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RAIL AND SITE IMPROVEMENTS PHASE 1

FOR

VERTEX RAIL CAR CORPORATION
WILMINGTON, NORTH CAROLINA 28412

JUNE 2015

WKD NO. 20150016.00.WL

NOTICE REQUIRED

ALL EXISTING UNDERGROUND UTILITIES SHALL BE PHYSICALLY LOCATED BY CONTRACTOR PRIOR TO THE BEGINNING OF ANY CONSTRUCTION IN THE VICINITY OF SAID UTILITIES.

CONTRACTORS SHALL NOTIFY OPERATORS WHO MAINTAIN UNDERGROUND UTILITY LINES IN THE AREA OF PROPOSED EXCAVATION AT LEAST TWO WORKING DAYS, BUT NOT MORE THAN TEN WORKING DAYS PRIOR TO ANY EXCAVATION OR DEMOLITION.

CONTACT "CAROLINA ONE CALL" AT 1-800-632-4949

CONTACT THESE UTILITIES:

CAPE FEAR PUBLIC UTILITIES AUTHORITY (WATER/SEWER) PH: 1-910-799-6064	NEW HANOVER COUNTY (INSPECTIONS) PH: 1-910-798-7175
PROGRESS ENERGY PH: 1-800-452-2777	AT&T ATTN: STEVE AVAIL PH: 1-910-341-0741
PIEDMONT NATURAL GAS EMERGENCY PH: 1-800-356-2593 LOCAL PH: 1-910-392-2931	TIME WARNER CABLE PH: 1-910-763-4638
EMERGENCY DIAL 911	POLICE - FIRE - RESCUE

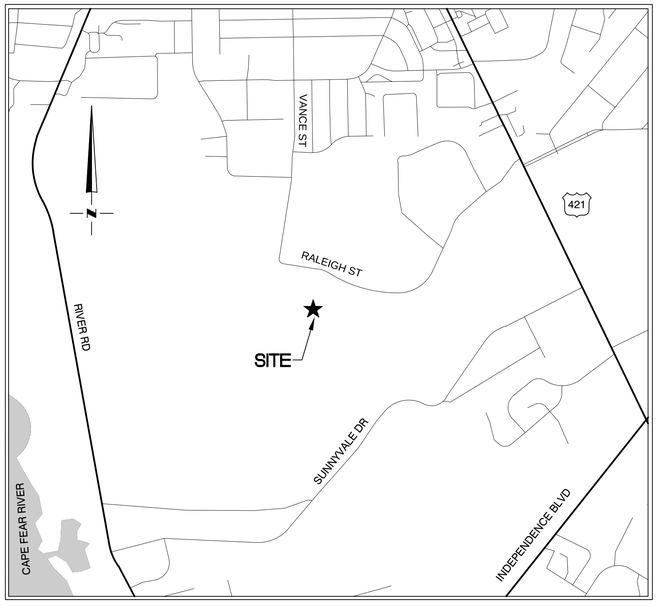
NOTICE TO CONTRACTOR

1) THE CONTRACTOR SHALL FIELD VERIFY THE ONSITE T.B.M. w/ EXISTING ELEVATIONS. THE CONTRACTOR SHALL IMMEDIATELY CONTACT W.K. DICKSON & CO., INC. @ 910.762.4200 IF ANY DISCREPANCIES ARE FOUND IN ELEVATIONS SHOWN.

2) PRIOR TO CONSTRUCTION, DIGGING, OR EXCAVATION THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES (PUBLIC OR PRIVATE) THAT MAY EXIST AND CROSS THROUGH THE AREA(S) OF CONSTRUCTION, WHETHER INDICATED ON THE PLANS OR NOT. CALL "811" A MINIMUM OF 72 HOURS PRIOR TO DIGGING OR EXCAVATING. REPAIRS TO ANY UTILITY DAMAGED RESULTING FROM CONSTRUCTION ACTIVITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

811 Know what's below. Call before you dig

DESIGNER:
DENISE L. FREUND, PE
(910) 762.4200
DFREUND@WKDICKSON.COM



LOCATION MAP
1" = 1000'

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C5.2	RAIL GEOMETRY LAYOUT PLAN
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NC LICENSE NO.F-0374

PROFESSIONAL SEAL

REVISION RECORD

NO.	DESCRIPTION	DATE	BY

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

PROJECT NAME:
RAIL AND SITE IMPROVEMENTS PHASE 1
FOR
VERTEX RAIL CAR CORPORATION
202 RALEIGH STREET
WILMINGTON, NORTH CAROLINA 28412

DRAWING TITLE:
COVER SHEET

PROJ. MGR.:	DLF
DESIGN BY:	DLF
DRAWN BY:	TJC
PROJ. DATE:	JUNE 2015

DRAWING NUMBER:
C1.1

WKD PROJ. NO.:
20150016.00.WL

R:\2015\Projects\Vertex Rail Technologies\20150016.00.WL - Vertex Wilmington Plant Site Development\CAD\Plan Set\20150001_C_SHT_COVER.dwg, Plotted by: TJC on 6/30/2015 11:10:51 AM

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GENERAL NOTES

1. PROPERTY BOUNDARY FOR AREA TAKEN FROM DEEDS AND MAPS OF RECORD.
2. TOPOGRAPHIC SURVEY BASED ON AERIAL SURVEY ENTITLED "SURVEY AND MAP REPORT FOR A TOPOGRAPHIC SURVEY OF VERTEX SITE, WILMINGTON, NC" COMPLETED BY CAROLINA RESOURCE MAPPING, INC. AND DATED MARCH 4, 2015.
3. FLOOD ZONE X (MINIMAL FLOOD RISK) ACCORDING TO FEMA PANEL MAPS 3720312500J AND 372311500K.
4. ELEVATIONS BASED ON VERTICAL DATUM NAVD 88. HORIZONTAL DATUM - NAD83/2011.
5. LOCATION OF UNDERGROUND UTILITIES IS BASED UPON LOCATION OF VISIBLE ABOVE GROUND IMPROVEMENTS, RECORD DRAWINGS AND SUE SURVEY COMPLETED BY ESP ASSOCIATES, P.A. ON APRIL 15, 2015.
6. THE SOIL TYPES PER SOIL SURVEY OF NEW HANOVER COUNTY, NORTH CAROLINA BY THE US DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCE CONSERVATION SERVICE ARE Be (BAYMEADE FINE SAND), Kr (KUREB SAND), Mu (MURVILLE FINE SAND), AND UR (URBAN LAND).
7. THERE ARE NO CONSERVATION RESOURCES OR ASSOCIATED SETBACKS ON THE SITE.
8. THE CONTRACTOR IS REQUIRED TO OBTAIN ANY/ALL PERMITS REQUIRED FOR CONSTRUCTION OF THESE PLANS.
9. ALL WORK IS TO BE IN ACCORDANCE WITH THE CITY OF WILMINGTON, NEW HANOVER COUNTY AND THE STATE OF NORTH CAROLINA.
10. THE CONTRACTOR IS TO ESTABLISH AND CHECK ALL HORIZONTAL AND VERTICAL CONTROLS TO BE USED WITH THE PROJECT. IN ADDITION, THE CONTRACTOR IS TO COMPUTE THE LAYOUT OF THE ENTIRE SITE PLAN IN ADVANCE OF BEGINNING ANY WORK ASSOCIATED WITH THE SUBJECT PLANS. CONTRACTOR SHALL EMPLOY A PROFESSIONAL SURVEYOR TO PERFORM SITE IMPROVEMENT STAKEOUT(S).
11. ANYTIME WORK IS PERFORMED OFF-SITE OR WITHIN AN EXISTING EASEMENT, THE CONTRACTOR IS TO NOTIFY THE HOLDER OF SAID EASEMENT AS TO THE NATURE OF PROPOSED WORK, AND TO FOLLOW ANY GUIDELINES OR STANDARDS WHICH ARE ASSOCIATED WITH OR REFERENCED IN THE RECORDED EASEMENT.
12. ALL WORK BY THE CONTRACTOR SHALL BE WARRANTED BY THE CONTRACTOR FOR A PERIOD OF ONE YEAR AFTER THE OWNER ACCEPTS THE WORK.
13. REASONABLE CARE HAS BEEN EXERCISED IN SHOWING THE LOCATION OF EXISTING UTILITIES ON THE PLANS. THE EXACT LOCATION OF ALL EXISTING UTILITIES IS NOT KNOWN IN ALL CASES. THE CONTRACTOR SHALL EXPLORE THE AREA AHEAD OF DITCHING OPERATIONS BY OBSERVATIONS, ELECTRONIC DEVICES, HAND DIGGING AND BY PERSONAL CONTACT WITH THE UTILITY COMPANIES. IN ORDER TO LOCATE EXISTING UTILITIES IN ADVANCE OF TRENCHING OPERATIONS SO AS TO ELIMINATE OR MINIMIZE DAMAGE TO EXISTING UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS RESULTING FROM ANY DAMAGE TO THE EXISTING UTILITY LINES INCLUDING LOSS OF UTILITY REVENUES. CONTRACTOR SHALL ARRANGE FOR TEMPORARY SUPPORT OF EXISTING UTILITIES, SUCH AS POLES, CONDUITS, FIBER OPTIC CABLES, TELEPHONE CABLES, WATER LINES, ETC...
14. CONTRACTOR SHALL COMPLY WITH THE LATEST REVISIONS AND INTERPRETATIONS OF THE DEPARTMENT OF LABOR SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION PROMULGATED UNDER THE OCCUPATIONAL SAFETY AND HEALTH ACT.
15. CONTRACTOR SHALL PLAN AND CONSTRUCT WORK SO AS TO CAUSE MINIMUM INCONVENIENCE TO THE OWNER AND THE PUBLIC. THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN AT ALL TIMES DURING THE PROGRESS OR TEMPORARY SUSPENSION OF WORK, SUITABLE BARRIERS, FENCES, SIGNS OR OTHER ADEQUATE PROTECTION, INCLUDING FLAGMEN AND WATCHMEN AS NECESSARY TO INSURE THE SAFETY OF THE PUBLIC AS WELL AS THOSE ENGAGED IN THE CONSTRUCTION WORK. CONSTRUCTION SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF "CONSTRUCTION AND MAINTENANCE OPERATIONS SUPPLEMENT TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" BY THE DOT.
16. CONTRACTOR SHALL CALL THE NORTH CAROLINA ONE-CALL CENTER AT 1 (800) 632-4949 AND ALLOW THE CENTER TO LOCATE EXISTING UTILITIES BEFORE DIGGING.
17. THERE ARE NO WETLAND IMPACTS ASSOCIATED WITH THIS PROJECT.

DEMOLITION NOTES

1. PRIOR TO ANY CLEARING, GRADING OR CONSTRUCTION ACTIVITY, TREE PROTECTION FENCING SHALL BE INSTALLED AROUND PROTECTED TREES OR GROVES OF TREES. NO CONSTRUCTION WORKERS, TOOLS, MATERIALS, OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION FENCING.
2. ANY TREES AND/OR AREAS DESIGNATED TO BE PROTECTED MUST BE PROPERLY BARRICADED WITH FENCING AND PROTECTED THROUGHOUT CONSTRUCTION TO INSURE THAT NO CLEARING, GRADING OR STAGING OF MATERIALS WILL OCCUR IN THOSE AREAS.
3. NO EQUIPMENT IS ALLOWED ON SITE UNTIL ALL TREE PROTECTION FENCING AND SILT FENCING IS INSTALLED AND APPROVED. PROTECTIVE FENCING IS TO BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT, AND CONTRACTORS SHALL RECEIVE ADEQUATE INSTRUCTION ON TREE PROTECTION METHODS.
4. ALL MATERIAL CLEARED OR DEMOLISHED BY THE CONTRACTOR IN ORDER TO CONSTRUCT THE WORK SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROPERLY DISPOSED OF OFF-SITE.
5. CONTRACTOR TO COORDINATE WITH THE OWNER TO PROPERLY MAINTAIN OR RELOCATE EXISTING SERVICE CONNECTIONS WHEN NECESSARY.
6. CONTRACTOR IS TO WALK THE SITE AND BECOME FAMILIAR WITH THE SCOPE OF DEMOLITION REQUIRED. ALL DEMOLITION WORK REQUIRED TO CONSTRUCT NEW SITE IMPROVEMENTS WILL BE PERFORMED BY THE CONTRACTOR AND WILL BE UNCLASSIFIED EXCAVATION.
7. DEMOLITION SHALL INCLUDE BUT IS NOT LIMITED TO THE EXCAVATION, HAULING AND OFFSITE DISPOSAL OF CONCRETE FOUNDATIONS, CONCRETE DITCHES, SLABS, AND STEPS; ABANDONED UTILITIES, BUILDINGS, RAIL, PAVEMENTS AND ALL MATERIALS CLEARED AND STRIPPED TO THE EXTENT NECESSARY AS DIRECTED BY THE SOILS ENGINEER FOR THE INSTALLATION OF THE NEW IMPROVEMENTS AND WITHIN THE LIMITS OF CLEARING AND GRADING AND AS SHOWN ON THESE PLANS.
8. THE CONTRACTOR SHALL PROTECT ALL ADJACENT PROPERTY, STRUCTURES AND UTILITIES ON THE PROPERTY NOT TO BE DEMOLISHED. DAMAGE TO PROPERTIES OF OTHERS DUE TO THE CONTRACTOR'S ACTIVITIES SHALL BE REPLACED IN KIND BY THE CONTRACTOR AT NO COST TO OWNER.
9. ELECTRIC, TELEPHONE, SANITARY SEWER, WATER AND STORM SEWER UTILITIES THAT SERVICE OFF-SITE PROPERTIES SHALL BE MAINTAINED DURING THE CONSTRUCTION PROCESS BY THE CONTRACTOR.
10. THE CONTRACTOR SHALL PRODUCE A PHOTOGRAPHIC RECORD (DIGITAL) OF DEVELOPMENT COMMENCING WITH A RECORD OF THE SITE AS IT APPEARS BEFORE DEMOLITION IS BEGUN. AFTERWARDS, A PHOTOGRAPHIC RECORD SHALL BE MAINTAINED WEEKLY DURING CONSTRUCTION AND ENDING WITH A PHOTOGRAPHIC RECORD OF THE DEVELOPMENT AS IT APPEARS AFTER DEMOLITION. THIS RECORD SHALL BE DELIVERED TO THE OWNER.
11. EXISTING CURB AND GUTTER, LIGHTS, SIDEWALK, UTILITIES, ETC. NOT INTENDED FOR DEMOLITION SHALL BE MAINTAINED, PROTECTED AND UNDISTURBED DURING DEMOLITION.
12. CONTRACTOR SHALL COORDINATE RELOCATION OF ALL EXISTING OVERHEAD AND UNDERGROUND UTILITIES INCLUDING CABLE, GAS, TELEPHONE AND ELECTRIC AND ANY OTHER UTILITIES THROUGH THE SITE WITH THE RESPECTIVE COMPANIES.
13. PROVIDE SMOOTH SAW CUT OF EXISTING PAVEMENTS, CURBS AND GUTTERS AND SIDEWALKS TO BE DEMOLISHED.
14. ALL DEMOLITION WORK SHALL BE DONE IN STRICT ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS AS WELL AS OSHA REGULATIONS.

SITE NOTES

1. TRAFFIC CONTROL DEVICES INCLUDING SIGNS AND PAVEMENT MARKINGS IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES) STANDARDS.
2. ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS-OF-WAY AND FOR DRIVEWAYS ARE TO BE THERMOPLASTIC AND MEET CITY AND/OR NCDOT STANDARDS.
3. CALL TRAFFIC ENGINEERING AT 910-341-7888 FORTY-EIGHT (48) HOURS PRIOR TO ANY EXCAVATION IN THE RIGHT-OF-WAY.
4. TRAFFIC ENGINEERING MUST APPROVE OF PAVEMENT MARKING PRIOR TO ACTUAL STRIPING.
5. ALL PARKING STALL MARKINGS AND LANE ARROWS WITHIN THE PARKING AREAS SHALL BE WHITE.
6. ALL TRAFFIC CONTROL SIGNS AND MARKINGS OFF THE RIGHT-OF-WAY ARE TO BE MAINTAINED BY THE PROPERTY OWNER.
7. STOP SIGNS AND STREET SIGNS TO REMAIN IN PLACE DURING CONSTRUCTION.
8. TACTILE WARNING MATS WILL BE INSTALLED ON ALL WHEELCHAIR RAMPS.
9. ANY BROKEN OR MISSING SIDEWALK PANELS, DRIVEWAY PANELS AND CURBING IN THE CITY OF WILMINGTON RIGHT OF WAY WILL BE REPLACED.
10. CONTACT KAREN DIXON AT 910-341-7888 TO DISCUSS STREET LIGHTING OPTIONS.
11. CONTRACTOR SHALL MAINTAIN ALL-WEATHER ACCESS FOR EMERGENCY VEHICLES AT ALL TIMES DURING CONSTRUCTION.
12. NO OBSTRUCTIONS ARE PERMITTED IN THE SPACE BETWEEN THIRTY (30) INCHES AND TEN (10) FEET ABOVE THE GROUND WITHIN THE TRIANGULAR SITE DISTANCE.
13. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH PERMITS ISSUED AND ALL FEDERAL, STATE AND LOCAL CODES.
14. ANY DISCREPANCY IN THIS PLAN AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED TO THE OWNER PRIOR TO START OF CONSTRUCTION. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL SETBACKS, EASEMENTS AND DIMENSIONS SHOWN HEREON BEFORE BEGINNING CONSTRUCTION.
15. THE GENERAL CONTRACTOR SHALL CONTACT ALL OWNERS OF EASEMENTS, UTILITIES AND R.O.W.'S PUBLIC OR PRIVATE, PRIOR TO WORKING IN THESE AREAS.
16. CONTRACTOR SHALL MAINTAIN THE SITE IN A MANNER SO THAT WORKMEN AND PUBLIC SHALL BE PROTECTED FROM INJURY, AND ADJOINING PROPERTY PROTECTED FROM DAMAGE.
17. ACCESS TO UTILITIES, FIRE HYDRANTS, STREET LIGHTING, ETC., SHALL REMAIN UNDISTURBED, UNLESS COORDINATED WITH THE RESPECTIVE UTILITY.
18. DO NOT SCALE THESE DRAWINGS AS THEY ARE REPRODUCTIONS AND SUBJECT TO DISTORTION.
19. THE GENERAL CONTRACTOR SHALL REMOVE ALL DEBRIS FROM THE SITE UPON COMPLETION OF THE PROJECT AND AT LEAST ONCE A WEEK DURING CONSTRUCTION.
20. THE GENERAL CONTRACTOR SHALL KEEP THE AREA OUTSIDE THE "CONSTRUCTION LIMITS" BROOM CLEAN AT ALL TIMES.
21. ALL UTILITIES TO SERVICE BUILDING SHALL BE UNDERGROUND ON SITE.
22. ALL STREET SURFACES, DRIVEWAYS, CULVERTS, CURB AND GUTTERS, ROADSIDE DRAINAGE DITCHES AND OTHER STRUCTURES THAT ARE DISTURBED OR DAMAGED IN ANY MANNER AS A RESULT OF CONSTRUCTION SHALL BE REPLACED OR REPAIRED IN ACCORDANCE WITH THE SPECIFICATIONS.
23. CONTRACTOR SHALL MAINTAIN AN "AS-BUILT" SET OF DRAWINGS TO RECORD THE EXACT LOCATION OF ALL PIPING PRIOR TO CONCEALMENT. DRAWINGS SHALL BE GIVEN TO THE OWNER UPON COMPLETION OF THE PROJECT WITH A COPY OF THE TRANSMITTAL LETTER TO THE ENGINEER.
24. IF DEPARTURES FROM THE SPECIFICATIONS OR DRAWINGS ARE DEEMED NECESSARY BY THE CONTRACTOR, DETAILS OF SUCH DEPARTURES AND REASONS THEREOF SHALL BE GIVEN TO THE OWNER FOR REVIEW, NO DEPARTURES FROM THE CONTRACT DOCUMENTS SHALL BE MADE WITHOUT THE PERMISSION OF THE OWNER.
25. ALL DIMENSIONS AND RADII ARE TO OUTSIDE FACE OF BUILDING OR TO EDGE OF THE PAVEMENT UNLESS OTHERWISE NOTED.
26. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL INSPECTIONS, CERTIFICATIONS, EQUIPMENT, ETC., THAT MAY BE REQUIRED.
27. THE ENGINEER AND/OR OWNER DISCLAIM ANY ROLE IN THE CONSTRUCTION MEANS AND METHODS ASSOCIATED WITH THE PROJECT AS SET FORTH IN THESE PLANS.
28. ALL WEATHER ACCESS ROAD MUST BE MAINTAINED AROUND CONSTRUCTION SITE AT ALL TIMES.

UTILITY NOTES

1. A UTILITY CUT PERMIT IS REQUIRED FOR EACH OPEN CUT OF A CITY STREET. CONTACT 341-5888 FOR PERMIT DETAILS.
2. ALL UTILITIES TO SERVICE BUILDING SHALL BE INSTALLED UNDERGROUND, EXCEPT WHERE SUCH PLACEMENT IS PROHIBITED OR DEEMED IMPRACTICAL BY THE UTILITY PROVIDER. UNDERGROUND TERMINAL FACILITIES FOR STREET LIGHTING ALONG ALL PUBLIC STREETS ABUTTING THE SUBJECT SITE SHALL BE INSTALLED BY THE DEVELOPER.
3. WATER AND SEWER SERVICE SHALL MEET CAPE FEAR PUBLIC UTILITY AUTHORITY (CFPUA) DETAILS AND SPECIFICATIONS.
4. PROJECT SHALL COMPLY WITH CFPUA CROSS CONNECTION CONTROL REQUIREMENTS. WATER METER(S) CANNOT BE RELEASED UNTIL ALL REQUIREMENTS ARE MET AND THE STATE HAS GIVEN THEIR FINAL APPROVAL. CALL 910-343-3910 FOR INFORMATION.
5. IF THE CONTRACTOR DESIRES CFPUA WATER FOR CONSTRUCTION, HE SHALL APPLY IN ADVANCE FOR THIS SERVICE AND MUST PROVIDE A REDUCED PRESSURE ZONE (RPZ) BACKFLOW PREVENTION DEVICE ON THE DEVELOPER'S SIDE OF THE WATER METER BOX.
6. ANY IRRIGATION SYSTEM SUPPLIED BY CFPUA WATER SHALL COMPLY WITH THE CFPUA CROSS CONNECTION CONTROL REGULATIONS. CALL 910-343-3910 FOR INFORMATION.
7. ANY IRRIGATION SYSTEM SHALL BE EQUIPPED WITH A RAIN AND FREEZER SENSOR.
8. ANY BACKFLOW PREVENTION DEVICES REQUIRED BY THE CFPUA WILL NEED TO BE ON THE LIST OF APPROVED DEVICES BY USCFCCCHR OR ASSE.
9. CONTRACTOR TO FIELD VERIFY EXISTING WATER AND SEWER SERVICE LOCATIONS, SIZES AND MATERIALS PRIOR TO CONSTRUCTION. ENGINEER TO BE NOTIFIED OF ANY CONFLICTS.
10. UNDERGROUND FIRE LINE(S) MUST BE PERMITTED AND INSPECTED BY THE WILMINGTON FIRE DEPARTMENT FROM THE PUBLIC RIGHT-OF-WAY TO THE BUILDING. CONTACT THE WILMINGTON FIRE DEPARTMENT DIVISION OF FIRE AND LIFE SAFETY AT 910-341-0696.
11. THE GENERAL CONTRACTOR SHALL CONFIRM ALL NEW UTILITY TAP LOCATIONS WITH THE UTILITY OWNERS.
12. UNDERGROUND CONDUITS SHALL BE PLACED IN GRASS OR LANDSCAPE AREAS WHENEVER POSSIBLE. THE LOCATION OF THE CONDUIT SHALL BE DETERMINED BY THE CONTRACTOR IN THE FIELD. PVC SCH. 40 SLEEVES SHALL BE INSTALLED FOR ALL CONDUIT CROSSINGS UNDER PAVED AREAS.
13. ALL WATER LINES SHALL HAVE FINAL COVER DEPTH OF 3'-0".
14. ALL SEWER LINES SHALL HAVE A FINAL COVER DEPTH OF 3'-0".
15. CONTRACTORS SHALL NOTIFY OPERATORS WHO MAINTAIN UNDERGROUND UTILITY LINES IN THE AREA OF PROPOSED CONSTRUCTION AT LEAST TWO WORKING DAYS, BUT NOT MORE THAN TEN WORKING DAYS PRIOR TO ANY EXCAVATION OR DEMOLITION.
16. CONTRACTOR TO LOCATE EXISTING UNDERGROUND UTILITIES AT WATERLINE CROSSINGS AND USE FITTINGS AND BENDS AS NECESSARY TO AVOID CONFLICTS.
17. CONTRACTOR TO SUPPORT AND/OR BRACE EXISTING UNDERGROUND UTILITIES AS NECESSARY TO CONSTRUCT PROPOSED UTILITY CONNECTIONS.
18. NEW HYDRANTS MUST BE BROUGHT INTO SERVICE PRIOR TO COMBUSTIBLE MATERIALS BEING DELIVERED TO THE JOB SITE.

DRAINAGE NOTES

1. ALL STORM SEWERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF WILMINGTON & NCDOT SPECIFICATIONS AS SPECIFIED ON THE DRAWINGS AND IN THE PROJECT SPECIFICATIONS.
2. BEDDING FOR ALL STORM SEWER PIPES SHALL BE AS SPECIFIED IN THE DETAILS AND SPECIFICATIONS UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
3. ALL STORM SEWER PIPES SHOWN AS RCP ON THE PLANS SHALL BE REINFORCED CONCRETE PIPE CONFORMING TO ASTM C-76, UNLESS INDICATED OTHERWISE ON PLANS.

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

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NC LICENSE NO.F-0374

PROFESSIONAL SEAL

REVISION RECORD

NO.	DATE	DESCRIPTION	BY

PROJECT NAME:
RAIL AND SITE IMPROVEMENTS PHASE 1
FOR
VERTEX RAIL CAR CORPORATION
202 RALEIGH STREET
WILMINGTON, NORTH CAROLINA 28412

DRAWING TITLE:
GENERAL NOTES

PROJ. MGR.:	DLF
DESIGN BY:	DLF
DRAWN BY:	TJC
PROJ. DATE:	JUNE 2015

DRAWING NUMBER:
C1.2
WKD PROJ. NO.:
20150016.00.WL

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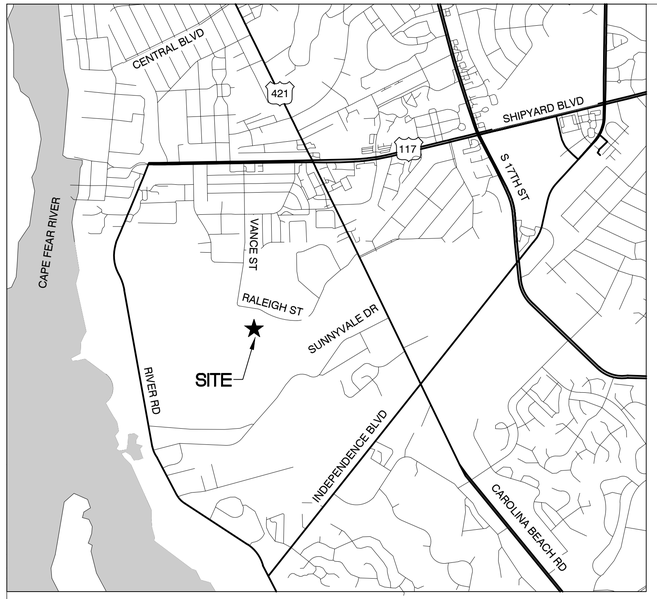
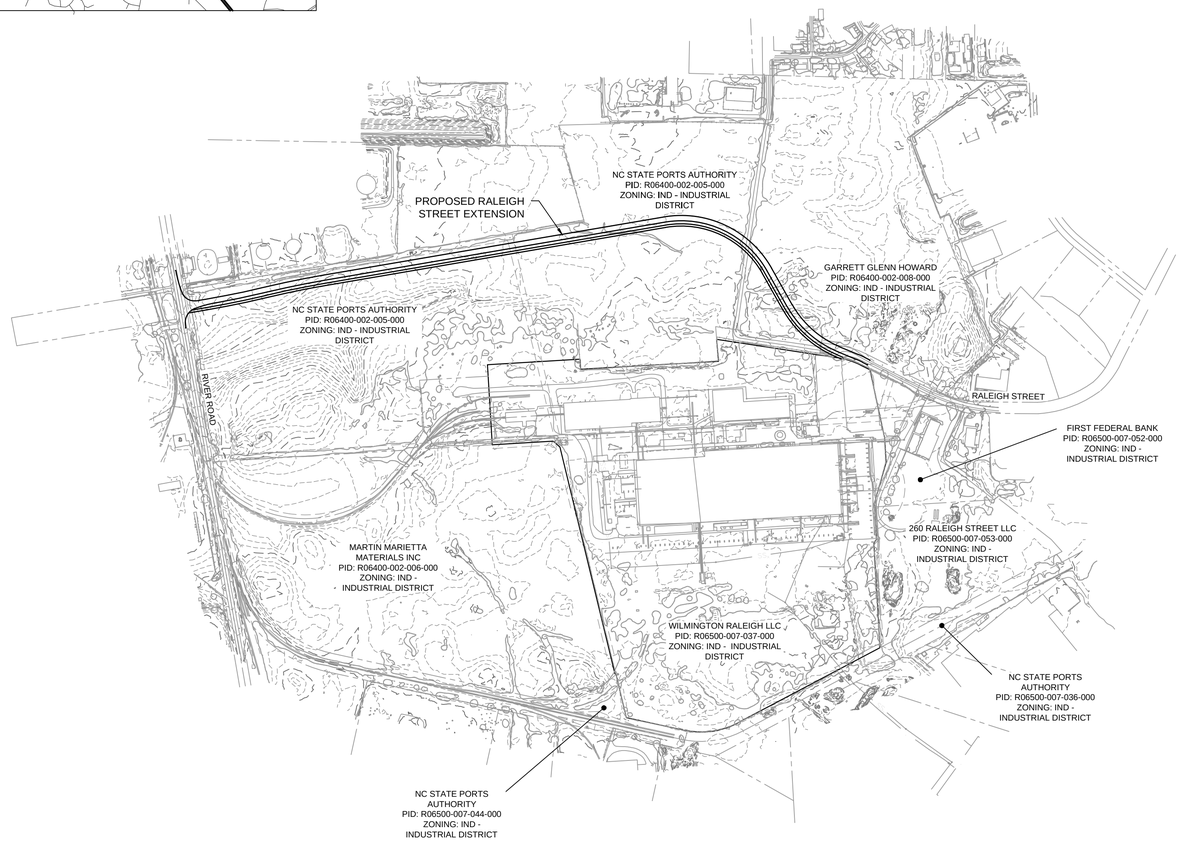
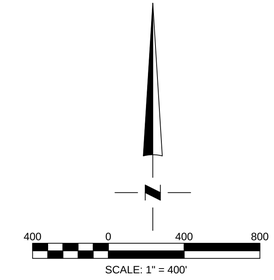




NOTES

1. SITE ADDRESS: 202 RALEIGH STREET
2. PROPERTY OWNER: WILMINGTON RALEIGH LLC
3. DEVELOPER: VERTEX RAIL CAR CORPORATION
4. TAX PARCEL # R06500-007-037-000
5. ZONING: IND - INDUSTRIAL DISTRICT
6. PROPERTY BOUNDARY: 68.37 ACRES
7. THE 100-YEAR FLOOD PLAIN BOUNDARY DOES NOT ENCROACH ONTO THE PROPERTY.
8. THE SOIL TYPE PER SOIL SURVEY OF NEW HANOVER COUNTY, NORTH CAROLINA BY THE US DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCE CONSERVATION SERVICE ARE:
   Be - BAYMEADE FINE SAND
   Kr - KUREB SAND
   Mu - MURVILLE FINE SAND
   Ur - URBAN LAND
9. THERE ARE NO CAMA AREAS OF CONCERN (AEC) OR ASSOCIATED SETBACKS ON THE SITE.
10. THE CAMA LAND CLASSIFICATION FROM THE WILMINGTON - NEW HANOVER COUNTY COMPREHENSIVE PLAN IS "URBAN."
11. THERE ARE NO CONSERVATION RESOURCES OR ASSOCIATED SETBACKS ON THE SITE.
12. THE SITE IS NOT RECOGNIZED AS A LOCAL, STATE, OR FEDERALLY HISTORIC OR ARCHEOLOGICAL SITE.
13. THERE ARE NO CEMETERIES, BURIAL SITES, OR BURIAL GROUNDS ON THE PROPERTY.
14. THE SITE DOES NOT CONTAIN FORESTED AREAS.
15. THERE ARE NO US ARMY CORPS OF ENGINEERS SECTION 404 WETLANDS OR SECTION 10 WATERS ON THE SITE.
16. THERE ARE NO KNOWN PROTECTED SPECIES OR ASSOCIATED HABITATS ON THE SITE.



SCALE: 1" = 400'

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(f) (910) 762-4200
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NC LICENSE NO.F-0374

PROFESSIONAL SEAL

REVISION RECORD

NO.	DESCRIPTION	BY	DATE

PROJECT NAME:
RAIL AND SITE IMPROVEMENTS PHASE 1
FOR
VERTEX RAIL CAR CORPORATION
202 RALEIGH STREET
WILMINGTON, NORTH CAROLINA 28412

DRAWING TITLE:
SITE INVENTORY PLAN

PROJ. MGR.:	DLF
DESIGN BY:	DLF
DRAWN BY:	TJC
PROJ. DATE:	JUNE 2015

DRAWING NUMBER:
C1.3
WKD PROJ. NO.:
20150016.00.WL

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

N:\Projects\Active Rail Technologies\20150016.WL - Vertex Wilmington Pearl Site Development\CAD\Plan Set\20150016_C_SHT_SITE INVENTORY.dwg, TOOLMFK, 6/3/2015 11:10:04 AM

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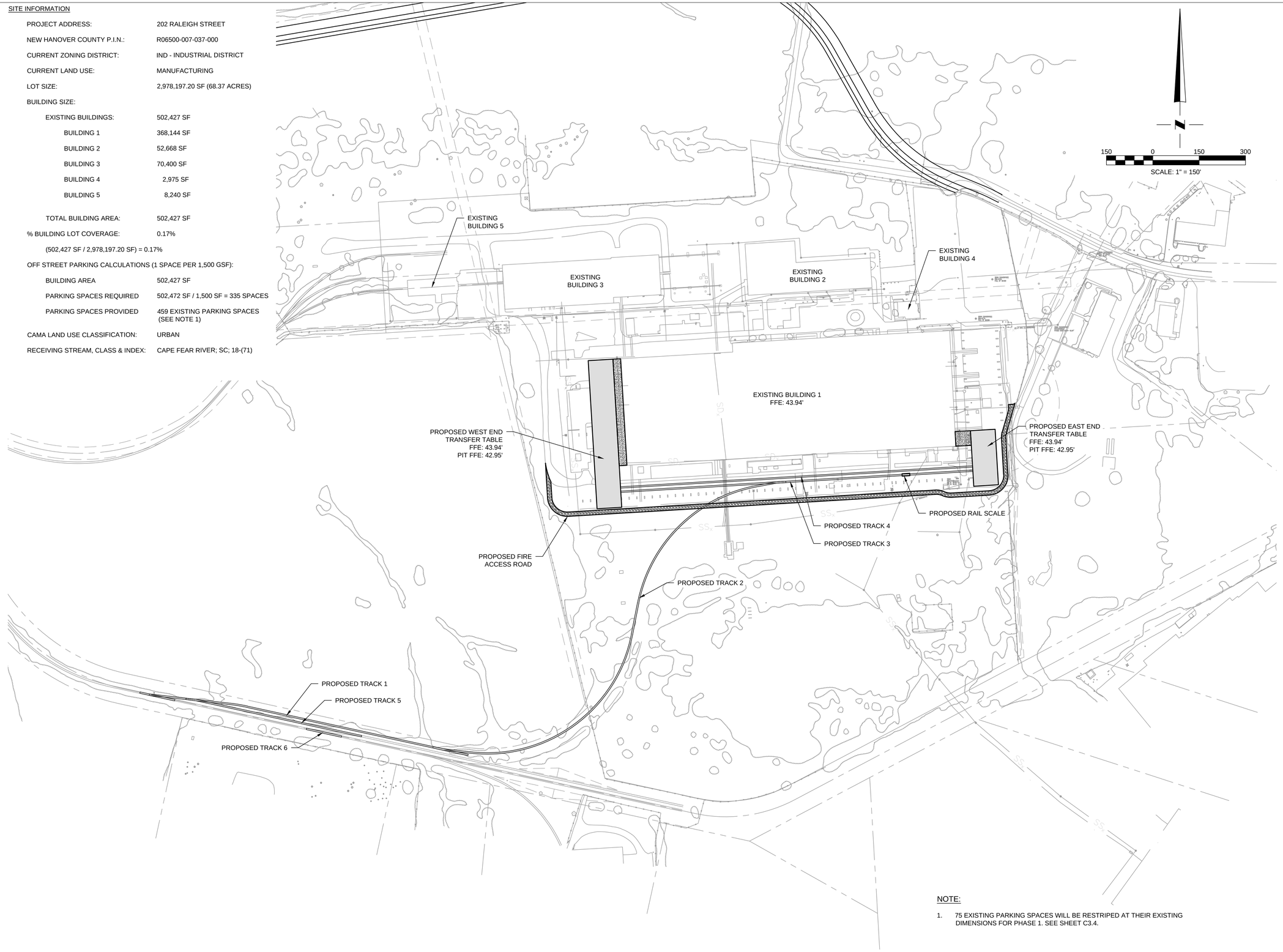
SITE INFORMATION

PROJECT ADDRESS:	202 RALEIGH STREET
NEW HANOVER COUNTY P.I.N.:	R06500-007-037-000
CURRENT ZONING DISTRICT:	IND - INDUSTRIAL DISTRICT
CURRENT LAND USE:	MANUFACTURING
LOT SIZE:	2,978,197.20 SF (68.37 ACRES)
BUILDING SIZE:	
EXISTING BUILDINGS:	502,427 SF
BUILDING 1	368,144 SF
BUILDING 2	52,668 SF
BUILDING 3	70,400 SF
BUILDING 4	2,975 SF
BUILDING 5	8,240 SF
TOTAL BUILDING AREA:	502,427 SF
% BUILDING LOT COVERAGE:	0.17%
(502,427 SF / 2,978,197.20 SF) = 0.17%	
OFF STREET PARKING CALCULATIONS (1 SPACE PER 1,500 GSF):	
BUILDING AREA	502,427 SF
PARKING SPACES REQUIRED	502,472 SF / 1,500 SF = 335 SPACES
PARKING SPACES PROVIDED	459 EXISTING PARKING SPACES (SEE NOTE 1)
CAMA LAND USE CLASSIFICATION:	URBAN
RECEIVING STREAM, CLASS & INDEX:	CAPE FEAR RIVER; SC; 18-(71)



NOTE:

1. 75 EXISTING PARKING SPACES WILL BE RESTRIPED AT THEIR EXISTING DIMENSIONS FOR PHASE 1. SEE SHEET C3.4.

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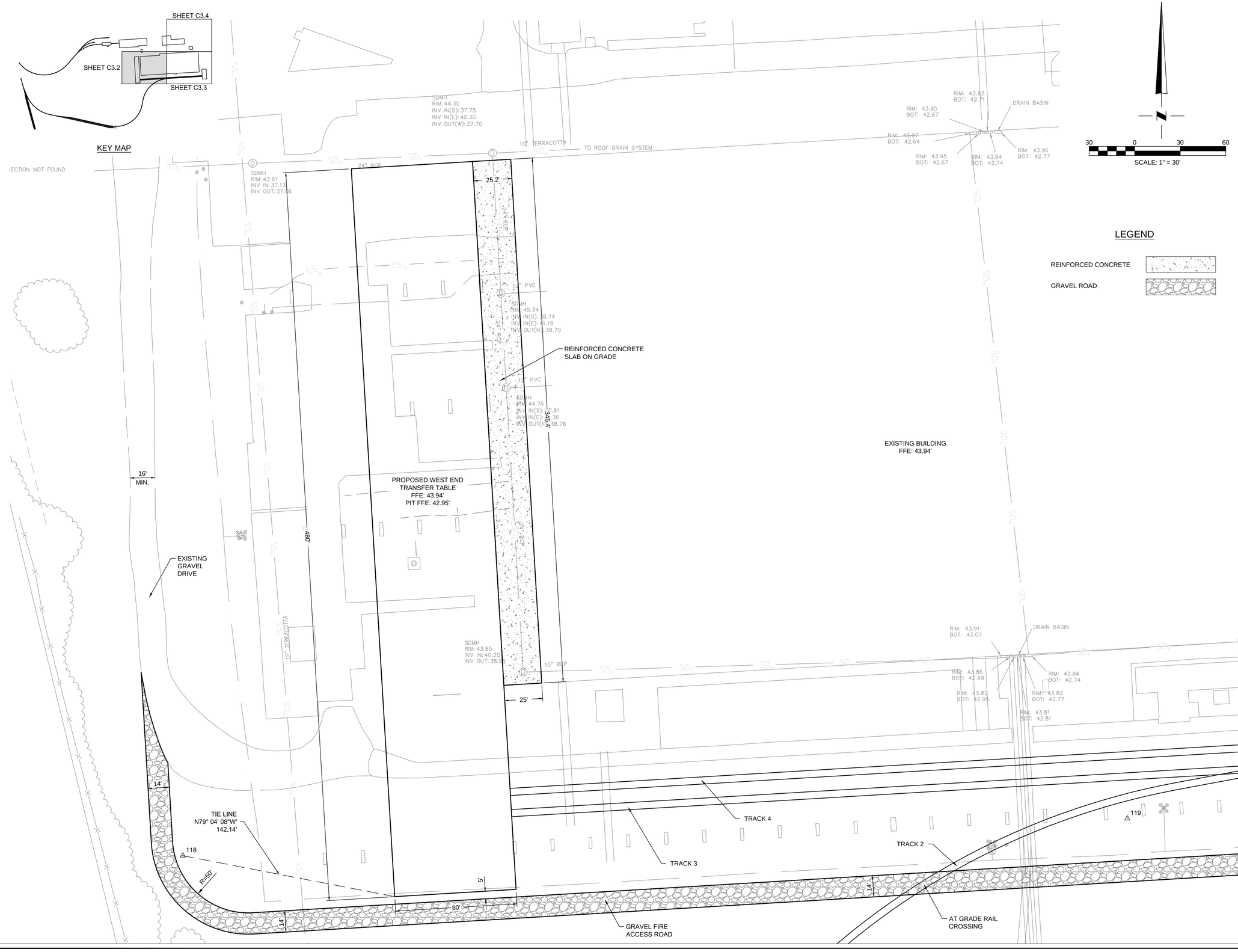
REVISION RECORD

NO.	DATE	DESCRIPTION	BY

PROJECT NAME: RAIL AND SITE IMPROVEMENTS PHASE 1
FOR
VERTEX RAIL CAR CORPORATION
202 RALEIGH STREET
WILMINGTON, NORTH CAROLINA 28412

DRAWING TITLE: OVERALL SITE PLAN

PROJ. MGR.:	DLF
DESIGN BY:	DLF
DRAWN BY:	TJC
PROJ. DATE:	JUNE 2015
DRAWING NUMBER:	C3.1
WKD PROJ. NO.:	20150016.00.WL



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NO.	DATE	DESCRIPTION	BY

PROJECT NAME: RAIL AND SITE IMPROVEMENTS PHASE 1 FOR VERTEX RAIL CAR CORPORATION 202 RALEIGH STREET WILMINGTON, NORTH CAROLINA 28412

DRAWING TITLE: SITE LAYOUT PLAN - SHEET 1

PROJ. MGR.:	DLF
DESIGN BY:	DLF
DRAWN BY:	TJC
PROJ. DATE:	JUNE 2015

DRAWING NUMBER: C3.2

WKD PROJ. NO.: 20150016.00.WL

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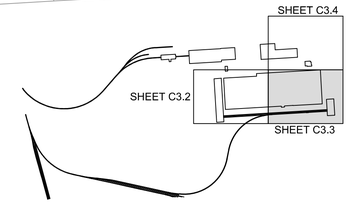
R:\20150016.00.WL\Phase1\Vertex Rail Technologies\DWG\BIM\Wilmington Yard Site Development\CAD\Plan Set\20150016.00.WL_Vertex Wilmington Yard Site Development CAD.rvt 20150016.00.WL_C_SHT_SITE LAYOUT PLAN.dwg, TCOLLINS, 6/3/2015 11:11:57 AM

MATCHLINE - SEE SHEET C3.2

MATCHLINE - SEE SHEET C3.4



KEY MAP

LEGEND

REINFORCED CONCRETE

GRAVEL ROAD

EXISTING BUILDING
FFE: 43.94'

STORM CONNECTION NOT FOUND

POSSIBLE UNDERGROUND JUNCTION BOX

SEWER CONNECTION NOT FOUND

8" TERRACOTTA

8" PIPE

SSMH
RIM: 44.06
INV W: 38.26
INV E: 37.98
INV S: 37.91

12" RCP

SSMH
RIM: 43.92
INV W: 38.65
INV N: 37.82
INV S: 37.52

4" PIPE

10" RCP

SDMH
RIM: 44.20
INV IN: 39.60
INV IN: 39.78
INV OUT: 39.55

STORM CONNECTION NOT FOUND

POSSIBLE UNDERGROUND JUNCTION BOX

SDMH
RIM: 43.86
INV IN: 38.48
INV IN: 38.78
INV OUT: 38.28

8" TERRACOTTA

15" RCP

WATER LINE PER RECORD

EXISTING ASPHALT DRIVE

SSMH
RIM: 43.99
INV N: 37.19
INV W: 38.73
INV S: 37.09

SDMH
RIM: 43.92
INV IN(W): 37.42
INV IN(N): 37.63
INV IN(E): 37.48
INV OUT(S): 37.31

15" TERRACOTTA

CB
RIM: 40.95
INV OUT: 36.8

4" PIPE

18" RCP

R=50'

SDMH
RIM: 44.00
INV IN: 37.60
INV OUT: 37.56

GRAVEL FIRE ACCESS ROAD

5' OFF PROPERTY LINE

14'

REINFORCED CONCRETE SLAB ON GRADE

49.7'

24" RCP

48'

50'

DI
RIM: 43.61
INV IN: 37.06
INV(W): 39.84
INV OUT(S): 36.99

PROPOSED EAST END TRANSFER TABLE
FFE: 43.94'
PIT FFE: 42.95'

120

180'

TIE LINE
N26° 08' 17"W'
106.78'

R=50'

13' OFF PROPERTY LINE

RIM: 43.84
BOT: 42.75

DRAIN BASIN

RIM: 43.86
BOT: 42.82

RIM: 43.90
BOT: 42.68

DRAIN BASIN

RIM: 43.95
BOT: 43.58

RIM: 43.97
BOT: 43.37

RIM: 43.96
BOT: 43.54

TRACK 4

TRACK 3

8" PVC FROM BUILDING

PROPOSED RAIL SCALE

SSMH
RIM: 43.65
INV N: 36.40
INV W: 36.30

DI
RIM: 43.45
INV IN: 36.75
INV OUT: 36.70

80'

14'

R=50'

GRAVEL FIRE ACCESS ROAD

SSMH
RIM: 43.68
INV W: 36.26
INV E: 35.76
INV N: 35.76
INV S: 35.74

12" TERRACOTTA

12" TERRACOTTA

30 0 30 60

SCALE: 1" = 30'

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REVISION RECORD

PROJECT NAME:
RAIL AND SITE IMPROVEMENTS PHASE 1
FOR
VERTEX RAIL CAR CORPORATION
202 RALEIGH STREET
WILMINGTON, NORTH CAROLINA 28412

DRAWING TITLE:
SITE LAYOUT PLAN - SHEET 2

PROJ. MGR.:	DLF
DESIGN BY:	DLF
DRAWN BY:	TJC
PROJ. DATE:	JUNE 2015

DRAWING NUMBER:

C3.3

WKD PROJ. NO.:

20150016.00.WL

MATCHLINE - SEE SHEET C3.3

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DRAWING TITLE: SITE LAYOUT PLAN - SHEET 3

PROJ. MGR.:	DLF
DESIGN BY:	DLF
DRAWN BY:	TJC
PROJ. DATE:	JUNE 2015

DRAWING NUMBER: C3.4

WKD PROJ. NO.: 20150016.00.WL

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PROPOSED RAILROAD TRACK TYPICAL SECTION
NOT TO SCALE

NOTE:

1. ALL NEW RAIL TO BE 115# RE OR 132# RE RAIL.

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FOR
VERTEX RAIL CAR CORPORATION
202 RALEIGH STREET
WILMINGTON, NORTH CAROLINA 28412

DRAWING TITLE:
RAIL TYPICAL SECTIONS

PROJ. MGR.:	DLF
DESIGN BY:	DLF
DRAWN BY:	TJC
PROJ. DATE:	JUNE 2015

DRAWING NUMBER:
C5.1

WKD PROJ. NO.:
20150016.00.WL

FILE PATH:M:\Projects\Vertex Rail Technologies\2015001601WL - Vertex Wilmington Plant Site Development\CADD\Plan Set\2015001601_C_SHT_DETAILS.dwgM:\Projects\Vertex Rail Technologies\2015001601WL - Vertex Wilmington Plant Site Development\CADD\Plan Set\2015001601_C_SHT_DETAILS.dwg, TCOLLINS, 6/3/2015 11:11:48 AM

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TRACK LINE TABLE		
LABEL	LENGTH	BEARING
L1	25.00'	S77°45'57"E
L2	31.25'	S77°42'31"E
L3	84.75'	S83°26'00"E
L4	34.38'	S83°26'00"E
L5	31.25'	S83°26'00"E
L6	84.75'	S83°26'00"E
L7	26.92'	S83°26'00"E
L8	615.33'	S77°42'31"E
L9	31.25'	S77°42'31"E
L10	84.75'	S77°42'31"E
L11	68.12'	S77°42'31"E
L12	84.33'	S77°42'31"E
L13	465.70'	S77°42'31"E
L14	18.72'	S77°42'31"E
L15	85.17'	S83°26'00"E
L16	4.56'	S83°26'00"E
L17	102.47'	N11°07'41"E
L18	67.53'	N79°25'44"E
L19	30.00'	N86°34'54"E
L20	437.88'	N86°34'54"E
L21	67.00'	N86°34'54"E
L22	606.22'	N86°34'54"E
L23	1141.09'	N86°34'54"E
L24	50.00'	S77°42'31"E
L25	116.00'	S77°42'31"E
L26	34.00'	S77°42'31"E

TRACK CURVE TABLE			
LABEL	RADIUS	DELTA	LENGTH
C1	573.69'	005°43'29"	57.25'
C2	478.34'	085°26'19"	711.99'
C3	478.34'	068°18'03"	569.18'

NOTE:

CURVE LENGTHS AND STATIONS ARE BASED ON CHORD DEFINITION

POINT TABLE				
POINT #	NORTHING	EASTING	ELEVATION	RAW DESCRIPTION
118	157428.9365	2319591.8831	43.600	IRS
119	157453.4019	2320213.8174	42.470	IRS
120	157575.4241	2320983.1778	42.689	IRS

△ CONTROL POINT

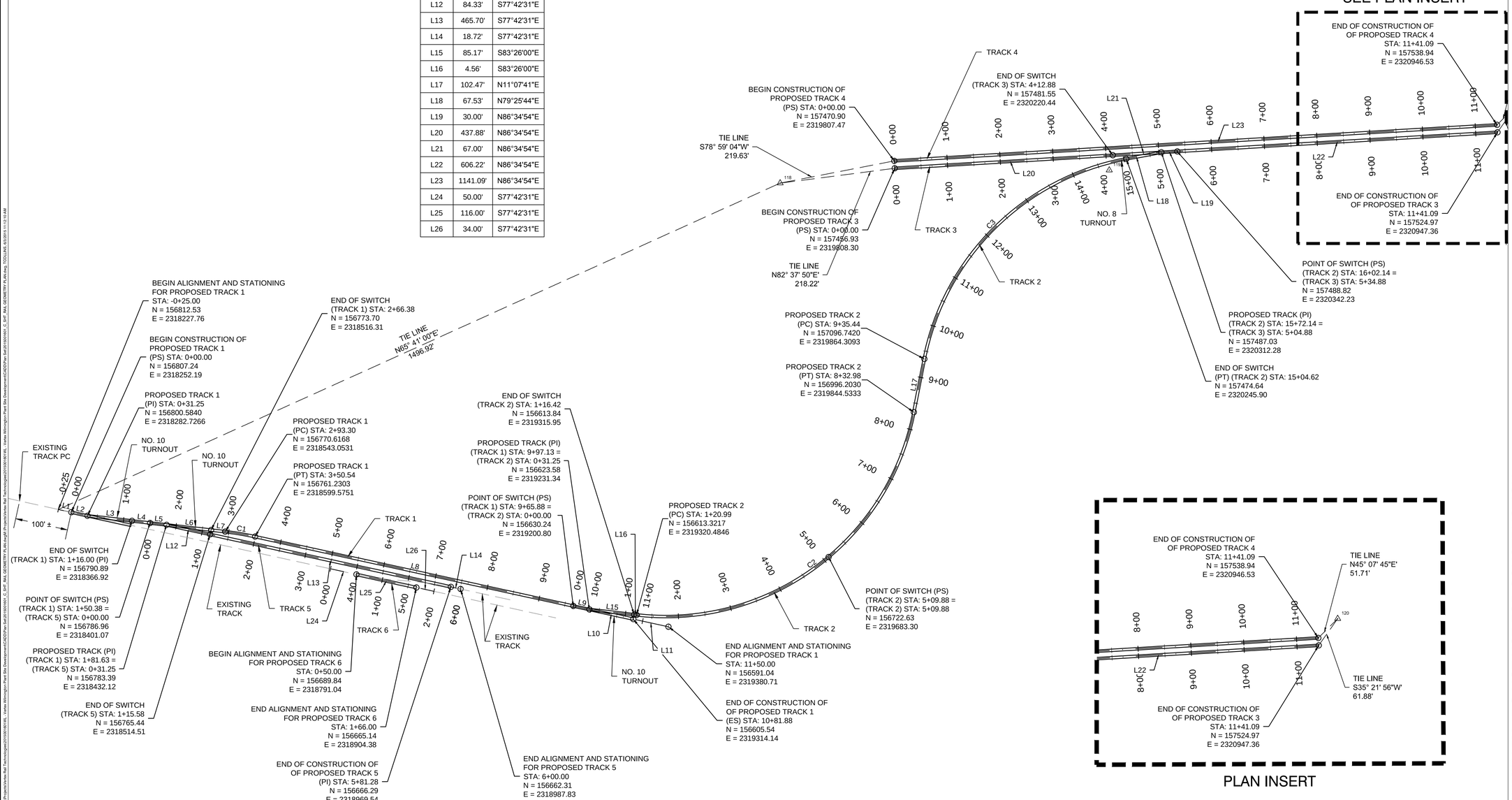
SURVEY CONTROL NOTES:

1. CONTROL POINT DATA SURVEYED BY WK DICKSON & CO., INC. IN MARCH 2015.
2. THE HORIZONTAL DATUM IS NC GRID (NAD83/2011) IN US SURVEY FEET.
3. THE VERTICAL DATUM IS NAVD88 IN US SURVEY FEET.
4. ALL COORDINATES LISTED BELOW ARE GROUND COORDINATES AND LOCALIZED ABOUT NCGS MONUMENT "BRYAN" (NAD83/2011), NORTHING: 141368.17 EASTING: 2334392.28, ELEVATION 38.03 (NAVD88), COMBINED FACTOR: 0.99993459428.

100 0 100 200

SCALE: 1" = 100'

SEE PLAN INSERT



PLAN INSERT

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REVISION RECORD			
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PRELIMINARY - DO NOT USE FOR CONSTRUCTION

PROJECT NAME:
RAIL AND SITE IMPROVEMENTS PHASE 1
FOR
VERTEX RAIL CAR CORPORATION
202 RALEIGH STREET
WILMINGTON, NORTH CAROLINA 28412

DRAWING TITLE:
RAIL GEOMETRY LAYOUT PLAN

PROJ. MGR.:	DLF
DESIGN BY:	DLF
DRAWN BY:	TJC
PROJ. DATE:	JUNE 2015

DRAWING NUMBER:
C5.2

WKD PROJ. NO.:
20150016.00.WL

K:\Projects\Projects\Rail Technologies\20150016\WL - Vertex Wilmington Fleet Site Development\CAD\Tax Exhibit\20150016_C_SPT_RAIL GEOMETRY PLAN.dwg, TOOLLINE, 6/3/2015 11:13:10 AM

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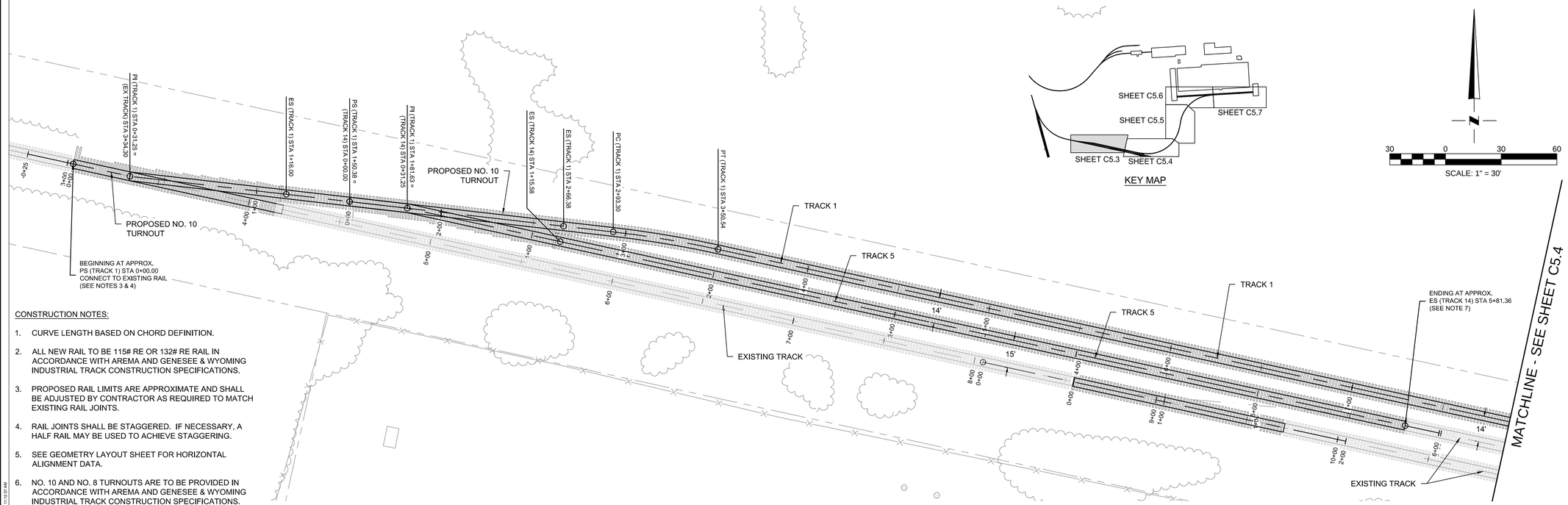
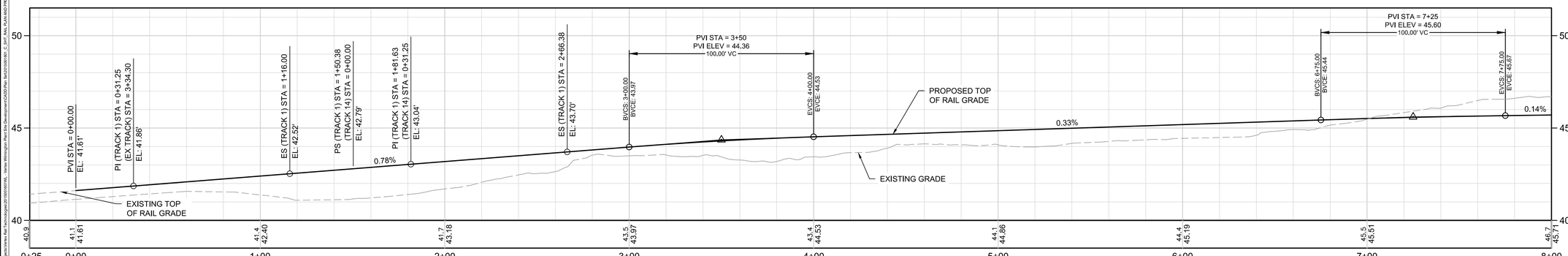


KEY MAP

SCALE: 1" = 30'

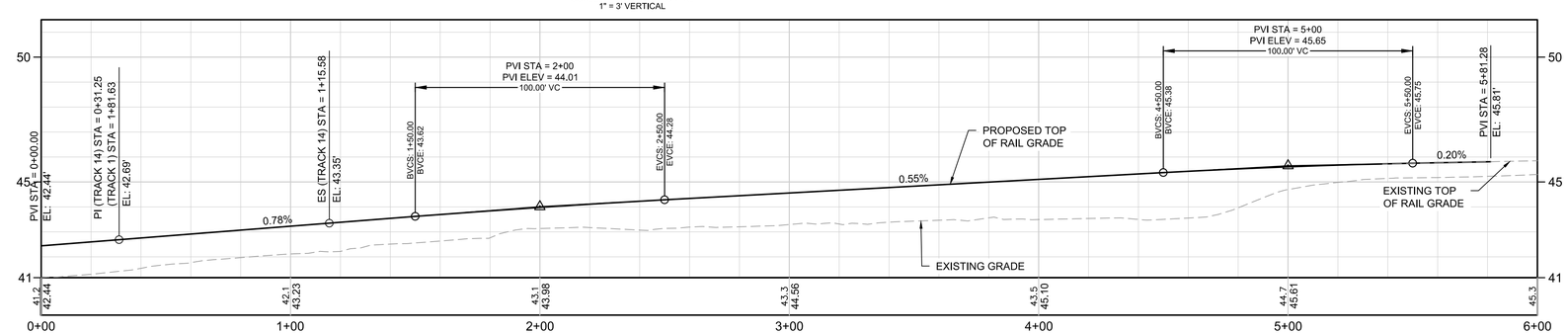
CONSTRUCTION NOTES:

1. CURVE LENGTH BASED ON CHORD DEFINITION.
2. ALL NEW RAIL TO BE 115# RE OR 132# RE RAIL IN ACCORDANCE WITH AREMA AND GENESEE & WYOMING INDUSTRIAL TRACK CONSTRUCTION SPECIFICATIONS.
3. PROPOSED RAIL LIMITS ARE APPROXIMATE AND SHALL BE ADJUSTED BY CONTRACTOR AS REQUIRED TO MATCH EXISTING RAIL JOINTS.
4. RAIL JOINTS SHALL BE STAGGERED. IF NECESSARY, A HALF RAIL MAY BE USED TO ACHIEVE STAGGERING.
5. SEE GEOMETRY LAYOUT SHEET FOR HORIZONTAL ALIGNMENT DATA.
6. NO. 10 AND NO. 8 TURNOUTS ARE TO BE PROVIDED IN ACCORDANCE WITH AREMA AND GENESEE & WYOMING INDUSTRIAL TRACK CONSTRUCTION SPECIFICATIONS.
7. TRACK SHALL BE CONSTRUCTED IN ACCORDANCE WITH AREMA AND GENESEE & WYOMING INDUSTRIAL TRACK CONSTRUCTION SPECIFICATIONS.



TRACK 1 PROFILE VIEW (STA -0+25.00 - STA 8+00.00)

SCALE: 1" = 30' HORINZONTAL
1" = 3' VERTICAL



TRACK 5 PROFILE VIEW (STA 0+00.00 - STA 6+00.00)

SCALE: 1" = 30' HORINZONTAL
1" = 3' VERTICAL

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PROJECT NAME:
RAIL AND SITE IMPROVEMENTS PHASE 1
FOR
VERTEX RAIL CAR CORPORATION
202 RALEIGH STREET
WILMINGTON, NORTH CAROLINA 28412

DRAWING TITLE:
RAIL PLAN AND PROFILE SHEET 1

PROJ. MGR.:	DLF
DESIGN BY:	DLF
DRAWN BY:	TJC
PROJ. DATE:	JUNE 2015

DRAWING NUMBER:
C5.3

WKD PROJ. NO.:
20150016.00.WL

R:\2015\Projects\Rail Technologies\20150016\VA, Vienna Wilmington Road Site Development\CAD\Civil 3d\20150016 - Vienna Wilmington Road Site Development.dwg, 6/3/2015 11:03:37 AM, TOSCULAR

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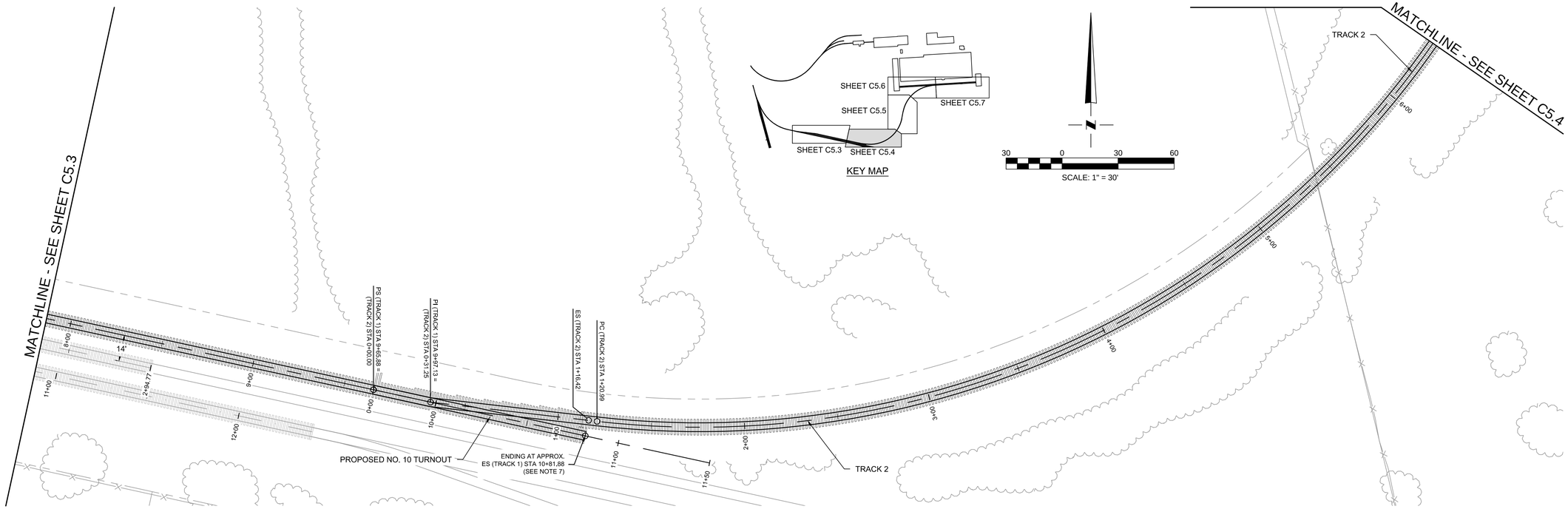
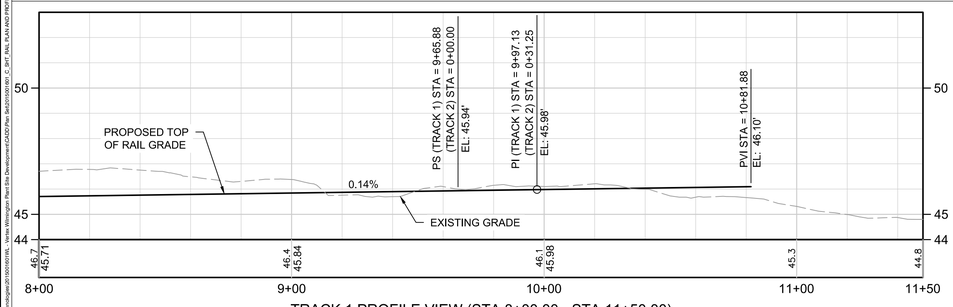
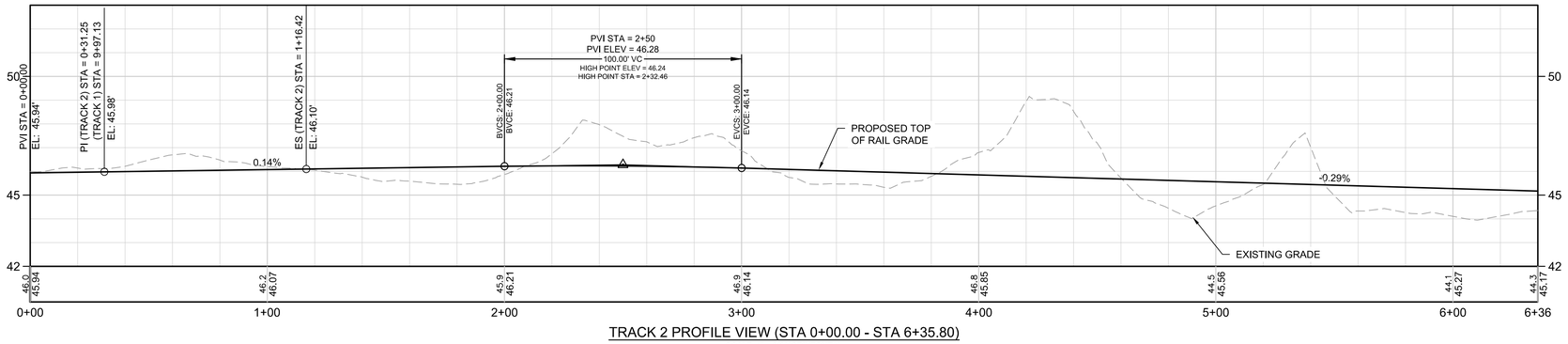




TRACK 1 PROFILE VIEW (STA 8+00.00 - STA 11+50.00)

SCALE: 1" = 30' HORINZONTAL
1" = 3' VERTICAL



TRACK 2 PROFILE VIEW (STA 0+00.00 - STA 6+35.80)

SCALE: 1" = 30' HORINZONTAL
1" = 3' VERTICAL

CONSTRUCTION NOTES:

1. CURVE LENGTH BASED ON CHORD DEFINITION.
2. ALL NEW RAIL TO BE 115# RE OR 132# RE RAIL IN ACCORDANCE WITH AREMA AND GENESEE & WYOMING INDUSTRIAL TRACK CONSTRUCTION SPECIFICATIONS.
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PRELIMINARY - DO NOT USE FOR CONSTRUCTION

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NC LICENSE NO.F-0374

PROFESSIONAL SEAL

REVISION RECORD

NO.	DESCRIPTION	DATE	BY

PROJECT NAME:
RAIL AND SITE IMPROVEMENTS PHASE 1
FOR
VERTEX RAIL CAR CORPORATION
202 RALEIGH STREET
WILMINGTON, NORTH CAROLINA 28412

DRAWING TITLE:
RAIL PLAN AND PROFILE SHEET 2

PROJ. MGR.:	DLF
DESIGN BY:	DLF
DRAWN BY:	TJC
PROJ. DATE:	JUNE 2015

DRAWING NUMBER:
C5.4

WKD PROJ. NO.:
20150016.00.WL

PLT PATH:M:\Projects\New Rail Technologies\20150016\WL - Vertex Wilmington Plant Site Development\CAD\Civil\Rail Layout\20150016WL - Vertex Wilmington Plant Site Development-CAD\Civil\Rail Layout\20150016WL_C_SHT_RAIL AND PROFILE.dwg, 6/3/2015 11:12:47 AM

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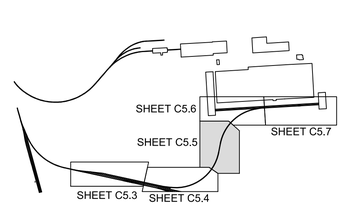
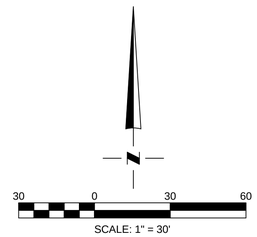
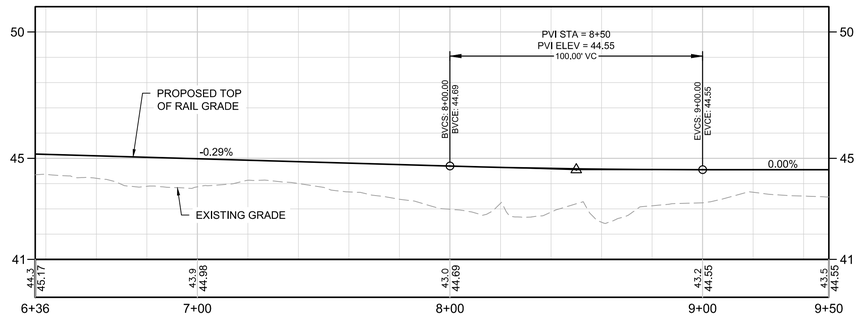


KEY MAP

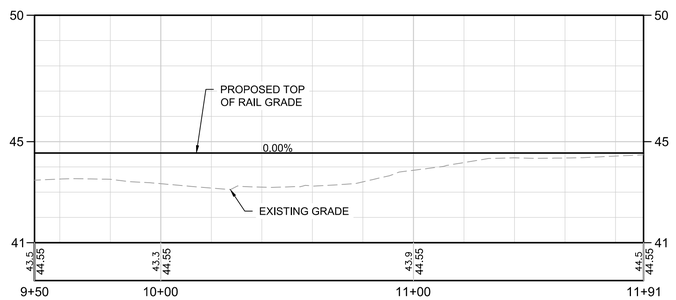


SCALE: 1" = 30'



TRACK 2 PROFILE VIEW (STA 6+35.80 - STA 9+50.00)

SCALE: 1" = 30' HORIZONTAL
1" = 3' VERTICAL



TRACK 2 PROFILE VIEW (STA 9+50.00 - STA 11+91.10)

SCALE: 1" = 30' HORIZONTAL
1" = 3' VERTICAL

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

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(f) (910) 762-4200

WWW.WKDICKSON.COM

NC LICENSE NO.F-0374

PROFESSIONAL SEAL

REVISION RECORD

NO.	DATE	DESCRIPTION	BY

PROJECT NAME:
RAIL AND SITE IMPROVEMENTS PHASE 1
FOR
VERTEX RAIL CAR CORPORATION
202 RALEIGH STREET
WILMINGTON, NORTH CAROLINA 28412

DRAWING TITLE:
RAIL PLAN AND PROFILE SHEET 3

PROJ. MGR.:	DLF
DESIGN BY:	DLF
DRAWN BY:	TJC
PROJ. DATE:	JUNE 2015

DRAWING NUMBER:
C5.5

WKD PROJ. NO.:
20150016.00.WL

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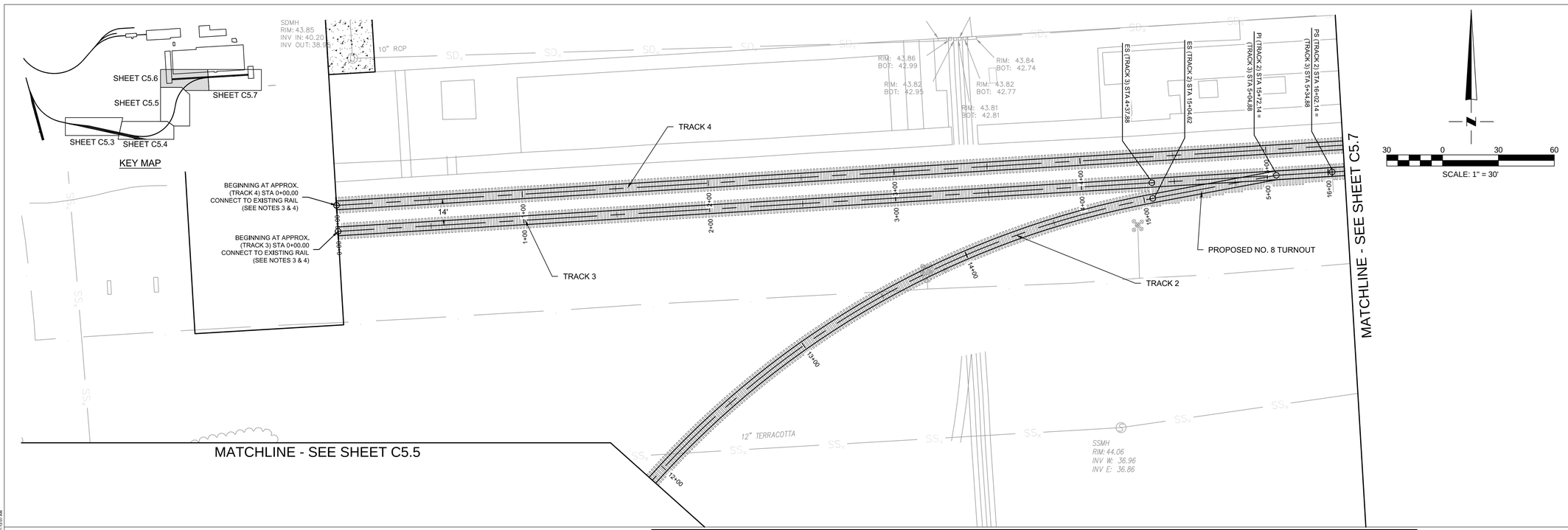

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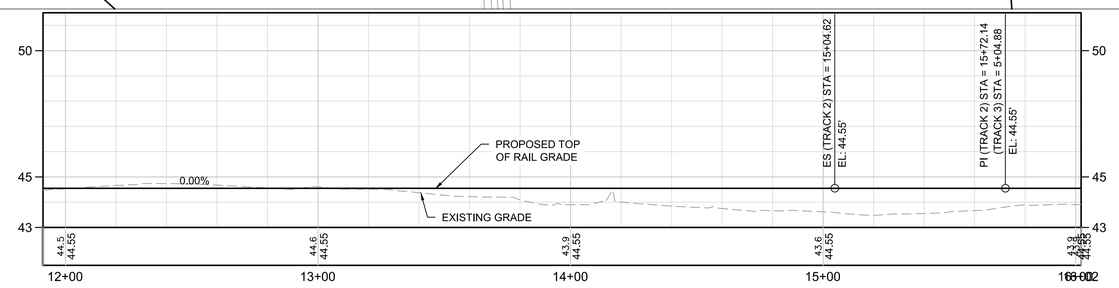
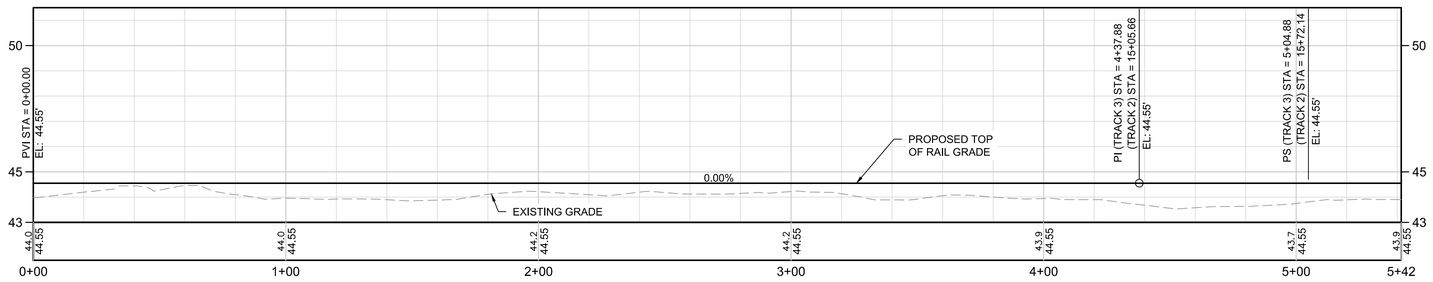


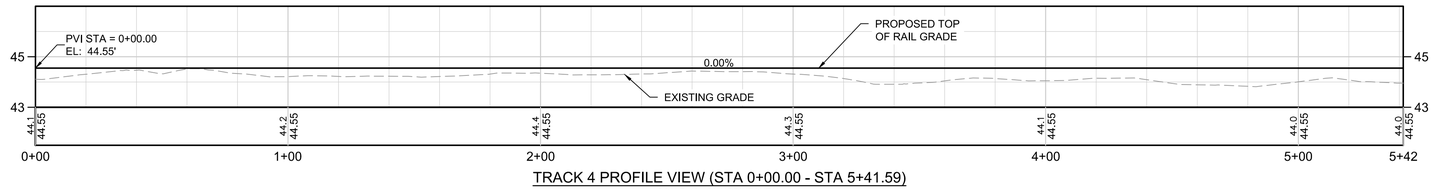
TRACK 2 PROFILE VIEW (STA 11+91.10 - STA 16+02.14)

SCALE: 1" = 30' HORINZONTAL
1" = 3' VERTICAL



TRACK 3 PROFILE VIEW (STA 0+00.00 - STA 5+41.59)

SCALE: 1" = 30' HORINZONTAL
1" = 3' VERTICAL



TRACK 4 PROFILE VIEW (STA 0+00.00 - STA 5+41.59)

SCALE: 1" = 30' HORINZONTAL
1" = 3' VERTICAL

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

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NC LICENSE NO.F-0374

PROFESSIONAL SEAL

REVISION RECORD

NO	DESCRIPTION	BY	DATE

PROJECT NAME:
RAIL AND SITE IMPROVEMENTS PHASE 1
FOR
VERTEX RAIL CAR CORPORATION
202 RALEIGH STREET
WILMINGTON, NORTH CAROLINA 28412

DRAWING TITLE:
RAIL PLAN AND PROFILE SHEET 4

PROJ. MGR.:	DLF
DESIGN BY:	DLF
DRAWN BY:	TJC
PROJ. DATE:	JUNE 2015

DRAWING NUMBER:
C5.6

WKD PROJ. NO.:
20150016.00.WL

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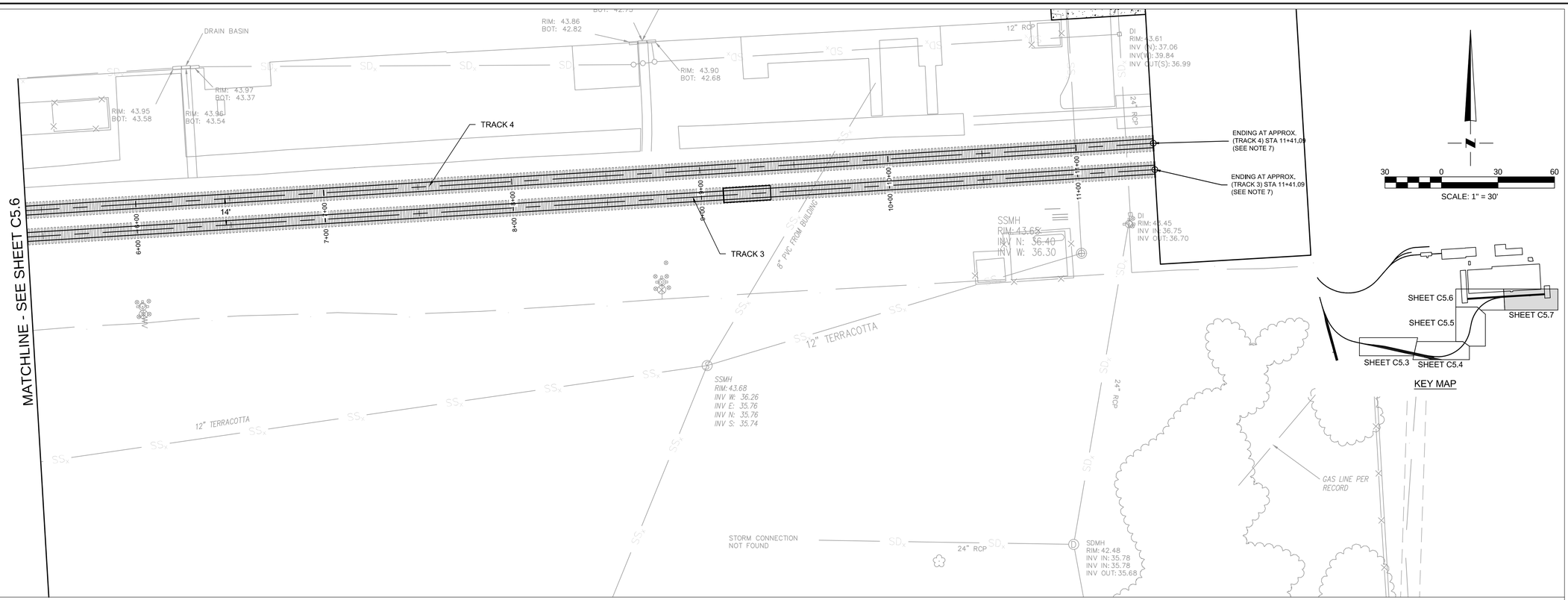
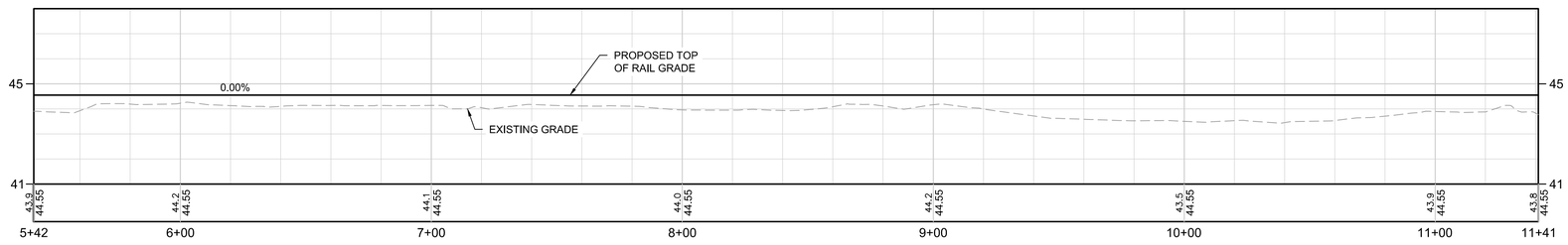
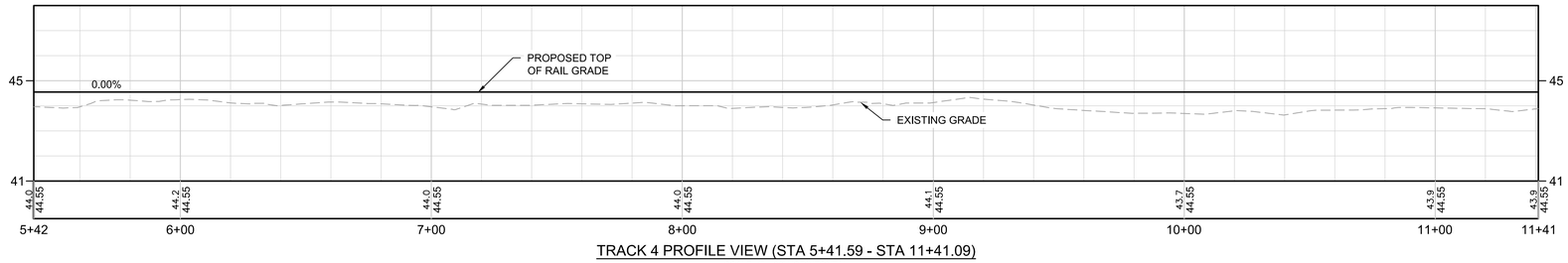




TRACK 3 PROFILE VIEW (STA 5+41.59 - STA 11+41.09)

SCALE: 1" = 30' HORINZONTAL
1" = 3' VERTICAL



TRACK 4 PROFILE VIEW (STA 5+41.59 - STA 11+41.09)

SCALE: 1" = 30' HORINZONTAL
1" = 3' VERTICAL

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PROFESSIONAL SEAL

REVISION RECORD

NO.	DATE	DESCRIPTION	BY

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

PROJECT NAME:
RAIL AND SITE IMPROVEMENTS PHASE 1
FOR
VERTEX RAIL CAR CORPORATION
202 RALEIGH STREET
WILMINGTON, NORTH CAROLINA 28412

DRAWING TITLE:
RAIL PLAN AND PROFILE SHEET 5

PROJ. MGR.:	DLF
DESIGN BY:	DLF
DRAWN BY:	TJC
PROJ. DATE:	JUNE 2015

DRAWING NUMBER:
C5.7
WKD PROJ. NO.:
20150016.00.WL

K:\20150016.00\wellington\20150016.00.WL Vertex Wilmington Rail Site Development\CAD\Plan Set\20150001_C_SHT_RAIL PLAN AND PROFILE.dwg, TOGLINE, 6/3/2015 11:15:18 AM