALE AS NOTED
IF SHEET IS LESS THAN 22"x34" IT IS A REDUCED PRINT SCALE REDUCED ACCORDINGLY
DATE (MM-DD-YY) 08-24-17

Think SAFETY BEGINS WITH ME

PROJECT TITLE: TMEP LOWER MAINLAND EPC
PROJECT LOCATION: VANCOUVER, BC
JOB NO. 16-101
PROJECT TASK: VERSACOLD SITE PLAN
TASK NO. TMEP-MEP-VERSACOLD SITE SITE
DRAWING SUBJECT: SECTIONS, TYPICAL DETAILS
SHEET NO. 5 OF 5

DRAWING FILE: TMEP VERSACOLD SITE.DWG 8/25/2017 4:25 PM

APPENDIX G-2 – EXISTING UTILITIES



Rev	Date	Description	Surv	Drawn	App'd
0	2017#07-28	INITIAL SUBMISSION	RS	CW	JW

KLTP

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THIS DOCUMENT SHALL NOT BE USED TO DEFINE PROPERTY LINES OR PROPERTY CORNERS.

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APPENDIX G-3 – PROPOSED UTILITIES

PROPERTY LEASE LINE

BURRARD INLET

'D'

LEA□E □LA□ 2617□12□

'C'

LEA□E □LA□ 2617□12□

□I□E 1

LEA□E AREA

AREA □2.78□□

Office Trailers and Storage Connexes

WATERMAIN

SANITARY LINE

UNKNOWN BURIED CABLE

POSSIBLY EMPTY DUCT

SANITARY LINE

WATERMAIN

BURIED GAS LINE

SANITARY LINE

BC Hydro Power Source

WATERMAIN

BURIED □□REE□ LI□□□ ELEC□RICAL

'A'

LEA□E □LA□ 2617□12□

'B'

LEA□E □LA□ 2617□12□

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CA□C□ BA□□ □□□ □LE□□

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4. U□DER□R□U□D U□I□I□E□ □ ERE L□CA□ED U□I□□ A C□MBI□A□□□ □□ ELEC□R□MA□□E□IC LI□E L□CA□□R□A□D GROUND PENETRATING RADAR. THE LOCATION OF UNDERGROUND SERVICES ARE SUBJECT TO A 5% RELATIVE ERROR AND MUST BE CONFIRMED PRIOR TO CONSTRUCTION.
5. LEA□E B□U□DARIE□ ARE RE□ERE□CED □□ DRA□ I□□□ *B□6□5□6□□EE□011□CI□□ A001.d□□ RECIE□ED JUL□ 18□ 2017.
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Rev	Date	Description	Surv	Drawn	App'd
0	2017#07-28	INITIAL SUBMISSION	RS	CW	JW

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APPENDIX G-4 – EMERGENCY VEHICLE ACCESS ROUTE

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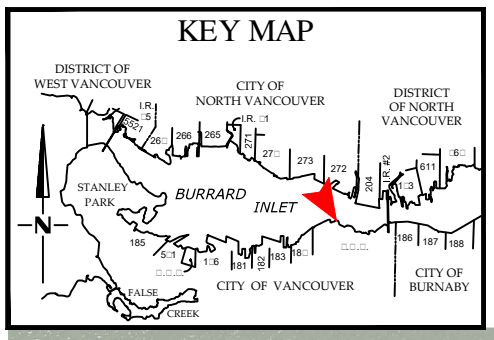
KEY MAP



LEGEND

- Chain Link Fence
- Vehicle Gate
- Permit B Limits
- Concrete Barrier
- Mooring Batter Piles
- High Water Mark
- Property Lease Line
- VFPA Boundary
- CP Lot Property
- Residential Property
- Parking Stalls
- Various Office Trailers
- Proposed Lighting
- Existing Fire Hydrant

BURRARD INLET

Original Wharf

Waterlot 1

VAN070-10014F-001
VFPA PLAN 2014-043

VAN071-04221F-014
VFPA PLAN 90-13

VAN070-10014F-001
VFPA PLAN 2014-043

R14.65 m

8.0m width

LAYDOWN

EMERGENCY ACCESS

R15.95 m

Site 1

LAYDOWN

R15.10 m

VAN070-04385F-001

VAN070-10014F-001

COMMISSIONER STREET

VAN071-04222F-001
VFPA PLAN 90-39

S2004-117, S2004-073, S2004-074 & 2004-129

VAN032-930-001
VFPA PLAN 17-075 s1-6

EMERGENCY ACCESS

C
PLAN 10050
009-510-389

STRATA LOTS 1 TO 48
STRATA PLAN LMS1720

REM. A
PLAN 10050
009-510-231

A
PLAN

5

REM. 4
PLAN 178
015-693-961

REM. 3
PLAN 178
015-693-945

4
PLAN 16141
007-537-417

STRATA LOTS 1 TO 175
STRATA PLAN BCS4213

WALL STREET

1

178

REM. 1A
PLAN 178
015-693-783

ETON STREET

REM. 6
PLAN 178
015-693-830

REM. 5
PLAN 178
015-693-821

REM. 4
PLAN 178
015-693-813

REM. 2
PLAN 178
015-693-775

6

PLAN

B
PLAN 13296

10

TEMPLETON DRIVE

KLTP

2115 COMMISSIONER STREET
EMERGENCY ACCESS AND FIRE ROUTE
SITE PLAN

D□ □ DA□E	RE□I□I□□	DRA□ I□□
08/15/2017	0	2115CommissionerSt-FR-001

Versacold Site Plan

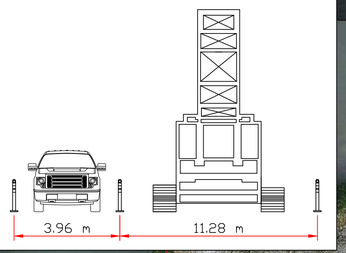
Laydown Buildings
-12' x 60' Office Trailer x 1
-10' x 40' Lunch Room x 1
-12' x 40' Washcar x 1
-10' x 20' Mechanics Storage x 1
-10' x 24' Security Shack x 1
-10' x 20' First-Aid Office x 1
-10' x 20' Environmental Connex x 1
-10' x 20' Storage Connex x 4
-10' x 20' Heated Connex x 1
-10' x 10' Oxy-Acetylene Storage and Flammable Cabinet Storage x 1

Temp. Mobile Small Boat Dock
-10' x 40' Flexi Barge x 2
- 4' x 102' Access Ramp x 1

Temporary Main Trestle
-144' x 48' Trestle
-3' Diameter Vertical Piles x 28
-2' Diameter Battered Piles x 8
-3' Diameter Mooring Piles x 5

LEGEND
- Chain Link Fence
- Vehicle Gate
- Concrete Barrier
- Mooring Batter Piles
- Parking Stalls
- Various Office Trailers
- LED Area Light Fixture
- Delinators
- Fire Hydrant

Access Road/Crane Path



BURRARD INLET

New Fire Hydrant
-TBD

Temporary Access Trestle
-144' x 32' Trestle
-3' Diameter Vertical Piles x 10
-2' Diameter Battered Piles x 3

Site 2 Parking Lot
-62 Parking Stalls

Trestle Swing Gate
-90' Foldable Gate

LAYDOWN 61m x 20m

LAYDOWN 45m x 18m

LAYDOWN 55m x 32m

LAYDOWN 110m x 19m

1 2 3 4 5 6 7 8 9 10

236 m

137 m

60 m

Pedestrian Walkway
-Access between Site 1 and 2

58 m

6 m

58 m

6 m

23 m

188 m

Bus Staging
-"BUS PARKING ONLY" Sign

COMMISSIONER STREET

VAN070-10014F-001

0 12.5 25