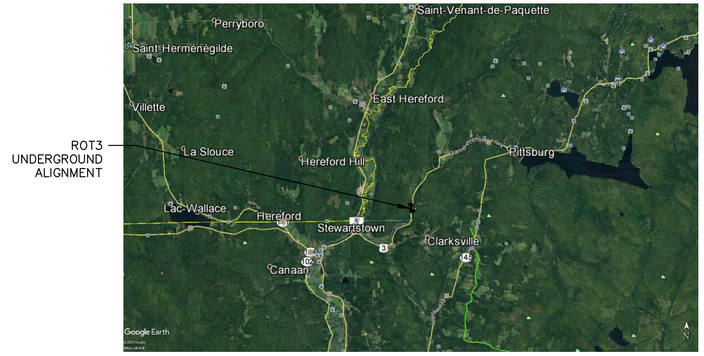
THE NORTHERN PASS

NORTHERN PASS TRANSMISSION (NPT) PROJECT

ROUTE 3 (ROT3) UNDERGROUND ALIGNMENT

PERMIT PACKAGE – NH DOT DISTRICT 1

NOVEMBER 30, 2016



VICINITY MAP
(NOT TO SCALE)

DRAWING INDEX

GENERAL DRAWINGS

DWG. NO.	DWG. TITLE
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ROT3G001	GENERAL NOTES

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ROT3C101	UNDERGROUND ALIGNMENT–STA 1+00 TO 7+00
ROT3C102	UNDERGROUND ALIGNMENT–STA 7+00 TO 12+50
ROT3C103	UNDERGROUND ALIGNMENT–STA 12+50 TO 20+50
ROT3C104	UNDERGROUND ALIGNMENT–STA 20+50 TO 28+00
ROT3C105	UNDERGROUND ALIGNMENT–STA 28+00 TO 35+00
ROT3C106	UNDERGROUND ALIGNMENT–STA 35+00 TO 37+98.79

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ROT3C503	CABLE SPLICE PIT DETAILS
ROT3C504	TRENCH AND UTILITY DETAILS
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ROT3TCP–2	TRAFFIC CONTROL TYPICALS
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DWG. NO.	DWG. TITLE
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ROT3009–2	TRENCHLESS CROSSING ROT3
ROT3009–3	TRENCHLESS CROSSING ROT3
ROT3G001	TRENCHLESS CROSSINGS

GENERAL CONTRACTOR
PAR ELECTRICAL CONTRACTORS, INC.
70 FULLER ROAD
CHICOPEE, MA 01020

CIVIL ENGINEER
SGC ENGINEERING, LLC.
501 COUNTY ROAD
WESTBROOK, ME 04092

TRAFFIC ENGINEER
LOUIS BERGER
100 COMMERCIAL STREET,
2ND FLOOR NORTH
MANCHESTER, NH 03101

CIVIL ENGINEER – TRENCHLESS
BRIERLEY ASSOCIATES
167 SOUTH RIVER ROAD, #8
BEDFORD, NH 03110

PRELIMINARY - NOT FOR CONSTRUCTION

PRELIMINARY - NOT FOR CONSTRUCTION

EXISTING

- RIGHT OF WAY
- ADJACENT PROPERTY LINE
- WETLAND
- STREAM EDGE
- STREAM CENTERLINE
- EDGE OF VERNAL POOL
- FENCE
- STONEWALL
- OHW — OVERHEAD WIRES
- TREELINE
- 300 — EXISTING MAJOR CONTOUR
- 298 — EXISTING MINOR CONTOUR
- BUILDING
- GRAVEL ROAD
- PAVED ROAD
- IRON PIPE OR ROD
- STONE OR CONCRETE BOUND
- UTILITY POLE
- SEWER MANHOLE
- CATCH BASIN
- WELL
- FIRE HYDRANT
- WATER SHUT OFF
- GATE VALVE
- LIGHT POLE
- BH-100 — BOREHOLE
- MAILBOX

PROPOSED

- TRENCH LIMITS
- CABLE ROUTE
- UG SPLICE LOCATION
- UG SPLICE W/ FIBER SPLICE LOCATION
- UG SPLICE W/ LINK BOX LOCATION
- TRENCHLESS INSTALLATION

TEMPORARY TRAFFIC CONTROL NOTES:

1. CONTRACTOR SHALL MAINTAIN ACCESS FOR ALL VEHICLES UP TO A SINGLE UNIT TRUCK TO ALL EXISTING SIDE ROADS AND DRIVEWAYS.
2. ALL ROAD WORK SHALL BE IN CONFORMANCE WITH THE LATEST EDITION OF THE MUTCD.
3. ALL WORK VEHICLES, SHADOW VEHICLES, AND POLICE CRUISERS SHALL HAVE HIGH-INTENSITY ROTATING, FLASHING, OSCILLATING, AND/OR STROBE LIGHTS ACTIVE AT ALL TIMES.
4. ACTUAL PLACEMENT OF CONSTRUCTION SIGNS SHALL BE CAREFULLY CONSIDERED TO AVOID OBSTRUCTING EXISTING SIGNS OR ALLOWING EXISTING SIGNS, VEGETATION, OR OTHER PHYSICAL FEATURES TO OBSTRUCT OR LIMIT VISIBILITY TO CONSTRUCTION SIGNS. CONSTRUCTION SIGNS SHALL ALSO BE PLACED AT LOCATIONS THAT AVOID OVERWHELMING MOTORISTS WITH INFORMATION WHEN COMBINED WITH EXISTING SIGNS.
5. CONES SHALL NOT BE USED FOR EITHER LONG-TERM STATIONARY OR INTERMEDIATE-TERM STATIONARY WORK APPLICATIONS. CONES REGARDLESS OF SIZE, SHALL NOT BE USED AT NIGHT AS THE PRIMARY CHANNELIZATION DEVICE, EXCEPT DURING WORK HOURS. CONES MAY, HOWEVER, BE USED TO SUPPLEMENT OTHER CHANNELIZING DEVICES SUCH AS DRUMS AND BARRICADES IN PLACE AT NIGHT. FOR NIGHTTIME USE, CONES SHALL BE RETROREFLECTORIZED OR EQUIPPED WITH LIGHTING DEVICES FOR MAXIMUM VISIBILITY. RETROREFLECTORIZATION OF 700 mm (28 in) OR LARGER CONES SHALL BE PROVIDED BY A WHITE BAND 150 mm (6 in) WIDE LOCATED 75 TO 100 mm (3 TO 4 in) FROM THE TOP OF THE CONES AND AN ADDITIONAL 100 mm (4 in) WIDE BAND APPROXIMATELY 50 mm (2 in) BELOW THE 150 MM (6 in) BAND.
6. A TRAFFIC MANAGEMENT PLAN DEVELOPED PER NHDOT STANDARDS WILL BE DEVELOPED PRIOR TO COMMENCEMENT OF CONSTRUCTION THAT WILL PROVIDE ADDITIONAL DETAILS ON COMMUNITY NOTIFICATIONS IN REGARDS TO THE LOCATION OF WORK WITHIN THE ROADWAY AS WELL AS COORDINATION WITH LOCAL EMERGENCY OFFICIALS.

STATION	to	STATION	CONSTRUCTION ACTIVITY	CORRESPONDING TRAFFIC CONTROL LAYOUT (BY SHEET NUMBER)
12+50		14+00	CONDUIT INSTALLATION	ROT3TCP-1
14+00		17+61	CONDUIT INSTALLATION/HDD STAGING AREA	ROT3TCP-1
17+61		27+50	HDD	NONE REQUIRED
27+50		33+00	CONDUIT INSTALLATION/HDD STAGING AREA	ROT3TCP-1
33+00		34+00	CONDUIT INSTALLATION	ROT3TCP-3
16+00		17+60	WIRE PULLING/SPLICING	ROT3TCP-4

*IN AREAS OF HDD THE TRAFFIC CONTROL NEEDS WILL BE AT THE ENTRY AND EXIT POINTS ONLY.

SURVEY NOTES:

1. SURVEY PROVIDED BY BL COMPANIES.
2. WETLAND AND STREAM MAPPING PROVIDED BY NORMANDEAU ASSOCIATES.
3. HORIZONTAL DATUM IS BASED ON NEW HAMPSHIRE STATE PLANE COORDINATE SYSTEM, NAD 83F. ELEVATIONS DEPICTED ON THIS PLAN REFER TO THE NAVD OF 1988.
4. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES DEPICTED ON THIS PLAN ARE BASED ON FIELD OBSERVATIONS, FIELD SURVEY, AND INFORMATION OF RECORD. IT IS NOT WARRANTED THAT ALL UNDERGROUND UTILITIES OR OTHER STRUCTURES ARE DEPICTED ON THIS PLAN. UTILITIES THAT REQUIRE FIELD VERIFICATION ARE NOTED ON THE PLANS.
5. A SURVEY CONTROL BASELINE WAS ESTABLISHED BY BL COMPANIES, UTILIZING A COMBINATION OF GPS AND CONVENTIONAL LAND SURVEYING ALONG THE PROJECT CORRIDOR. HORIZONTAL CONTROL WAS TIED INTO THE NEW HAMPSHIRE STATE PLANE COORDINATE SYSTEM NAD 83, (ZONE 2800, US SURVEY FOOT). THE ORDER OF ACCURACY OF THE CONTROL SURVEY IS SECOND ORDER, CLASS II. RESEARCH WAS CONDUCTED AT MULTIPLE TOWN, COUNTY AND STATE OFFICES TO OBTAIN RIGHT-OF-WAY INFORMATION, HIGHWAY LAYOUTS, PROPERTY OWNER INFORMATION, CURRENT DEEDS AND ANY FILED PLANS FOR PROPERTIES ALONG THE PROJECT CORRIDOR. ROADWAY RIGHT-OF-WAY LINES HAVE BEEN ESTABLISHED FROM AVAILABLE DOCUMENTS, SUCH AS RECORD LAYOUTS AND HIGHWAY PLANS, AND THE BOUNDARY EVIDENCE RECOVERED AND FIELD SURVEYED ALONG THE PROJECT CORRIDOR. ADJACENT OWNER PROPERTY LINES HAVE BEEN COMPILED AND DEPICTED FROM TAX ASSESSOR INFORMATION, RECORDED DEEDS, AND THE SURVEYED FIELD EVIDENCE.
6. THE EXISTING CONDITIONS DEPICTED ON THIS PLAN WERE DEVELOPED FROM A COMBINED EFFORT OF AERIAL PHOTOGRAMMETRIC MAPPING BASED ON AERIAL PHOTOGRAPHS, FIELD SURVEY, AND INFORMATION OF RECORD.
7. BEFORE CONSTRUCTION, ALL UTILITIES, PUBLIC AND PRIVATE, MUST BE NOTIFIED CALL DIG SAFE; 1-888-DIG-SAFE (888-344-7233).
8. THE LOCATIONS OF EXISTING OVERHEAD ELECTRICAL DISTRIBUTION DEPICTED ON THIS PLAN ARE APPROXIMATE BASED UPON AERIAL PHOTOGRAMMETRIC MAPPING AND FIELD SURVEY. THEY ARE NOT WARRANTED TO BY EXACTLY LOCATED NOR IS IT WARRANTED THAT ALL UNDERGROUND UTILIITES OR OTHER STRUCTURES ARE DEPICTED ON THIS PLAN.

GENERAL NOTES:

1. THE UTILITIES AND NATURAL FEATURES SHOWN HEREON ARE BASED ON AERIAL SURVEYS AND RECORD DOCUMENTS. OTHER FACILITIES MAY EXIST NOT DISCOVERED THROUGH THE RECORD CHECK. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION, BOTH HORIZONTAL AND VERTICAL, OR ALL UTILITIES THROUGH THE APPROPRIATE UTILITY COMPANIES. CALL BEFORE YOU DIG.
2. VERTICAL RADII SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED. CABLE ROUTE – 100' R. TYPICAL, 25' R. MINIMUM.
3. CABLE ROUTE SHALL MAINTAIN MINIMUM COVER DEPTH OF 30" UNLESS OTHERWISE SHOWN ON DRAWINGS.
4. CABLE ROUTE SHALL MAINTAIN 2'-0" VERTICAL AND HORIZONTAL CLEARANCE OVER OR UNDER EXISTING UTILITIES UNLESS OTHERWISE SHOWN ON DRAWINGS.
5. SPLICE LOCATIONS ARE SUBJECT TO ADJUSTMENT DUE TO UNFORESEEN CONDITIONS. ENGINEER SHALL BE NOTIFIED IMMEDIATELY TO APPROVE ANY ADJUSTMENTS. ENGINEER SHALL NOTIFY NHDOT DISTRICT ENGINEER OF ANY ADJUSTMENTS PRIOR TO INSTALL.
6. ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE RETURNED TO THE ORIGINAL CONDITIONS.
7. ALL SPLICE LOCATIONS COORDINATES PROVIDED ARE TO THE CENTER OF THE SPLICE PIT.
8. CONTRACTOR SHALL PERFORM ALL RESTORATION WORK AS REQUIRED IN ACCORDANCE WITH SPECIFICATIONS.
9. MINIMUM DEPTH OF COVER, AS MEASURED TO THE TOP OF CONCRETE SPLICE PIT, SHALL BE A MINIMUM OF 2'-0".
10. ALL OPEN TRENCHES AND EXCAVATIONS SHALL BE PLATED AT THE COMPLETION OF EACH DAYS WORK.
11. CONTRACTOR TO FIELD VERIFY ALL UTILITIES.
12. UTILITY SERVICES ARE NOT SHOWN AND SHALL BE FIELD LOCATED.
13. CONTRACTOR SHALL PROTECT IN PLACE EXISTING PIPES / UTILITIES AT OPEN EXCAVATION CROSSINGS.
14. WHEN EXCAVATING IN PROXIMITY OF EXISTING OR PAST FUEL SITES, ETC., COORDINATION THROUGH NHDES IS NECESSARY TO EVALUATE THE POTENTIAL OF CONTAMINATED SOILS BEING ENCOUNTERED DURING THE CONSTRUCTION.
15. WHEN EXCAVATING OR CONDUCTING WORK IN PROXIMITY OF EXISTING UTILITIES, CONTRACTOR RESPONSIBLE FOR PROTECTION AND MAINTENANCE OF EXISTING UTILITIES.
16. DETAILED SITE DEVELOPMENT PLANS INCLUDING GRADING AND SEDIMENTATION AND EROSION CONTROLS FOR TRENCH LOCATIONS OUTSIDE OF THE NHDOT RIGHT-OF-WAY ARE INCLUDED IN THE DES ALTERATION OF TERRAIN PERMIT APPLICATION.
17. TRENCH WIDTH MAY VARY FOR TRENCHES DEEPER THAN 5'. TRENCH DETAILS ON DRAWING ROT3C502 DEPICT THE POTENTIAL MAXIMUM WIDTH, BASED ON TRENCH DEPTH AND SITE SPECIFIC SOIL CONDITIONS.

NO.	REVISION	DATE	DRWN	CHKD	APPRV.
A	ISSUED FOR PERMIT	11/30/16	DGR	TDD	TMH
B	ISSUED FOR REVIEW	11/30/16	DGR	TDD	TMH

SGC Engineering, LLC
A member of the Gault Haglan Group
LIC NH

PAR ELECTRICAL CONTRACTORS, INC.

THE NORTHERN PASS
Transmission Business

B

NPT
ROT3-UNDERGROUND ALIGNMENT
GENERAL NOTES

DATE: 11/30/2016

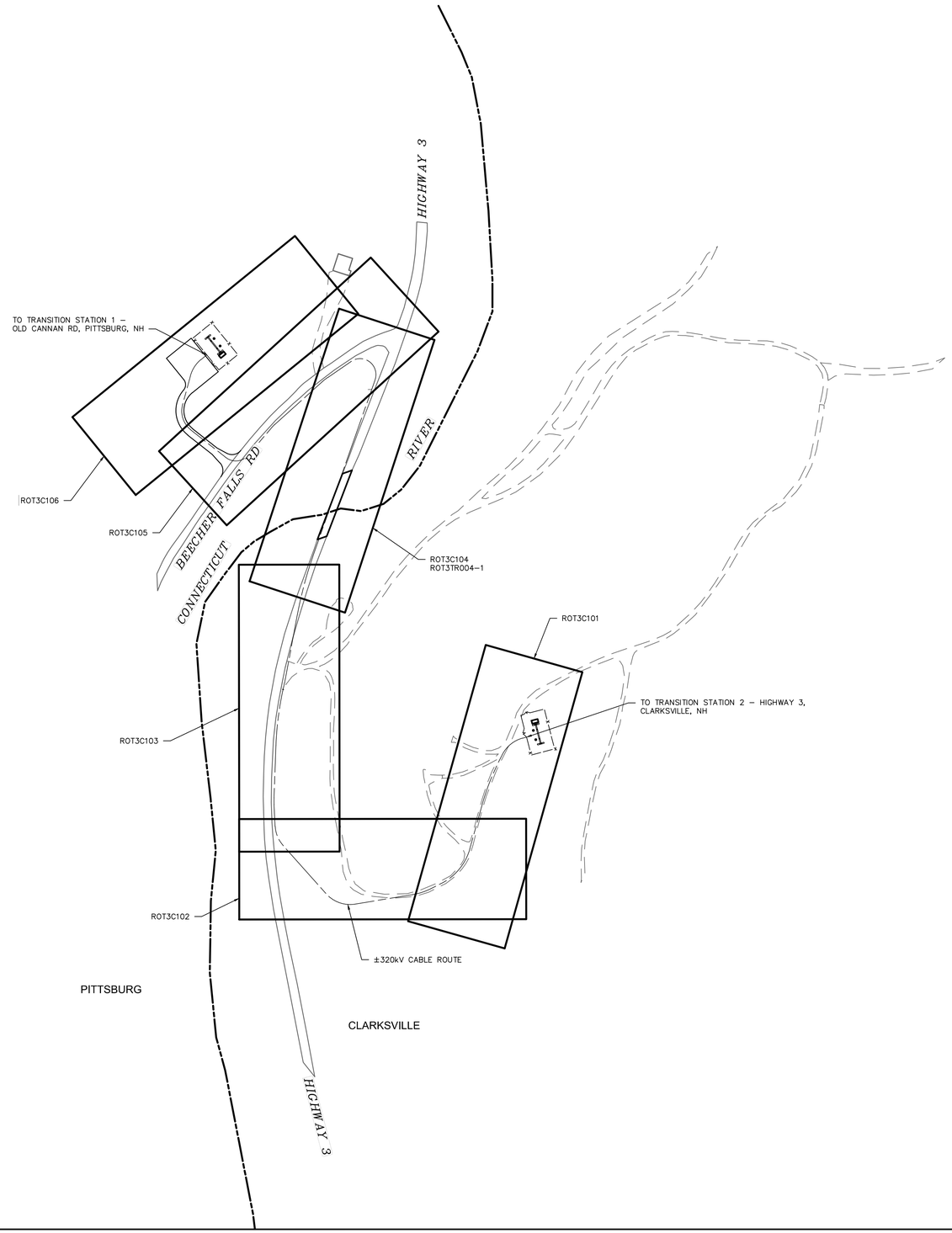
SCALE:

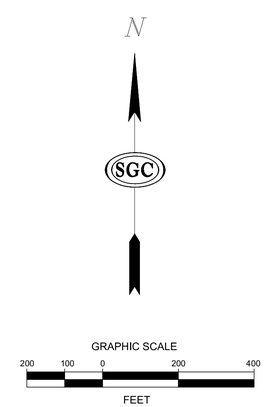
DES: TDD | CHK: TDD
DRW: DGR | APR: TMH

TOWN:

TRANSMISSION LINE:
ROT3

ROT3G001





PRELIMINARY - NOT FOR CONSTRUCTION

NO.	REVISION	DATE	DRWN	CHKD	APPRV.
B	ISSUED FOR PERMIT	11/30/16	DQR	TDD	TMH
A	ISSUED FOR REVIEW	11/7/16	DQR	TDD	TMH

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A member of the Stantec Engineer Group

PAR ELECTRICAL CONTRACTORS, INC.
A QUANTA SERVICES COMPANY

THE NORTHERN PASS
Transmission Business

B

NPT
ROT3–UNDERGROUND ALIGNMENT
ALIGNMENT KEY MAP

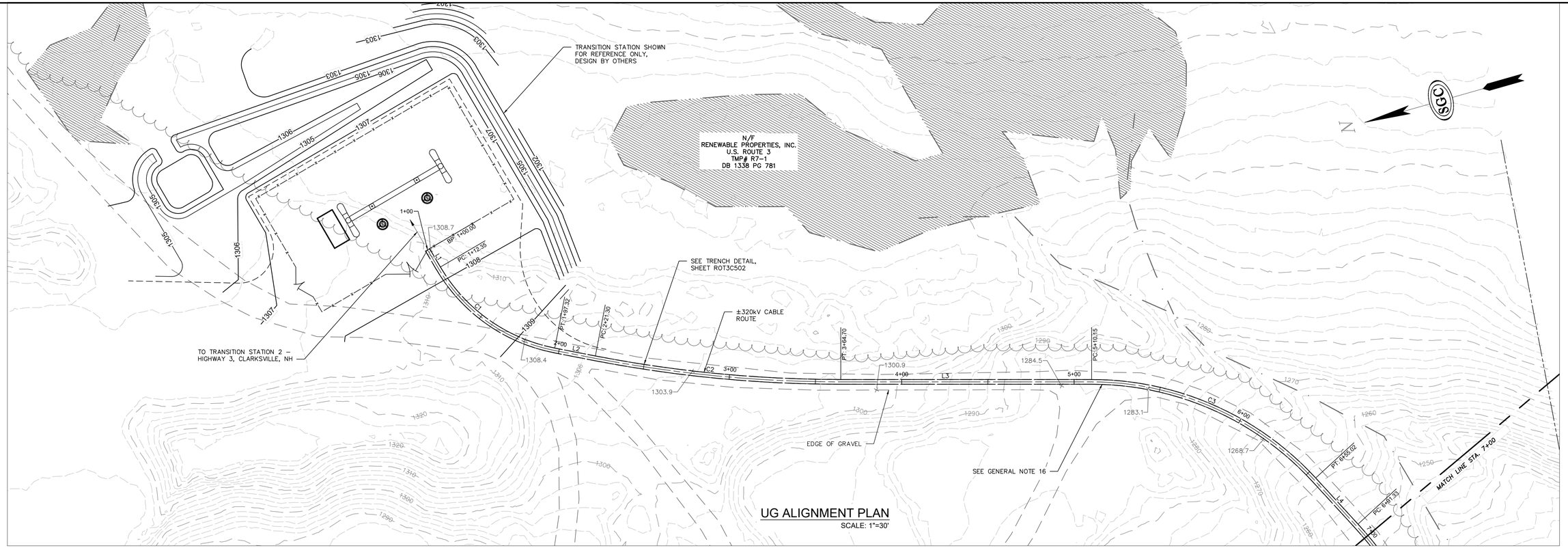
DATE: 11/30/2016
SCALE: 1" = 200'

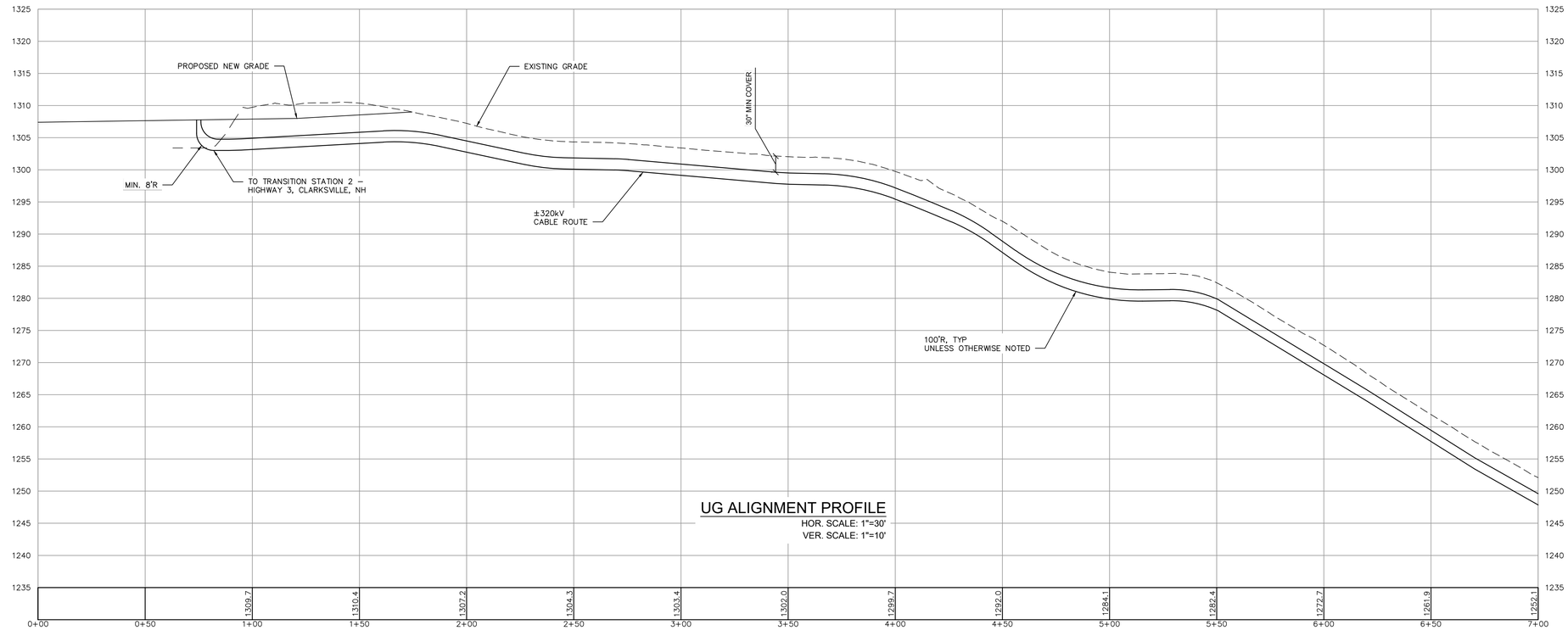
DES: TDD | CHK: TDD
DRW: DQR | APR: TMH

TOWN:

TRANSMISSION LINE:
ROT3

ROT3C100





UG ALIGNMENT PROFILE
HOR. SCALE: 1"=30'
VER. SCALE: 1"=10'

PRELIMINARY - NOT FOR CONSTRUCTION

NO.	REVISION	DATE	DRWN.	CHKD	APPRV.
B	ISSUED FOR PERMIT	11/30/16	DGR	TDD	TMH
A	ISSUED FOR REVIEW	11/7/16	DGR	TDD	TMH

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THE NORTHERN PASS
Transmission Business

B

NPT
ROT3–UNDERGROUND ALIGNMENT
STA 1+00 TO 7+00

DATE: 11/30/2016

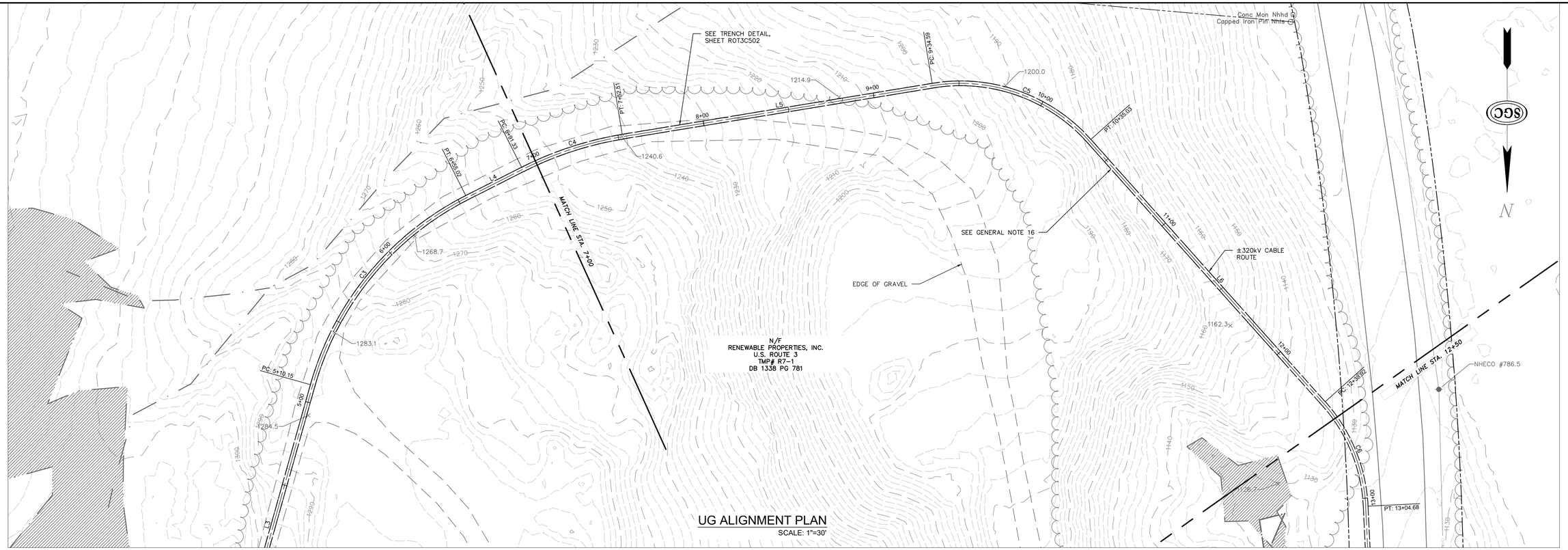
SCALE: H: 1"=30' V: 1"=10'

DES: TDD | CHK: TDD
DRW: DGR | APR: TMH

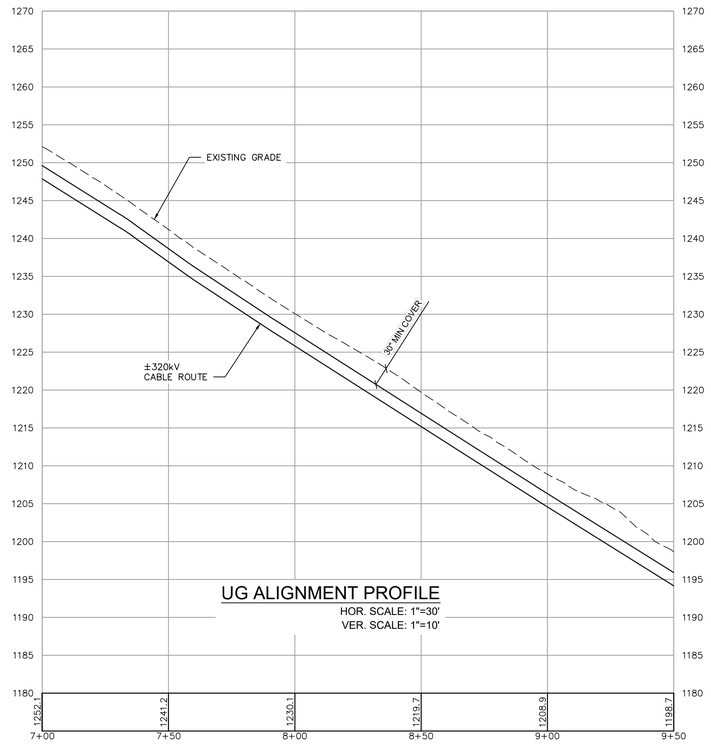
TOWN:
CLARKSVILLE

TRANSMISSION LINE:
ROT3

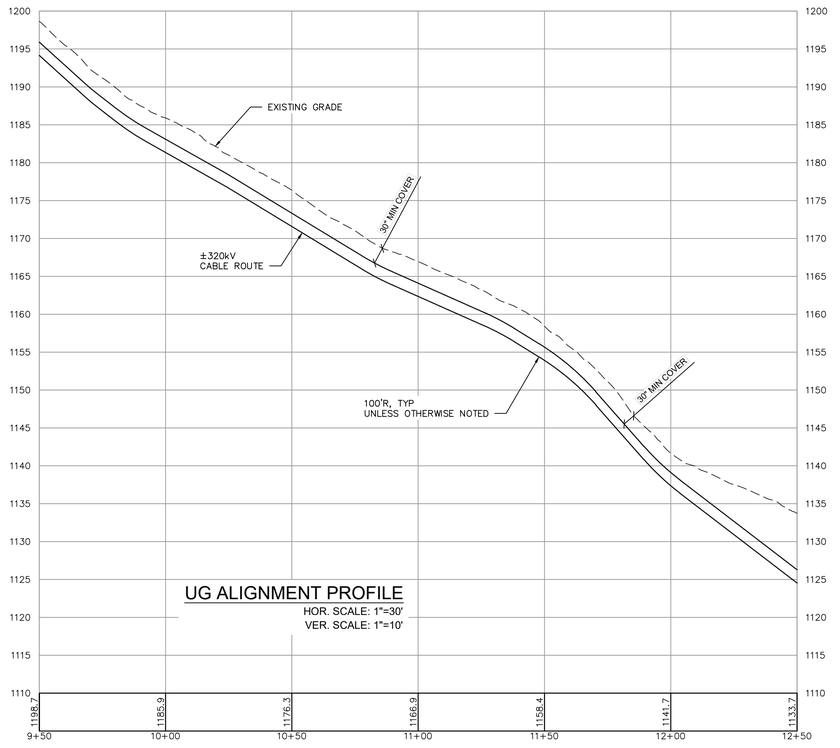
ROT3C101



UG ALIGNMENT PLAN
SCALE: 1"=30'



UG ALIGNMENT PROFILE
HOR. SCALE: 1"=30'
VER. SCALE: 1"=10'



UG ALIGNMENT PROFILE
HOR. SCALE: 1"=30'
VER. SCALE: 1"=10'

PRELIMINARY - NOT FOR CONSTRUCTION

NO.	REVISION	DATE	DRWN.	CHKD	APPRV.
B	ISSUED FOR PERMIT	11/30/16	DGR	TDD	TMH
A	ISSUED FOR REVIEW	11/7/16	DGR	TDD	TMH

SGC Engineering, LLC
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PAR ELECTRICAL CONTRACTORS, INC.

THE NORTHERN PASS
Transmission Business

B

NPT
ROT3–UNDERGROUND ALIGNMENT
STA 7+00 TO 12+50

DATE: 11/30/2016
SCALE: H: 1"=30', V: 1"=10'

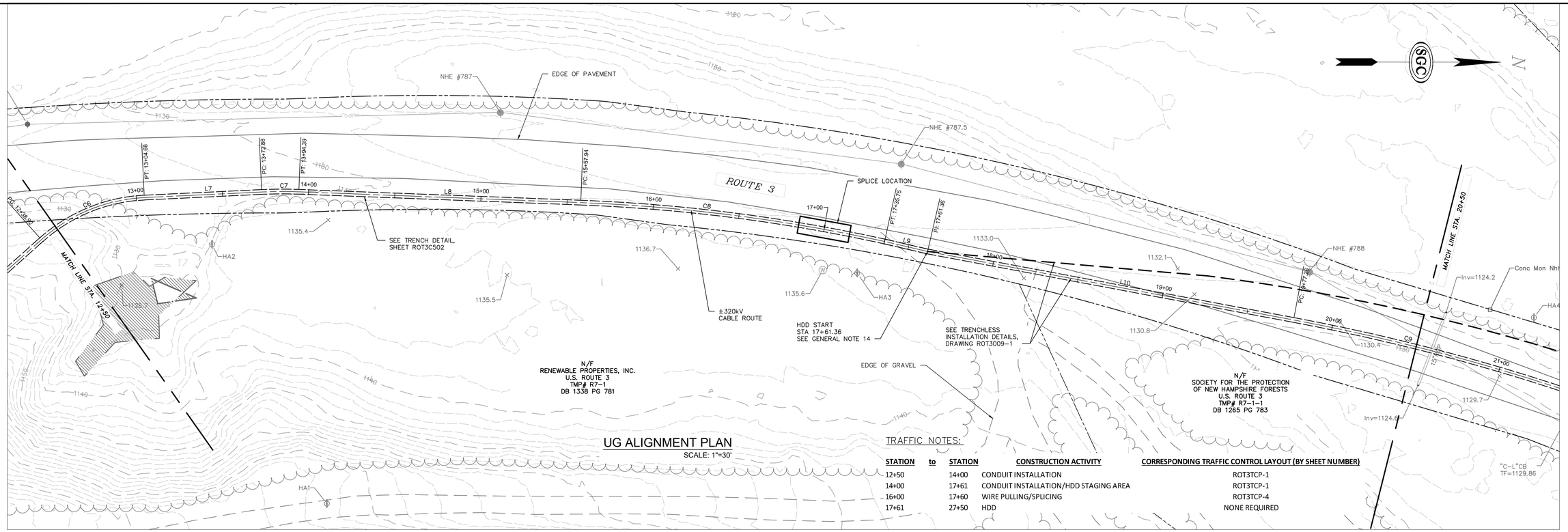
DES: TDD | CHK: TDD
DRN: DGR | APR: TMH

TOWN:
CLARKSVILLE

TRANSMISSION LINE:
ROT3

ROT3C102

PRELIMINARY - NOT FOR CONSTRUCTION

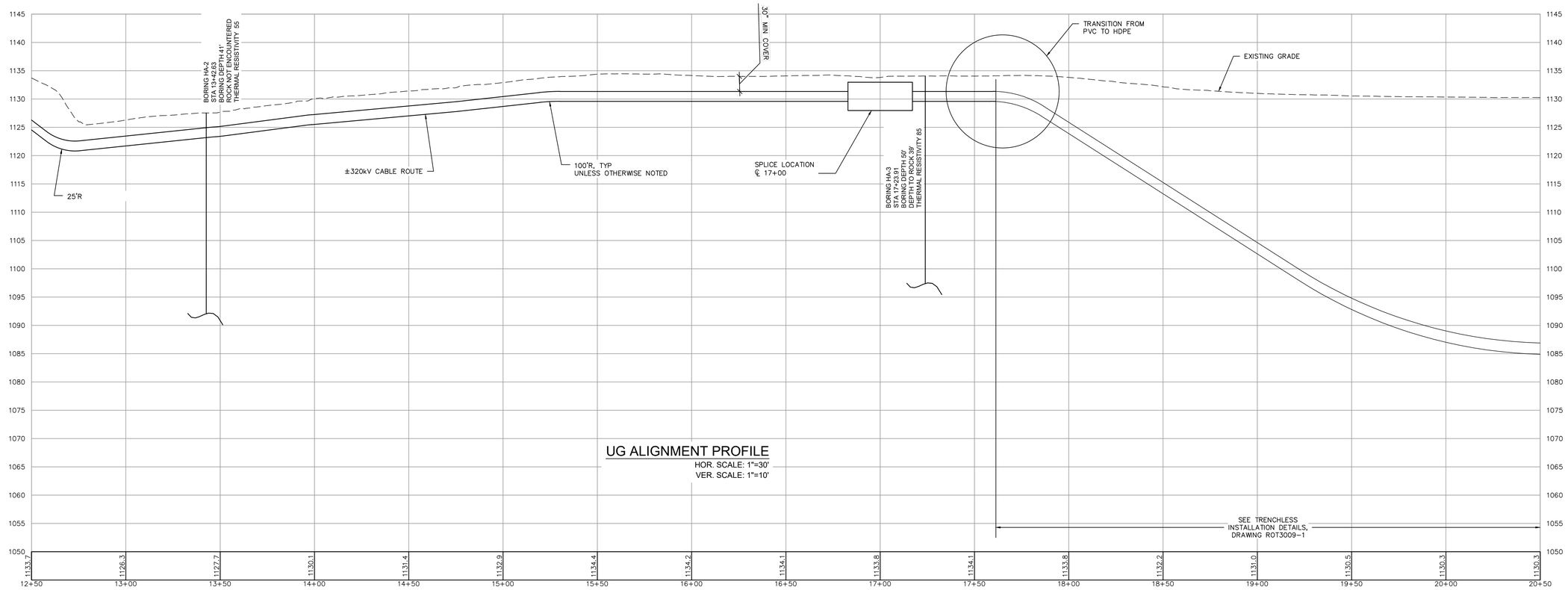


UG ALIGNMENT PLAN

SCALE: 1"=30'

TRAFFIC NOTES:

STATION	to	STATION	CONSTRUCTION ACTIVITY	CORRESPONDING TRAFFIC CONTROL LAYOUT (BY SHEET NUMBER)
12+50		14+00	CONDUIT INSTALLATION	ROT3TCP-1
14+00		17+61	CONDUIT INSTALLATION/HDD STAGING AREA	ROT3TCP-1
16+00		17+60	WIRE PULLING/SPLICING	ROT3TCP-4
17+61		27+50	HDD	NONE REQUIRED



UG ALIGNMENT PROFILE

HOR. SCALE: 1"=30'
VER. SCALE: 1"=10'

NO.	REVISION	DATE	DSGN.	CHKD	APPRV.
B	ISSUED FOR PERMIT	11/30/16	DGR	TDD	TMH
A	ISSUED FOR REVIEW	11/30/16	DGR	TDD	TMH

SGC Engineering, LLC
A member of the Haydn Region Group

PAR ELECTRICAL CONTRACTORS, INC.
A MYR GROUP COMPANY

THE NORTHERN PASS
Transmission Business

B

NPT
ROT3-UNDERGROUND ALIGNMENT
STA 12+50 TO 20+50

DATE: 11/30/2016
SCALE: H: 1"=30', V: 1"=10'

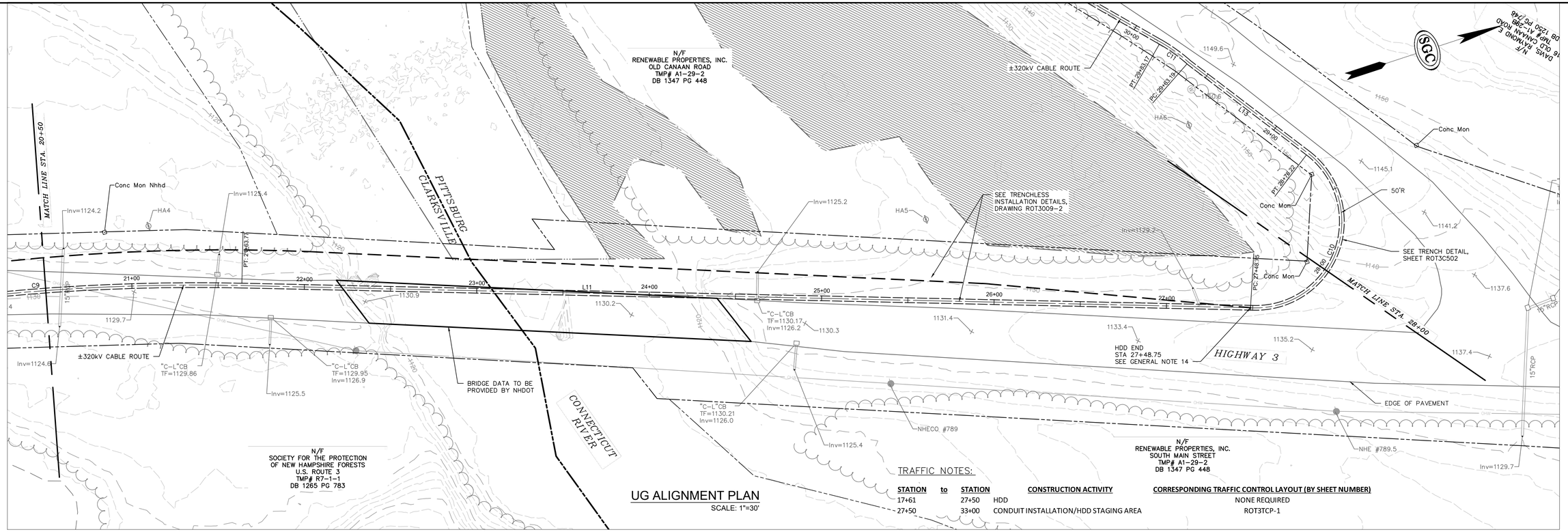
DES: TDD | CHK: TDD
DRW: DGR | APR: TMH

TOWN: CLARKSVILLE

TRANSMISSION LINE: ROT3

ROT3C103

PRELIMINARY - NOT FOR CONSTRUCTION

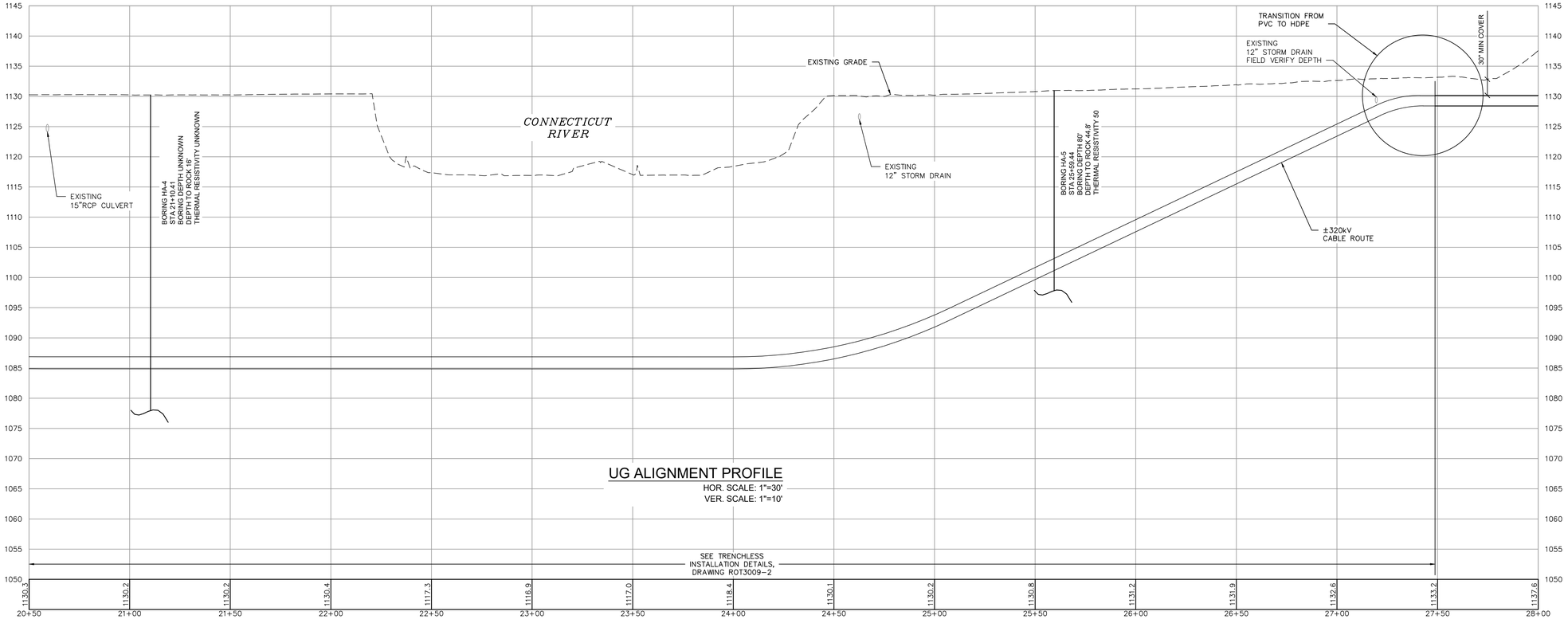


UG ALIGNMENT PLAN

SCALE: 1"=30'

TRAFFIC NOTES:

STATION	to	STATION	CONSTRUCTION ACTIVITY	CORRESPONDING TRAFFIC CONTROL LAYOUT (BY SHEET NUMBER)
17+61		27+50	HDD	NONE REQUIRED
27+50		33+00	CONDUIT INSTALLATION/HDD STAGING AREA	ROT3TCP-1



UG ALIGNMENT PROFILE

HOR. SCALE: 1"=30'
VER. SCALE: 1"=10'

NO.	REVISION	DRWN.	CHKD	APPRV.
A	ISSUED FOR PERMIT	DGR	TDD	TMH
B	ISSUED FOR REVIEW	DGR	TDD	TMH
	DATE	11/30/16	11/30/16	

SGC Engineering, LLC
A member of the Gayich Magellan Group

PAR ELECTRICAL CONTRACTORS, INC.

THE NORTHERN PASS
Transmission Business

B

NPT
ROT3-UNDERGROUND ALIGNMENT
STA 20+50 TO 28+00

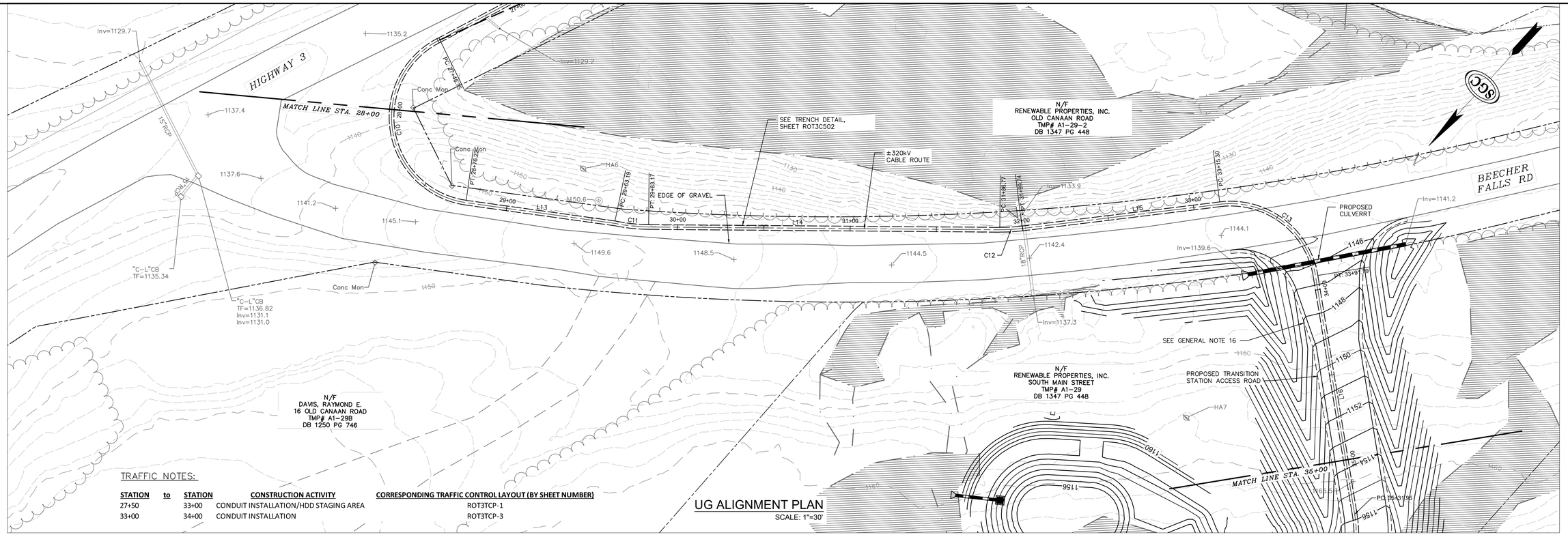
DATE: 11/30/2016
SCALE: H: 1"=30', V: 1"=10'

DES: TDD | CHK: TDD
DRW: DGR | APR: TMH

TOWN:
CLARKSVILLE/PITTSBURG

TRANSMISSION LINE:
ROT3

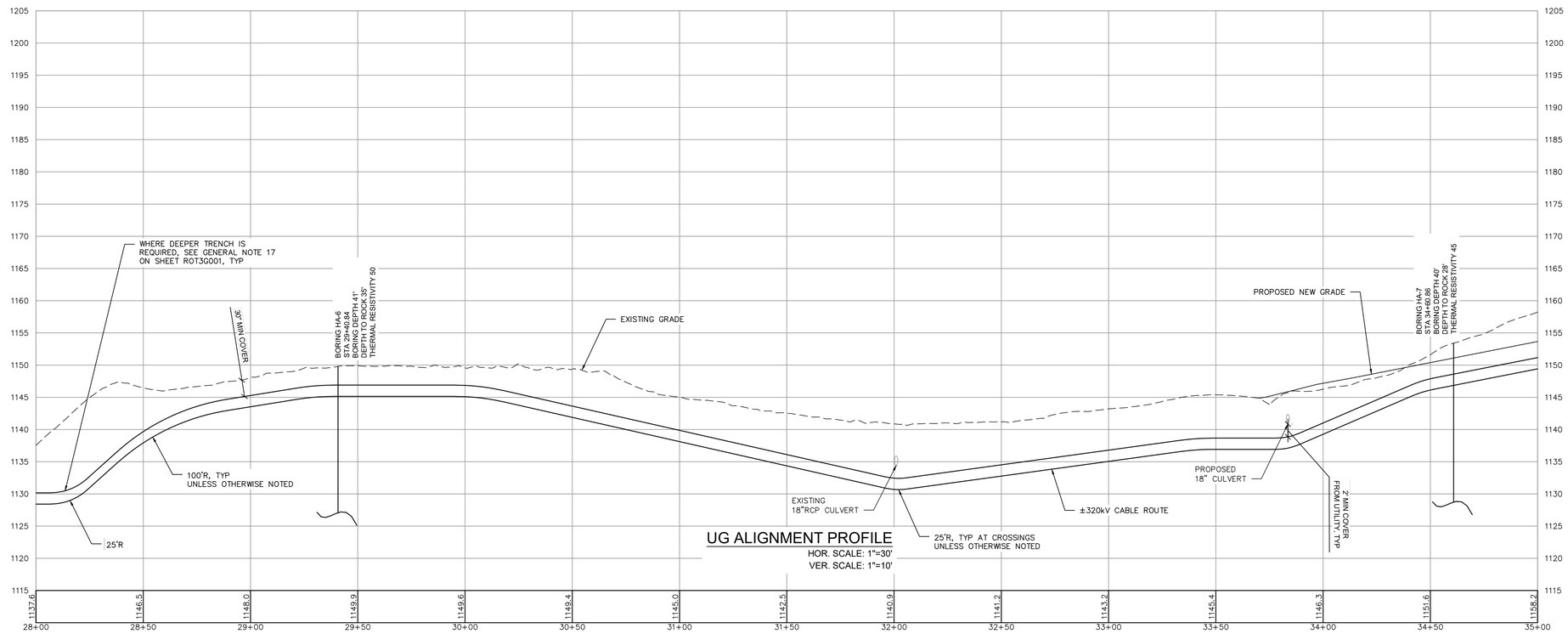
ROT3C104



TRAFFIC NOTES:

STATION	to	STATION	CONSTRUCTION ACTIVITY	CORRESPONDING TRAFFIC CONTROL LAYOUT (BY SHEET NUMBER)
27+50		33+00	CONDUIT INSTALLATION/HDD STAGING AREA	ROT3TCP-1
33+00		34+00	CONDUIT INSTALLATION	ROT3TCP-3

UG ALIGNMENT PLAN
SCALE: 1"=30'



UG ALIGNMENT PROFILE
HOR. SCALE: 1"=30'
VER. SCALE: 1"=10'

PRELIMINARY - NOT FOR CONSTRUCTION

NO.	REVISION	DATE	DRWN.	CHKD	APPRV.
A	ISSUED FOR PERMIT	11/30/16	DGR	TDD	TMH
B	ISSUED FOR PERMIT	1/17/17	DGR	TDD	TMH

SGC Engineering, LLC
A member of the Lloyd's Register Group

PAR ELECTRICAL CONTRACTORS, INC.
A QUANTA SERVICES COMPANY

THE NORTHERN PASS
Transmission Business

B

NPT
ROT3-UNDERGROUND ALIGNMENT
STA 28+00 TO 35+00

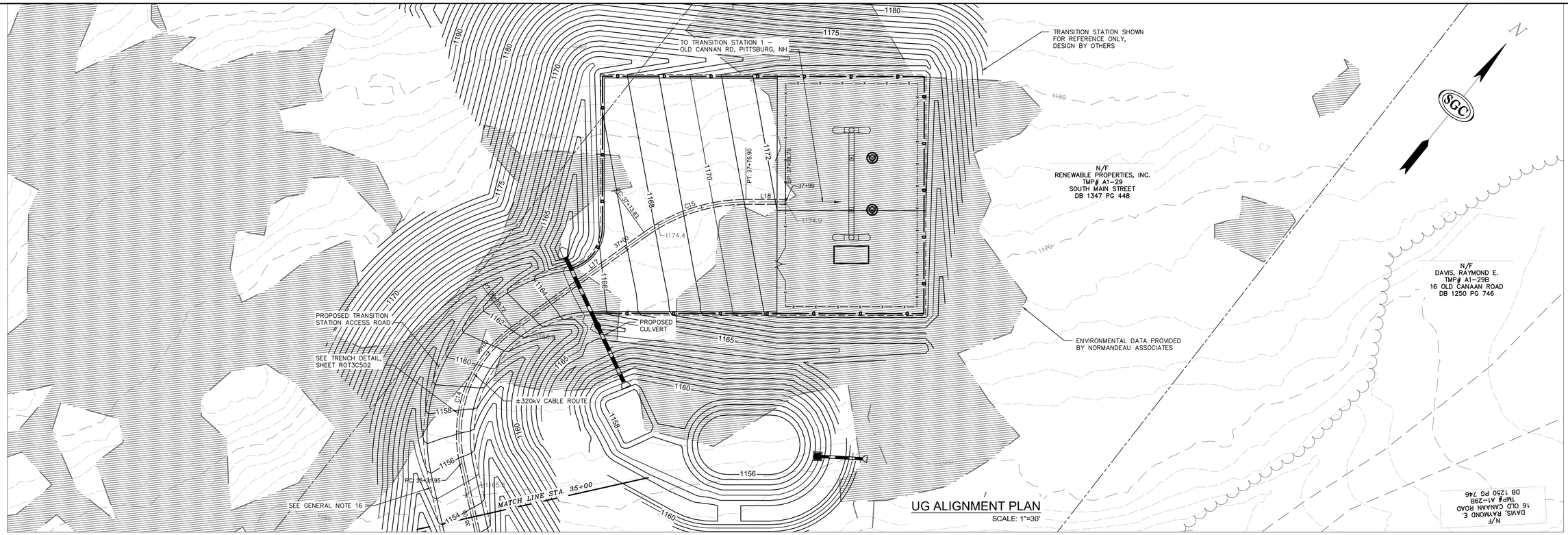
DATE: 11/30/2016
SCALE: H 1"=30', V 1"=10'

DES: TDD | CHK: TDD
DRW: DGR | APR: TMH

TOWN: PITTSBURG

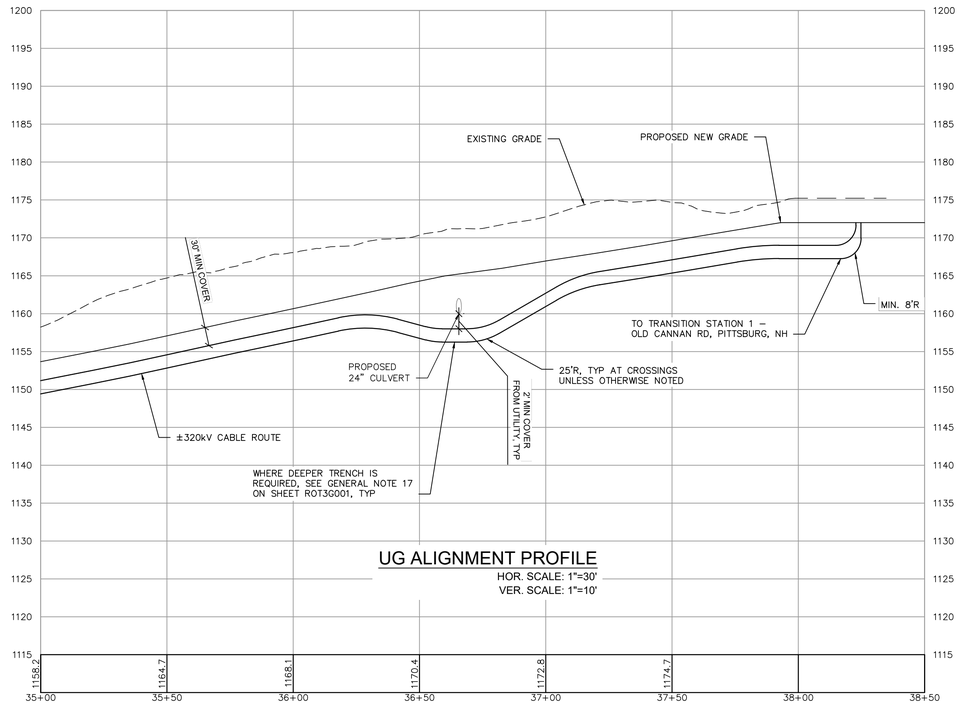
TRANSMISSION LINE: ROT3

ROT3C105



UG ALIGNMENT PLAN

SCALE: 1"=30'



UG ALIGNMENT PROFILE

HOR. SCALE: 1"=30'
VER. SCALE: 1"=10'

PRELIMINARY - NOT FOR CONSTRUCTION

NO.	REVISION	DATE	DRWN.	CHKD	APPRV.
A	ISSUED FOR PERMIT	11/30/16	DGP	TDD	TMH
B	ISSUED FOR REVIEW	12/20/16	DGP	TDD	TMH

SGC Engineering, LLC
A member of the Stantec Engineers Group

PAR ELECTRICAL CONTRACTORS, INC.

THE NORTHERN PASS
Transmission Business

B

NPT
ROT3–UNDERGROUND ALIGNMENT
STA 35+00 TO 37+98.79

DATE: 11/30/2016
SCALE: H: 1"=30', V: 1"=10'

DES: TDD | CHK: TDD
DRW: DGP | APR: TMH

TOWN: PITTSBURG

TRANSMISSION LINE: ROT3

ROT3C106

ROT3 ALIGNMENT LINE TABLE			
LINE	START STATION	LENGTH (FT)	BEARING
L1	1+00.00	12.35	S75°20'58"W
L2	1+97.32	23.97	S26°39'42"W
L3	3+64.70	145.45	S15°42'22"W
L4	6+55.02	36.31	S63°08'17"W
L5	7+52.51	182.09	S80°39'51"W
L6	10+35.03	203.89	N41°47'22"W
L7	13+04.68	68.19	N02°48'37"W
L8	13+94.39	163.55	N02°07'25"E
L9	17+35.75	25.61	N13°02'36"E
L10	17+61.36	215.90	N10°31'18"E
L11	21+63.77	584.98	N19°25'37"E
L13	28+76.22	86.97	S55°27'46"W
L14	29+83.17	203.60	S48°00'45"W
L15	31+99.74	115.56	S40°34'56"W
L16	33+91.79	140.16	N51°45'51"W
L17	36+19.72	94.11	N15°17'26"E
L18	37+75.90	22.89	N50°51'11"E

ROT3 ALIGNMENT CURVE TABLE									
CURVE	RADIUS (FT)	LENGTH (FT)	TANGENT (FT)	CHORD LENGTH (FT)	CHORD BEARING	DELTA	START STATION	END STATION	PI STATION
C1	100	84.98	45.24	82.44	S51° 00' 20.18"W	048.6879	1+12.35	1+97.32	1+57.59
C2	750	143.41	71.92	143.19	S21° 11' 02.07"W	010.9555	2+21.30	3+64.70	2+93.22
C3	175	144.87	76.88	140.77	S39° 25' 19.60"W	047.4319	5+10.15	6+55.02	5+87.03
C4	200	61.18	30.83	60.94	S71° 54' 04.09"W	017.5261	6+91.33	7+52.51	7+22.16
C5	100	100.44	54.91	96.27	N70° 33' 45.37"W	057.5464	9+34.59	10+35.03	9+89.51
C6	97	65.75	34.20	64.49	N22° 17' 59.62"W	038.9790	12+38.92	13+04.68	12+73.13
C7	250	21.53	10.77	21.52	N00° 20' 36.17"W	004.9340	13+72.86	13+94.39	13+83.63
C8	1000	177.81	89.14	177.58	N07° 13' 03.12"E	010.1878	15+57.94	17+35.75	16+47.08
C9	1200	186.51	93.44	186.32	N14° 58' 27.90"E	008.9053	19+77.26	21+63.77	20+70.71
C10	50	127.47	163.89	95.65	N51° 30' 10.42"W	146.0688	27+48.75	28+76.22	29+12.65
C11	100	19.98	10.03	19.95	S53° 44' 15.45"W	011.4502	29+63.19	29+83.17	29+73.21
C12	100	12.97	6.49	12.96	S44° 17' 50.37"W	007.4304	31+86.77	31+99.74	31+93.26
C13	50	76.49	47.99	69.25	S84° 24' 32.17"W	087.6536	33+15.30	33+91.79	33+63.29
C14	75	87.77	49.69	82.85	N18° 14' 12.82"W	067.0547	35+31.95	36+19.72	35+81.64
C15	100	62.07	32.07	61.08	N33° 04' 18.21"E	035.5625	37+13.83	37+75.90	37+45.90

PRELIMINARY - NOT FOR CONSTRUCTION

NO.	REVISION	DATE	DRWN	CHKD	APPRV
A	ISSUED FOR PERMIT	11/20/16	DGR	TDD	TMH
B	ISSUED FOR REVIEW	1/19/16	TDD	TMH	

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PAR ELECTRICAL CONTRACTORS, INC.
A QUANTA SERVICES COMPANY

THE NORTHERN PASS
Transmission Business

B

NPT
ROT3-UNDERGROUND ALIGNMENT
ALIGNMENT TABLES

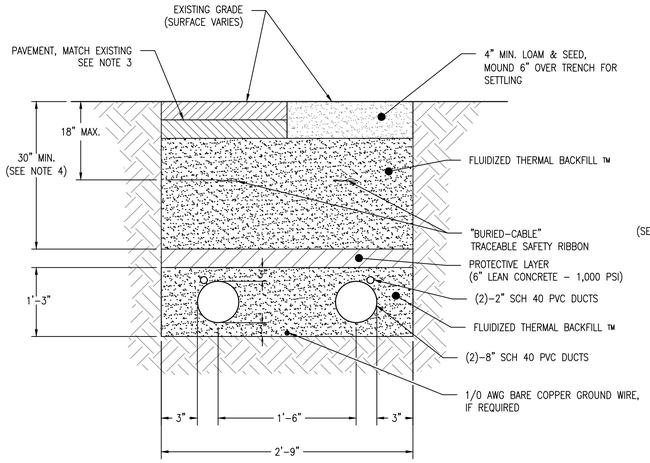
DATE: 11/20/2016
SCALE: NOT TO SCALE

DES: TDD | CHK: TDD
DRW: DGR | APR: TMH

TOWN:

TRANSMISSION LINE:
ROT3

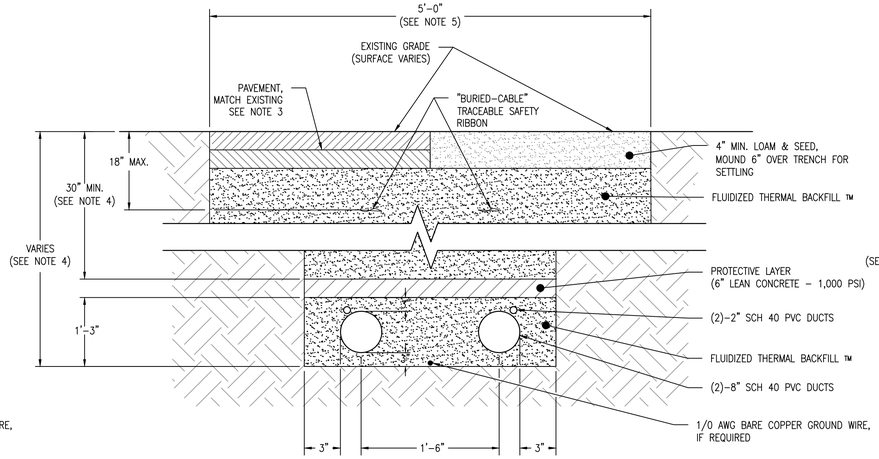
ROT3C501



NOTES:
1. CONDUITS TO BE ARRANGED USING DUCTBANK SPACER MODEL #2882W9434-2 BY UNDERGROUND DEVICES OR EQUAL.
2. DUCT SPACERS TO BE LOCATED EVERY 5 FEET.
3. PAVING TO MEET NHDOT STANDARDS. SEE PAVEMENT PATCH DETAIL SHEET WMNFC504.
4. DEPTH VARIES, SEE PROFILE DRAWINGS. 48" MINIMUM COVER REQUIRED WHERE TRENCH IS INSTALLED BENEATH ROADSIDE DITCHES.

DETAIL 1
TYPE 1 - ±320 kV CABLE TRENCH CROSS SECTION

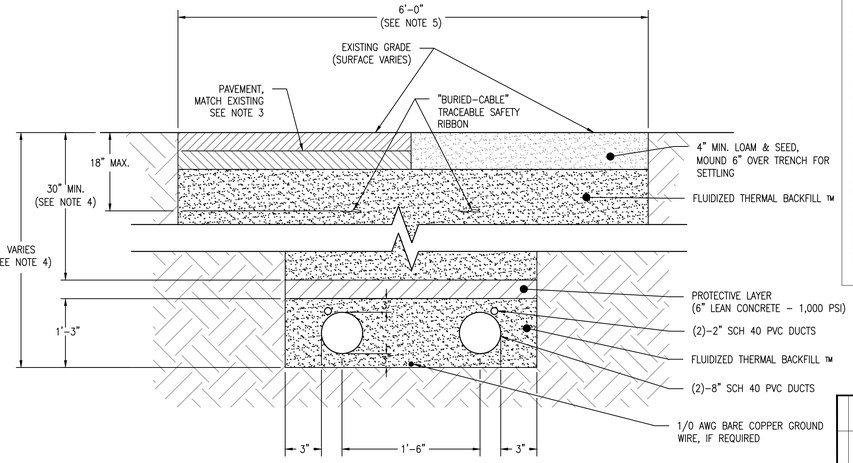
(NOT TO SCALE)



NOTES:
1. CONDUITS TO BE ARRANGED USING DUCTBANK SPACER MODEL #2882W9434-2 BY UNDERGROUND DEVICES OR EQUAL.
2. DUCT SPACERS TO BE LOCATED EVERY 5 FEET.
3. PAVING TO MEET NHDOT STANDARDS. SEE PAVEMENT PATCH DETAIL SHEET WMNFC504.
4. DEPTH VARIES, SEE PROFILE DRAWINGS. TRENCHES 5'-8' DEEP SHALL BE 5' WIDE.
5. TRENCH WIDTH AT THE SURFACE IS MEANT TO DEPICT POTENTIAL MAXIMUM WIDTH BASED ON SOIL CONDITIONS AND DEPTH OF TRENCH.

DETAIL 1A
TYPE 1 - ±320 kV CABLE TRENCH CROSS SECTION (5'-8' DEEP)

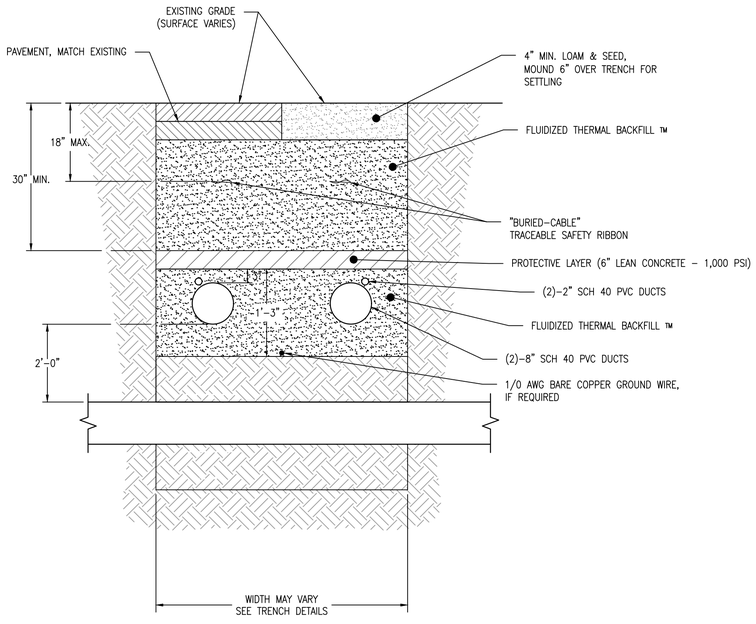
(NOT TO SCALE)



NOTES:
1. CONDUITS TO BE ARRANGED USING DUCTBANK SPACER MODEL #2882W9434-2 BY UNDERGROUND DEVICES OR EQUAL.
2. DUCT SPACERS TO BE LOCATED EVERY 5 FEET.
3. PAVING TO MEET NHDOT STANDARDS. SEE PAVEMENT PATCH DETAIL SHEET WMNFC504.
4. DEPTH VARIES, SEE PROFILE DRAWINGS. TRENCHES 8' DEEP OR MORE SHALL BE 6' WIDE.
5. TRENCH WIDTH AT THE SURFACE IS MEANT TO DEPICT POTENTIAL MAXIMUM WIDTH BASED ON SOIL CONDITIONS AND DEPTH OF TRENCH.

DETAIL 1B
TYPE 1 - ±320 kV CABLE TRENCH CROSS SECTION (8'+ DEEP)

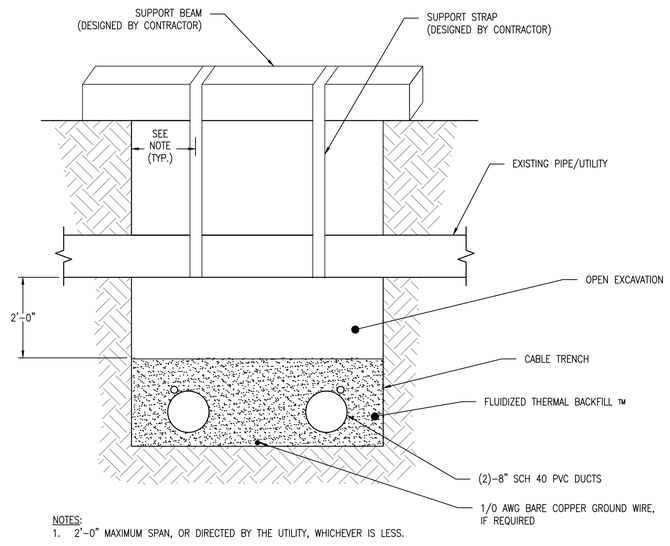
(NOT TO SCALE)



NOTES:
1. CONTRACTOR TO FIELD VERIFY EXISTING UTILITY INVERTS.

DETAIL 2
CABLE TRENCH CROSSING SECTION (W/ UTILITY BELOW)

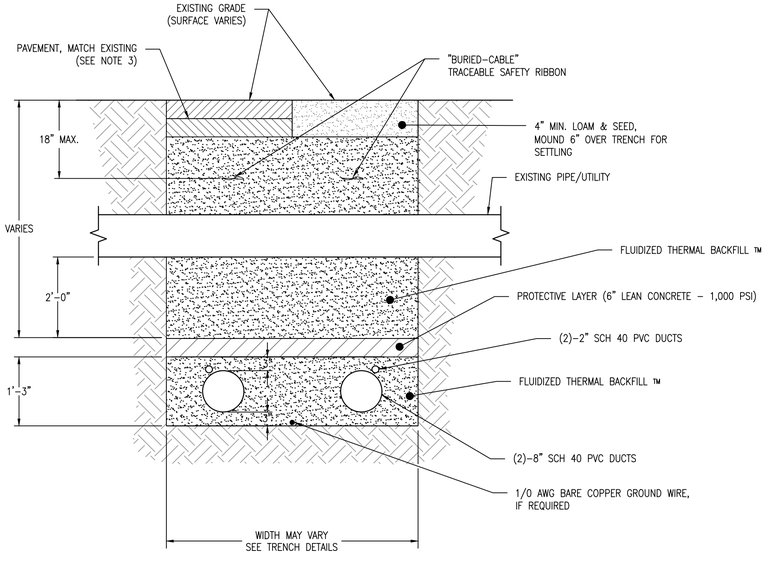
(NOT TO SCALE)



NOTES:
1. 2'-0" MAXIMUM SPAN, OR DIRECTED BY THE UTILITY, WHICHEVER IS LESS.

DETAIL 3
TYPICAL EXISTING UTILITY SUPPORT DETAILS

(NOT TO SCALE)



NOTES:
1. CONTRACTOR TO FIELD VERIFY EXISTING UTILITY INVERTS.

DETAIL 4
CABLE TRENCH CROSSING SECTION (W/ UTILITY ABOVE)

(NOT TO SCALE)

PRELIMINARY - NOT FOR CONSTRUCTION

NO.	REVISION	DATE	DRWN	CHKD	APPRV.
B	ISSUED FOR PERMIT	11/30/16	DGR	TDD	TMH
A	ISSUED FOR REVIEW	11/7/16	DGR	TDD	TMH

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THE NORTHERN PASS
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NPT
ROT3-UNDERGROUND ALIGNMENT
CABLE TRENCH DETAILS

DATE: 11/30/2016
SCALE: NOT TO SCALE

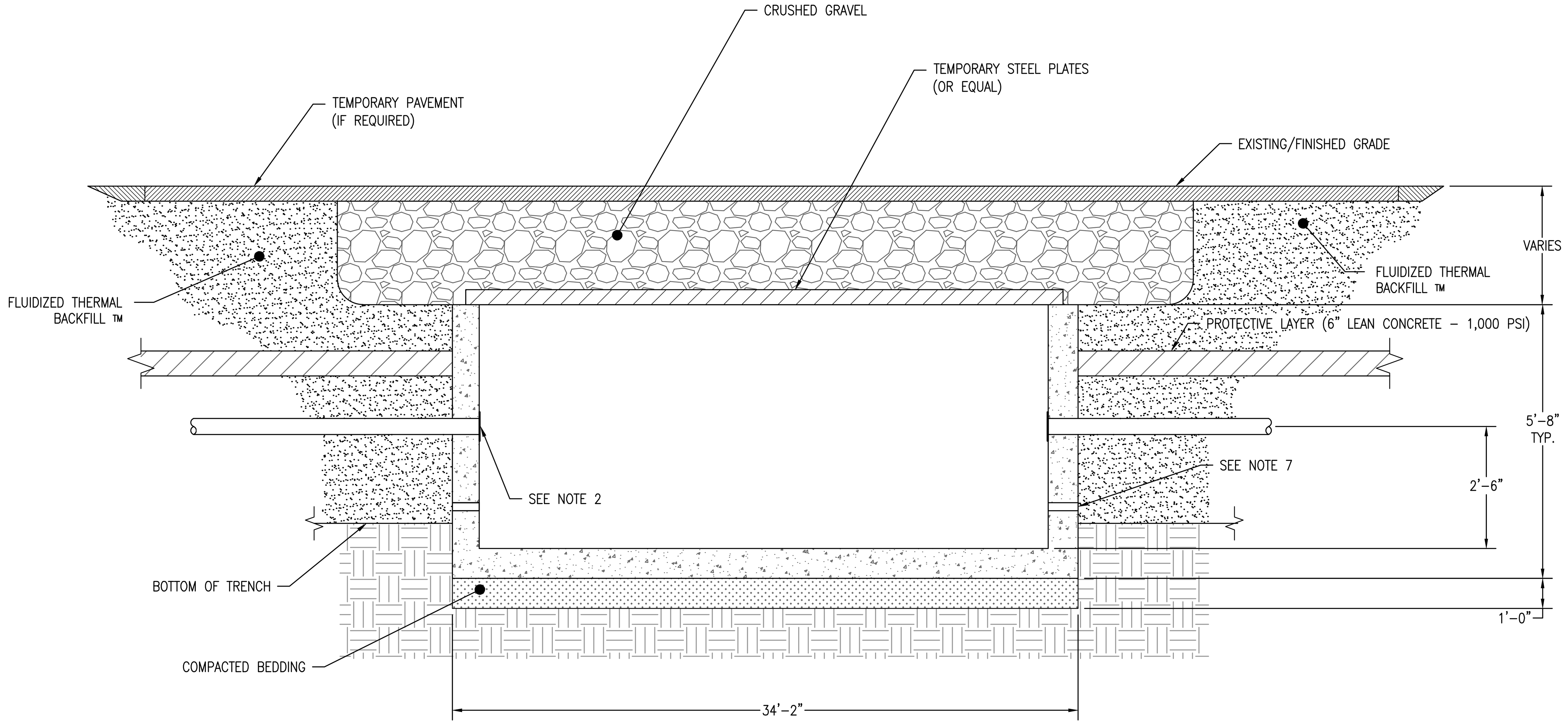
DES: TDD	CHK: TDD
DRW: DGR	APR: TMH

TOWN:

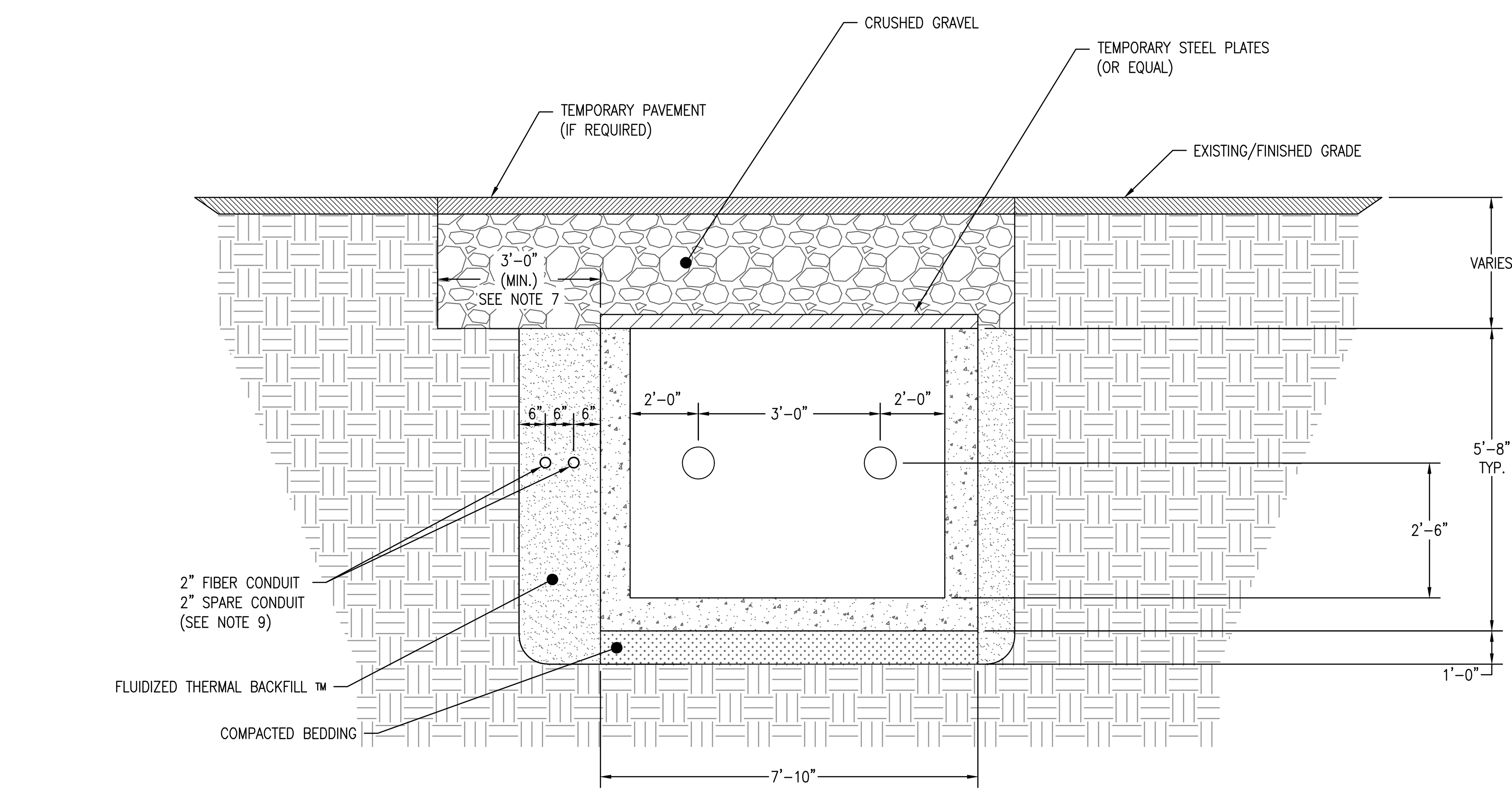
TRANSMISSION LINE:
ROT3

WMNFC502

PRELIMINARY - NOT FOR CONSTRUCTION



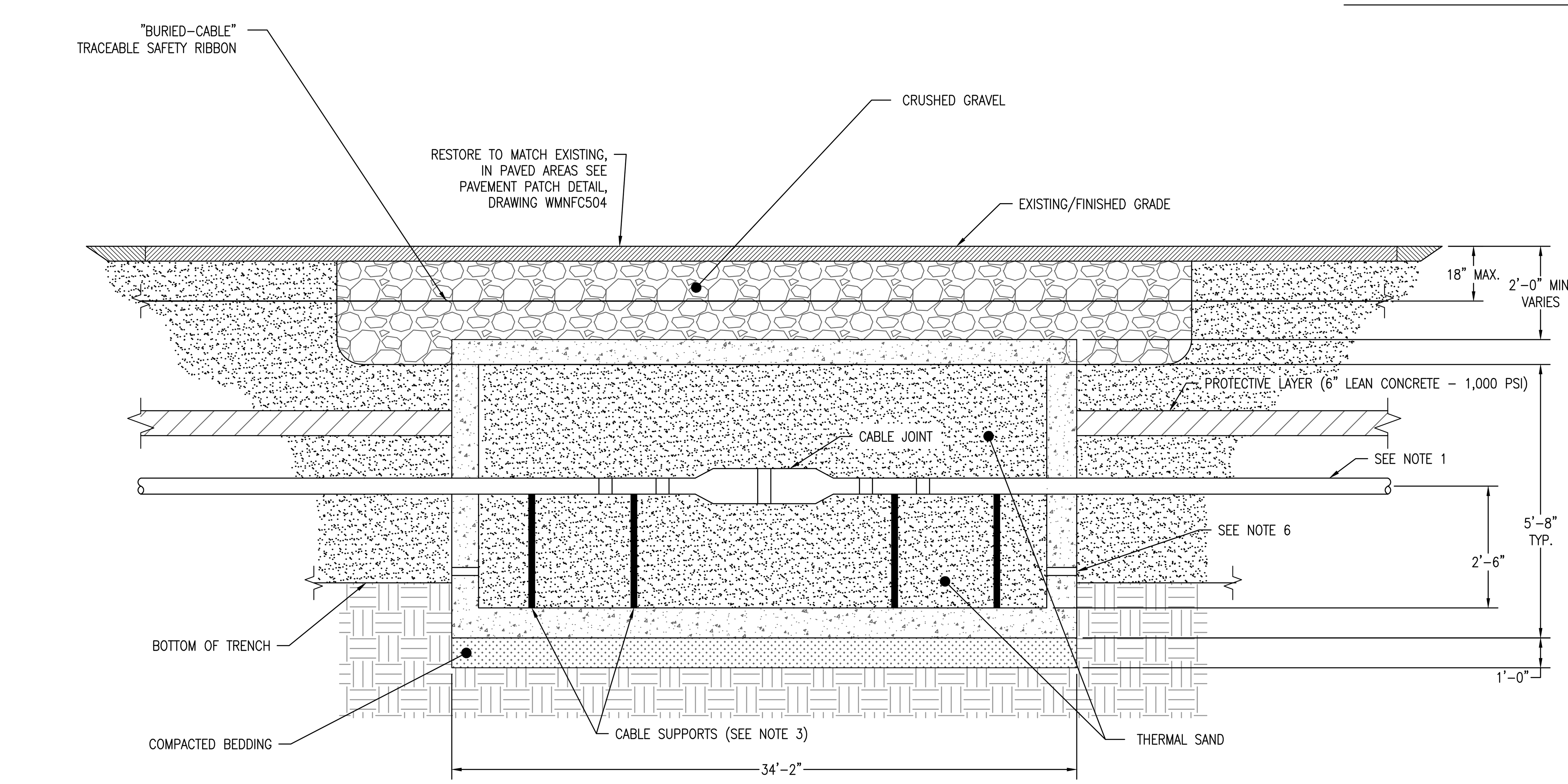
SIDE VIEW
(NOT TO SCALE)



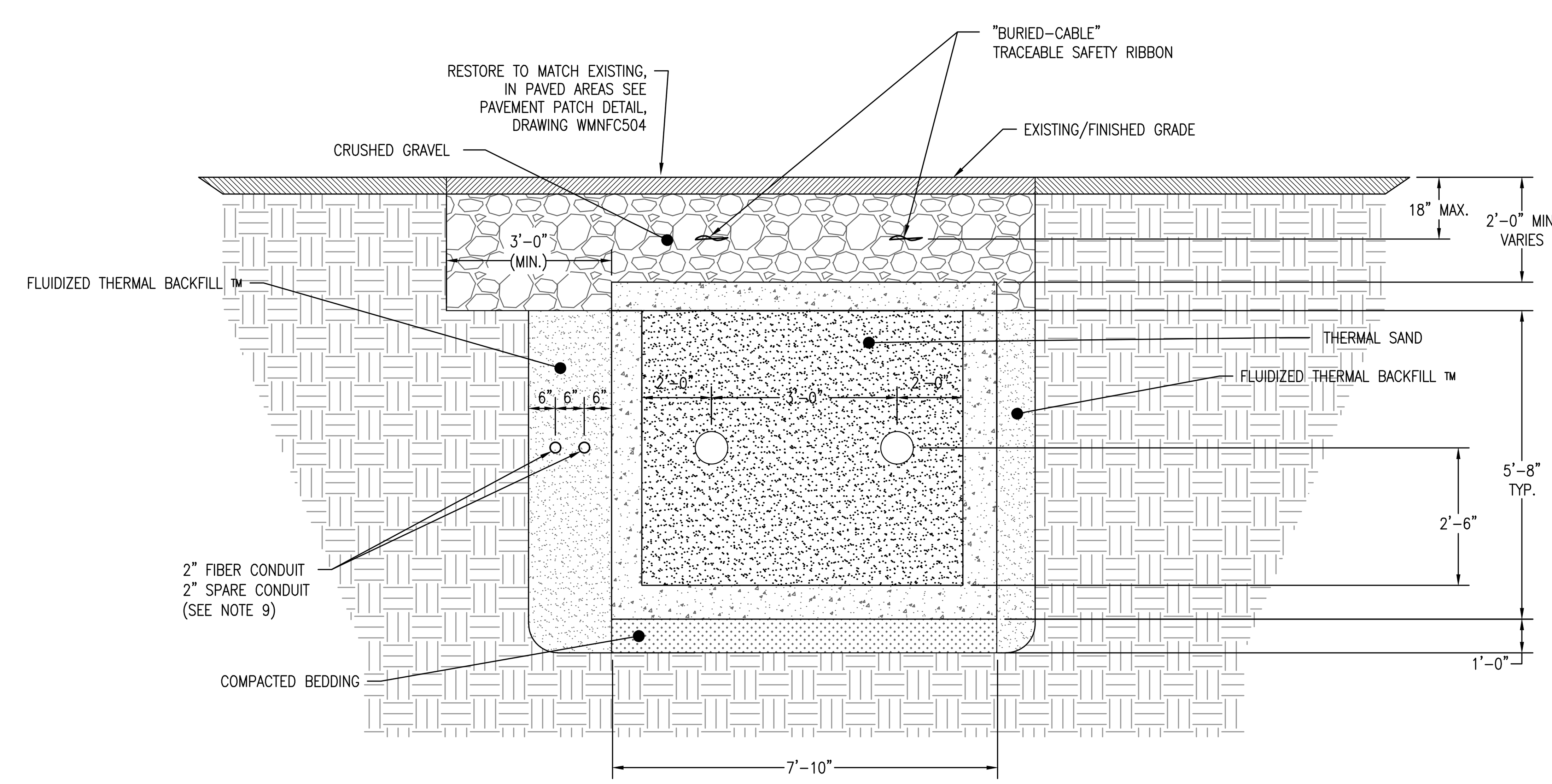
END VIEW
(NOT TO SCALE)

NOTES:
1. FOLLOWING INSTALLATION OF SPLICE PITS AND CONDUITS, IF CABLE PULLING OPERATIONS ARE NOT READY TO COMMENCE, STEEL PLATES (OR EQUAL) SHALL BE PLACED OVER THE CONCRETE PIT. PIT SHALL BE BACKFILLED TO GRADE. TEMPORARY PAVEMENT MAY BE REQUIRED.
2. ALL CONDUITS SHALL BE FURNISHED WITH BELL ENDS AT ENTRANCE TO PITS.
3. EACH END OF SPLICE PIT SHALL INCLUDE CABLE PULLING EYES. PULLING EYES SHALL BE CAPABLE OF WITHSTANDING MAXIMUM PULLING FORCE.
4. CONTRACTOR SHALL SUBMIT SHOP DRAWING OF PROPOSED CONCRETE PIT PRIOR TO CONSTRUCTION.
5. WITHIN AREAS TO BE PAVED, CRUSHED GRAVEL, STANDARD SPECIFICATIONS SECTION 304, OR APPROVED EQUAL TO THE EXISTING GRAVEL COURSE, SHALL BE PLACED IN LAYERS NOT EXCEEDING SIX (6) INCHES COMPACTED THICKNESS, AND THOROUGHLY COMPACTED.
6. ADDITIONAL 3' BENCH TO BE PROVIDED AT TOP OF PIT (ONE SIDE) FOR SPLICE CONTAINER.
7. ADDITIONAL PENETRATIONS REQUIRED AT LINK BOX LOCATIONS, SEE DETAIL 9.
8. ALL PENETRATIONS TO BE SEALED WITH POLYWATER FST DUCT SEALANT OR EQUAL.
9. ORIENTATION OF FIBER CONDUITS OUTSIDE SPLICE PIT MAY VARY DEPENDING ON FIELD CONDITIONS.

DETAIL 5
±320 kV CABLE SPLICE PIT INSTALLATION - TEMPORARY BACKFILL



SIDE VIEW
(NOT TO SCALE)



END VIEW
(NOT TO SCALE)

NOTES:
1. ALL CONDUITS SHALL BE FURNISHED WITH BELL ENDS AT ENTRANCE TO PITS.
2. CONTRACTOR SHALL SUBMIT PROPOSED CABLE SUPPORT METHOD FOR OWNER APPROVAL. (E.G. SAND BAGS, CABLE CRADLES, ETC.)
3. EACH END OF SPLICE PIT SHALL INCLUDE CABLE PULLING EYES. PULLING EYES SHALL BE CAPABLE OF WITHSTANDING MAXIMUM PULLING FORCE.
4. CONTRACTOR SHALL SUBMIT SHOP DRAWING OF PROPOSED CONCRETE PIT PRIOR TO CONSTRUCTION.
5. WITHIN AREAS TO BE PAVED, CRUSHED GRAVEL, STANDARD SPECIFICATIONS SECTION 304, OR APPROVED EQUAL TO THE EXISTING GRAVEL COURSE, SHALL BE PLACED IN LAYERS NOT EXCEEDING SIX (6) INCHES COMPACTED THICKNESS, AND THOROUGHLY COMPACTED.
6. ADDITIONAL PENETRATIONS REQUIRED AT LINK BOX LOCATIONS, SEE DETAIL 9.
7. ALL PENETRATIONS TO BE SEALED WITH POLYWATER FST DUCT SEALANT OR EQUAL.

DETAIL 6
±320 kV CABLE SPLICE PIT INSTALLATION - FINAL

NO.	REVISION	DATE	DRWN	CHKD	APPRV.
B	ISSUED FOR PERMIT	11/30/16	DGR	TDD	TMH
A	ISSUED FOR REVIEW	11/18/16	DGR	TDD	TMH

SEAL

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A/E INFO

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A QUANTA SERVICES COMPANY

THE NORTHERN PASS
Transmission Business

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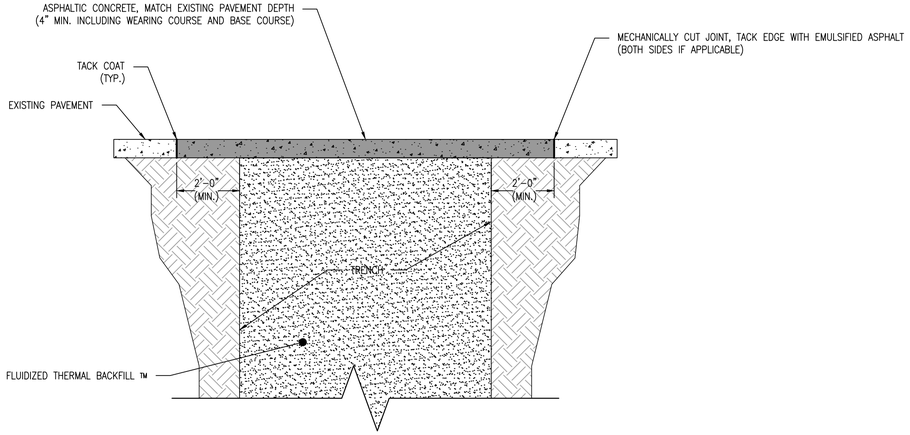
NPT
ROT3–UNDERGROUND ALIGNMENT
CABLE SPLICE PIT DETAILS
DATE: 11/30/2016
SCALE: NOT TO SCALE

DES: TDD | CHK: TDD
DRW: DGR | APR: TMH

TOWN:

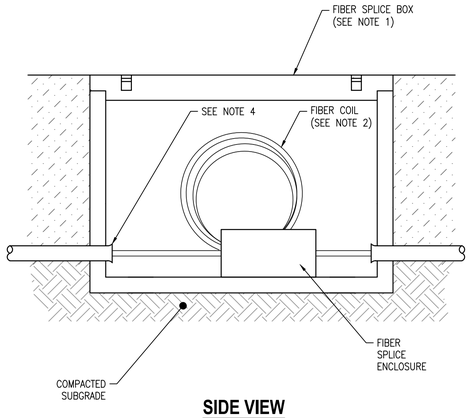
TRANSMISSION LINE:
ROT3

ROT3C503

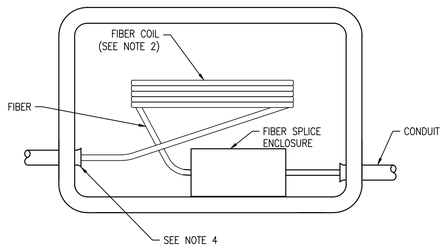


NOTES:
1. IN AREAS WHERE THE PAVEMENT IS TO BE EXCAVATED, IT SHALL BE NEATLY AND UNIFORMLY CUT BY MACHINE, WITH SQUARE EDGES BY MACHINE, AT EACH SIDE OF ALL TRENCHES. EVERY PRECAUTION SHALL BE USED TO PREVENT UNDERMINING OF THE REMAINING PAVEMENT, UTILIZING SHEETING AS REQUIRED, TO PREVENT CAVE–IN. IN AREAS THAT ARE INADVERTENTLY UNDERMINED SHALL HAVE THE PROJECTING PAVEMENT CUT SQUARE AND REMOVED.
2. WHERE FLUIDIZED THERMAL BACKFILL IS NOT USED, ALL BACKFILL MATERIAL IN TRENCHES AND BELOW BASE COURSES SHALL CONSIST OF EXCAVATED MATERIAL SUITABLE FOR BACKFILL AS DEFINED IN STANDARD SPECIFICATIONS, SECTION 603. ALL BACKFILL SHALL BE COMPACTED AT OR NEAR OPTIMUM MOISTURE CONTENT IN LAYERS NOT EXCEEDING SIX (6) INCHES COMPACTED THICKNESS, USING PNEUMATIC TAMPERS, VIBRATORY COMPACTORS, OR OTHER APPROVED MEANS. THE MATERIAL SHALL BE COMPACTED TO NOT LESS THAN NINETY FIVE (95) PERCENT OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T99 (STANDARD PROCTOR TEST). WATER SHALL BE UNIFORMLY APPLIED DURING COMPACTION IN THE AMOUNT NECESSARY FOR PROPER COMPACTION.
3. JUST BEFORE COMPLETION OF THE PROJECT AND AFTER SUITABLE EXPOSURE OF TEMPORARY PATCHES TO TRAFFIC COMPACTION, THE PAVEMENT SHALL BE SAWN, AS DIRECTED, ON EITHER SIDE OF THE TRENCH TO PROVIDE A TWO (2) FOOT MINIMUM OVERLAP OF THE FINAL PATCH ON UNDISTURBED MATERIAL.
4. FINISHED PAVEMENT MUST REPLICATE THE ORIGINAL PAVEMENT. SAW CUTS FOR FINAL PATCHING SHALL BE AS DIRECTED BY THE DISTRICT ENGINEER.

DETAIL 7
PAVEMENT PATCH DETAIL
(NOT TO SCALE)



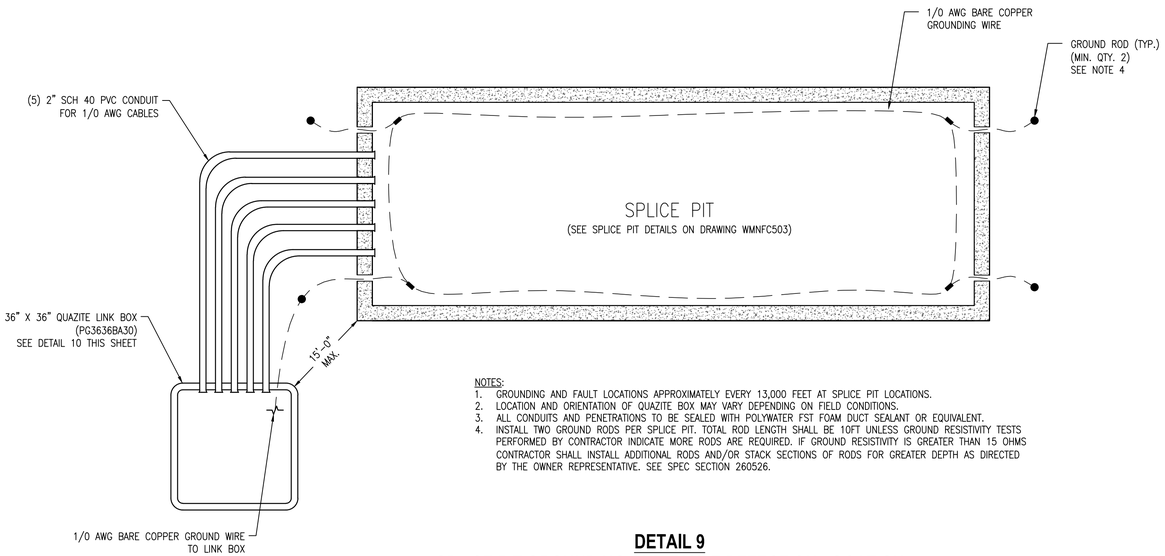
SIDE VIEW



PLAN VIEW

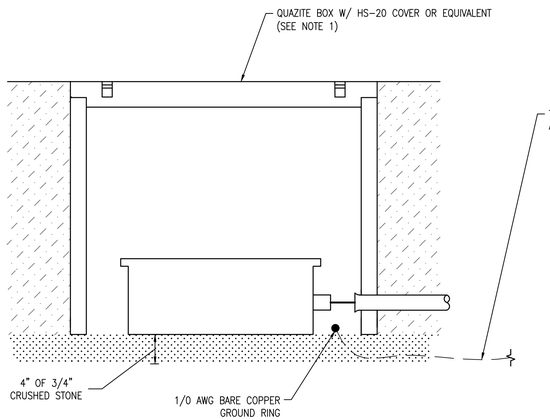
NOTES:
1. ALL FIBER SPLICE BOXES SHALL BE QUAZITE 24" X 36" X 30" DEEP SPLICE ENCLOSURE #PG2436DG30 OR APPROVED EQUAL.
2. COIL 30' (MIN.) OF FIBER OPTIC CABLE IN ENCLOSURES TO ALLOW FOR SPLICING AND MAINTENANCE. CONTRACTOR TO VERIFY REQUIRED CABLE LENGTHS PRIOR TO INSTALLATION.
3. SEE UNDERGROUND ALIGNMENT DRAWINGS FOR FIBER SPLICE ENCLOSURE LOCATIONS.
4. FOAM END OF CONDUIT INSIDE FIBER SPLICE BOXES FOR BOTH ENTERING AND EXITING LOCATIONS.
5. FIBER SPLICE BOXES SHALL BE CO–LOCATED WITH CABLE SPLICE LOCATIONS.

DETAIL 8
FIBER OPTIC SPLICE ENCLOSURE
(NOT TO SCALE)

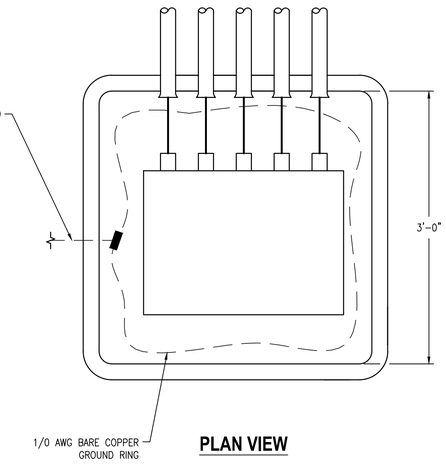


NOTES:
1. GROUNDING AND FAULT LOCATIONS APPROXIMATELY EVERY 13,000 FEET AT SPLICE PIT LOCATIONS.
2. LOCATION AND ORIENTATION OF QUAZITE BOX MAY VARY DEPENDING ON FIELD CONDITIONS.
3. ALL CONDUITS AND PENETRATIONS TO BE SEALED WITH POLYWATER FST FOAM DUCT SEALANT OR EQUIVALENT.
4. INSTALL TWO GROUND RODS PER SPLICE PIT. TOTAL ROD LENGTH SHALL BE 10FT UNLESS GROUND RESISTIVITY TESTS PERFORMED BY CONTRACTOR INDICATE MORE RODS ARE REQUIRED. IF GROUND RESISTIVITY IS GREATER THAN 15 OHMS CONTRACTOR SHALL INSTALL ADDITIONAL RODS AND/OR STACK SECTIONS OF RODS FOR GREATER DEPTH AS DIRECTED BY THE OWNER REPRESENTATIVE. SEE SPEC SECTION 260526.

DETAIL 9
SPLICE PIT GROUNDING AND FAULT DETECTION LOCATION
(NOT TO SCALE)



SIDE VIEW



PLAN VIEW

NOTES:
1. 36" x 36 INCH QUAZITE LINK BOX (PG3636BA30).
2. ALL CONDUITS AND PENETRATIONS TO BE SEALED WITH POLYWATER FST FOAM SEALANT OR EQUAL.

DETAIL 10
LINK BOX DETAIL
(NOT TO SCALE)

PRELIMINARY - NOT FOR CONSTRUCTION

NO.	REVISION	DATE	DRWN.	CHKD	APPRV.
B	ISSUED FOR PERMIT	11/30/16	DGR	TDD	TMH
A	ISSUED FOR REVIEW	11/7/16	DGR	TDD	TMH

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NPT
ROT3–UNDERGROUND ALIGNMENT
TRENCH AND UTILITY DETAILS

DATE: 11/30/2016
SCALE: NOT TO SCALE

DES: TDD | CHK: TDD
DRW: DGR | APR: TMH

TOWN:

TRANSMISSION LINE:
ROT3

ROT3C504

GENERAL SITE GRADING NOTES:

1. ALL NEW DRIVE AND PARKING AREA SURFACES SHALL PITCH 1/4 INCH PER FOOT MINIMUM UNLESS OTHERWISE NOTED.
2. ALL AREAS THAT ARE EXCAVATED, FILLED, OR OTHERWISE DISTURBED BY THE CONTRACTOR SHALL BE LOAMED, GRADED, LIMED, FERTILIZED, SEEDED AND MULCHED, UNLESS OTHERWISE NOTED. THE TOP 4 INCHES OF SOIL SHALL BE TOPSOIL.
3. ALL ELEVATIONS REFER TO NAVD 83F. THE CONTRACTOR WILL BE PROVIDED WITH A TEMPORARY BENCHMARK PRIOR TO CONSTRUCTION.
4. CONTRACTOR SHALL CONTROL DUST ON THE CONSTRUCTION SITE TO A REASONABLE LIMIT, TO THE SATISFACTION OF THE MUNICIPALITY AND ENGINEER.
5. CONTRACTOR SHALL NOT TRACK OR SPILL EARTH, DEBRIS, OR OTHER CONSTRUCTION MATERIAL ON PUBLIC OR PRIVATE STREETS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMMEDIATE ASSOCIATED CLEAN UP.
6. ALL BURIED FACILITIES WITH SURFACE ACCESS SHALL BE ADJUSTED TO MATCH FINAL GRADES, UNLESS OTHERWISE INDICATED.
7. CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL DEBRIS AND EXCESS EXCAVATED MATERIAL FROM WITHIN THE CONSTRUCTION LIMIT OF WORK, TO A SUITABLE OFF-SITE LOCATION PROVIDED BY THE CONTRACTOR, IN COMPLIANCE WITH STATE AND LOCAL REGULATIONS. STUMPS SHALL NOT BE BURIED ONSITE.
8. CONTRACTOR SHALL REMOVE AND REPLACE, OR REPAIR ALL PAVEMENT AND OTHER ITEMS DAMAGED BY HIS CONSTRUCTION ACTIVITIES TO AT LEAST THEIR ORIGINAL CONDITION, TO THE SATISFACTION OF NHDOT.
9. WHERE EXISTING PAVEMENT IS REMOVED AND REPLACED, MATCH EXISTING GRADES TO THE EXTENT POSSIBLE. COORDINATE FINE GRADING WITH THE ENGINEER.
10. NO PERCHLORATES ARE TO BE USED IN BLASTING MATERIALS.

NEW HAMPSHIRE DES EROSION CONTROL NOTES:

1. THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED.
2. ALL CUT AND FILL SLOPES SHALL BE SEEDED AND MULCHED OR STONED WITHIN 72 HOURS AFTER THEIR CONSTRUCTION.
3. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
   a. BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
   b. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
   c. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED; OR
   d. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

GENERAL EROSION CONTROL NOTES:

1. ALL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ARE A MINIMUM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONDUCTING EROSION AND SEDIMENT CONTROL PRACTICES IN ACCORDANCE WITH LOCAL REGULATIONS AND GOVERNING AUTHORITIES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONDUCTING STORM WATER MANAGEMENT PRACTICES IN ACCORDANCE WITH LOCAL REGULATIONS AND GOVERNING AUTHORITIES.
3. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF CONSTRUCTION AND SHALL BE MAINTAINED UNTIL FINAL SURFACING AND LANDSCAPING ARE ESTABLISHED.
4. THE CONTRACTOR SHALL PROVIDE PROPER EROSION CONTROL AND DRAINAGE MEASURES IN ALL AREAS OF WORK, AND CONFINE SOIL SEDIMENT TO WITHIN THE LIMITS OF EXCAVATION AND GRADING. PRIOR TO BEGINNING EXCAVATION WORK, SILT/HAYBALE FENCE SHALL BE INSTALLED AT THE DOWNGRADIENT PERIMETER OF THE ACTUAL LIMITS OF GRUBBING AND/OR GRADING, AND AS SHOWN ON THE DRAWINGS. EROSION CONTROL MEASURES SHOWN ON THE DRAWINGS ARE A MINIMUM, CONTRACTOR SHALL TAKE ALL OTHER NECESSARY MEASURES TO CONTROL EROSION. EROSION CONTROL FENCE SHALL ALSO BE INSTALLED AT THE DOWNGRADIENT PERIMETER OF THE TOPSOIL STOCKPILES. ALL DISTURBED EARTH SURFACES SHALL BE STABILIZED IN THE SHORTEST PRACTICAL TIME AND TEMPORARY EROSION CONTROL DEVICES SHALL BE EMPLOYED UNTIL SUCH TIME AS ADEQUATE SOIL STABILIZATION HAS BEEN ACHIEVED. TEMPORARY STORAGE OF EXCAVATED MATERIAL SHALL BE STABILIZED IN A MANNER THAT WILL MINIMIZE EROSION. ALL INSTALLED EROSION CONTROL FACILITIES SHALL BE REMOVED AT THE END OF THE PROJECT. IF SEDIMENT SHOULD ESCAPE UNDER THE EROSION CONTROL MEASURES, CORRECTIVE MEASURES SHOULD BE TAKEN WITHIN 48 HOURS TO RESTORE THE BARRIER.
5. CATCH BASIN AND STORM DRAIN PROTECTION MEASURES SHALL BE INSTALLED PRIOR TO CONSTRUCTION TO PROTECT EXISTING SYSTEMS FROM RECEIVING RUNOFF FROM UNSTABILIZED SURFACES.
6. SEEDING SHALL BE INSTALLED ON EXPOSED AREAS OF THE SITE WHERE GRADING ACTIVITIES WILL CEASE FOR A PERIOD OF MORE THAN 21 DAYS. SEEDING SHALL BE INSTALLED BY THE 14TH DAY AFTER THE LAST DISTURBANCE. TEMPORARY SEEDING SHALL BE INSTALLED ON SUCH AREAS AS GRADED SLOPES, STOCKPILE AREAS, ETC.

EROSION CONTROL SEED MIX SHALL MEET THE FOLLOWING CRITERIA:

SEED	% WEIGHT	% GERMINATION
WINTER RYE	80 MINIMUM	85 MIN
RED FESCUE (CREEPING)	4 MIN	80 MIN
PERENNIAL RYE GRASS	3 MIN	90 MIN
RED CLOVER	3 MIN	90 MIN
OTHER CROP GRASS	0.5 MAX	
NOXIOUS WEED SEED	0.5 MAX	
INERT MATTER	1.0 MAX	

7. THE CONTRACTOR SHALL INSPECT THE EROSION AND SEDIMENTATION CONTROL DEVICES AFTER EACH RAINSTORM AND DURING MAJOR STORM EVENTS. REPAIRS SHALL BE MADE AS NECESSARY. ACCUMULATED SEDIMENT TRAPPED BY EROSION AND SEDIMENTATION CONTROL DEVICES SHALL BE REMOVED AS NECESSARY.
8. DURING CONSTRUCTION, TEMPORARY OUTLETS OF THE DRAINAGE SYSTEMS SHALL BE PROTECTED BY SEDIMENT BASINS.
9. TEMPORARY EROSION AND SEDIMENTATION CONTROL DEVICES SHALL BE REMOVED AND THOSE AND ADJACENT AREAS RESTORED UPON COMPLETION OF THE WORK OR WHEN SO ORDERED BY THE ENGINEER.
10. THE METHOD OF STRIPPING VEGETATION SHALL BE SUCH AS TO MINIMIZE EROSION. FILLS SHALL BE PLACED AND COMPACTED IN SUCH A MANNER THAT SOIL SLIDING AND EROSION IS MINIMIZED. GRADING SHALL BE DONE IN SUCH A MANNER AS NOT TO DIVERT WATER ON TO ADJOINING PROPERTY.
11. TEMPORARY MULCHING IS TO BE APPLIED TO ALL DISTURBED AREAS LEFT INACTIVE AND UNSTABILIZED FOR A PERIOD GREATER THAN 7 DAYS.
12. RIPRAP INLET/OUTLET PROTECTION SHALL BE INSTALLED WITHIN 48 HOURS OF CULVERT INSTALLATION.
13. EROSION CONTROL BLANKET SHALL BE USED FOR ALL DITCH INVERTS AS CHANNEL/DITCH STABILIZATION. EITHER MULCHING OR EROSION CONTROL BLANKET MAY BE USED ON SIDE SLOPES.
14. PERMANENT STONE CHECK DAMS ARE TO BE INSTALLED WITHIN ALL PROPOSED AND DISTURBED DRAINAGE SWALES AT INTERVALS SPECIFIED BY STONE CHECK DAM DETAIL.
15. TEMPORARY CONSTRUCTION ENTRANCES ARE TO BE PROVIDED AT ALL CONNECTION POINTS WITH PUBLIC ROADS USED FOR CONSTRUCTION ACCESS.

CONSTRUCTION SEQUENCING NOTES:

SITE CLEARING/DISTURBANCE

1. PRIOR TO ANY CLEARING ACTIVITY ON SITE, INSTALL A STABILIZED CONSTRUCTION ENTRANCE AT THE ACCESS POINT.
2. CONTRACTOR SHALL SUBMIT A "STORMWATER MANAGEMENT PLAN" PRIOR TO ANY CONSTRUCTION ACTIVITIES.
3. PRIOR TO SITE ACTIVITY INSTALL ALL EROSION CONTROL MEASURES.
4. PROTECT EXISTING VEGETATION AND NATURAL FOREST COVER THAT IS DESIGNATED TO REMAIN ON THE SITE. DELINEATE AREAS THAT ARE TO REMAIN UNDISTURBED WITH ORANGE CONSTRUCTION FENCE. EXCLUDE VEHICLES AND OTHER CONSTRUCTION EQUIPMENT FROM THESE AREAS TO PRESERVE EXISTING VEGETATION
5. ALL METHODS OF CLEARING AND CUTTING EXISTING VEGETATION SHALL BE DONE IN A MANNER THAT MINIMIZES POTENTIAL FOR SOIL EROSION. TREE STUMPS SHALL BE LEFT IN PLACE FOLLOWING CLEARING EFFORTS UNTIL SUCH TIME THAT GRUBBING AND SITE GRADING OCCURS.

STUMP REMOVAL, GRUBBING, BLASTING, AND SITE GRADING

1. PRIOR TO ANY GROUND DISTURBANCE, ADEQUATE EROSION CONTROL MEASURES SHALL BE INSTALLED DOWN GRADIENT FROM AREAS OF DISTURBANCE IN SUCH A MANNER THAT WILL PREVENT EXPOSED SOIL FROM ERODING AND TRAVELING BEYOND THE ACTIVE WORKING AREA. PERIMETER EROSION CONTROLS ESTABLISHED PRIOR TO SITE CLEARING ACTIVITIES ARE TO BE CONSIDERED A MINIMUM. THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES, SUCH AS SILT FENCE AND EROSION CONTROL LOGS TO ENSURE EACH AREA OF EXPOSED SOIL IS ADEQUATELY PROTECTED USING EROSION CONTROL MEASURES.
2. STUMP REMOVAL, GRUBBING, BLASTING, AND SITE GRADING SHALL BE PHASED TO LIMIT THE EXTENT OF DISTURBED AREAS. THE SMALLEST AREA PRACTICABLE SHALL BE DISTURBED AT ANY ONE TIME AND AT NO TIME SHALL THE DISTURBED AREA EXCEED 5 ACRES WITHOUT TEMPORARY SOIL STABILIZATION MEASURES IN PLACE.
3. TEMPORARY MULCHING SHALL BE APPLIED TO ALL DISTURBED AREAS OF EXPOSED SOIL LEFT INACTIVE AND UNSTABILIZED FOR A PERIOD OF 72 HOURS. ADDITIONALLY, ALL DISTURBED AREAS SHALL BE TEMPORARY MULCHED 24 HOURS PRIOR TO A FORECASTED RAIN EVENT THAT IS TO EXCEED 0.5".
4. PROPERLY SIZED EROSION CONTROL FILTER LOGS SHALL BE INSTALLED AROUND THE PERIMETER OF EACH STOCKPILE OF EXCAVATED MATERIAL AND THE STOCKPILED MATERIAL SHALL BE STABILIZED.
5. ALL AREAS SHALL BE STABILIZED (PERMANENT OR TEMPORARY) WITHIN 45 DAYS OF INITIAL DISTURBANCE.

CONSTRUCTION

1. ALL CATCH BASINS, STORM DRAINS, DITCHES, SWALES, AND STORMWATER TREATMENT DEVICES SHALL BE INSTALLED IMMEDIATELY FOLLOWING ROUGH GRADING OF THE SITE.
2. ALL CATCH BASINS, STORM DRAIN INLETS, AND STORMWATER TREATMENT DEVICES SHALL BE ADEQUATELY PROTECTED DURING CONSTRUCTION TO PREVENT THEM FROM RECEIVING RUNOFF FROM UNSTABILIZED AREAS.
3. DURING CONSTRUCTION OF ALL SITE DRAINAGE AND STORMWATER TREATMENT DEVICES, TEMPORARY OUTLETS FROM THESE DEVICES SHALL BE PROTECTED BY A SEDIMENT BASIN.
4. ALL DITCHES AND SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THESE DEVICES.
5. INSTALL EROSION CONTROL BLANKET ON ALL DITCH INVERTS WHERE NEEDED FOR CHANNEL/DITCH STABILIZATION. INSTALL EITHER MULCH OR EROSION CONTROL BLANKET WHERE REQUIRED ON SIDE SLOPES.
6. RIPRAP INLET AND OUTLET PROTECTION SHALL BE INSTALLED WITHIN 48 HOURS OF ALL CULVERT INSTALLATIONS.
7. TEMPORARY SEEDING SHALL BE ESTABLISHED ON ALL AREAS OF THE SITE WHERE CONSTRUCTION OR GRADING ACTIVITIES WILL CEASE FOR GREATER THAN 72 HOURS.
8. PERMANENT SEEDING AND STABILIZATION SHOULD OCCUR ON ALL AREAS WHERE DISTURBANCE AND CONSTRUCTION IS COMPLETE WITHIN 72 HOURS OF FINAL GRADING.
9. AN AREA SHALL BE CONSIDERED STABLE ONLY IF ONE OF THE FOLLOWING HAS OCCURRED
   a. BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
   b. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
   c. A MINIMUM OF 3" NON-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED; OR
   d. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
10. ALL AREAS TO BE SEEDED FOR PERMANENT VEGETATION SHALL BE PREPARED WITH A 4" SURFACE LAYER OF LOAM OR TOP SOIL, THEN GRADED, LIMED, AND FERTILIZED PRIOR TO SEED APPLICATION.
    a. LIMESTONE SHALL BE APPLIED AT A RATE OF 3 TONS PER ACRE (138 LBS. PER 1000 SQUARE FEET).
    b. FERTILIZER SHALL BE RESTRICTED TO A LOW PHOSPHATE (E.G. 10:0:10, N:P:K), SLOW RELEASE NITROGEN FERTILIZER. SLOW RELEASE FERTILIZERS MUST BE AT LEAST 50% SLOW RELEASE NITROGEN COMPONENT, MEANING HALF OF THE NITROGEN APPLIED WILL NOT BE IMMEDIATELY AVAILABLE FOR PLANT UPTAKE.
    c. ALL FERTILIZER APPLICATIONS SHALL BE CARRIED OUT BY A LICENSED PROFESSIONAL APPLICATOR

MAINTENANCE

1. ALL AREAS OF RILL OR GULLY EROSION SHOULD BE IMMEDIATELY INVESTIGATED AND REPAIRED AS NEEDED.
2. ALL EROSION CONTROLS SHALL BE INSPECTED WEEKLY AND WITHIN 24 HOURS OF RAIN EVENTS EXCEEDING 0.5".
3. REPAIRS SHALL BE MADE, AS NECESSARY, TO EROSION AND SEDIMENTATION CONTROL DEVICES FOLLOWING INSPECTION.
4. ACCUMULATED SEDIMENT TRAPPED BY EROSION AND SEDIMENTATION CONTROL DEVICES SHALL BE REMOVED AS NECESSARY.
5. SITE SHALL BE SWEPT WEEKLY AFTER THE BINDER COURSE IS PAVED AND UNTIL THE SITE IS FULLY STABILIZED.

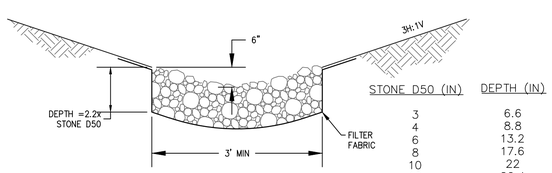
WINTER EROSION CONTROL AND STABILIZATION NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETING ALL WINTER EROSION AND SEDIMENT CONTROL IN ACCORDANCE WITH LOCAL REGULATIONS AND GOVERNING AUTHORITIES.
2. WINTER EXCAVATION AND EARTHWORK SHALL BE COMPLETED SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ONE TIME.
3. DISTURBED AREAS ARE TO BE LIMITED TO AREAS WHERE WORK IS TO BE COMPLETED WITHIN 15 DAYS AND CAN BE MULCHED IN ONE DAY PRIOR TO A SNOW EVENT.
4. THE SITE STABILIZATION SCHEDULE BEFORE WINTER SHALL BE AS FOLLOWS:

OCTOBER 15 — ALL PROPOSED VEGETATED AREAS THAT DO NOT EXHIBIT A MINIMUM OF 85 PERCENT VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING ON FLATTER SLOPES. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.

OCTOBER 15 — ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85 PERCENT VEGETATVE GROWN BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE FLOW CONDITIONS AS DIRECTED BY THE EROSION CONTROL INSPECTOR.

NOVEMBER 15 — INCOMPLETE ROAD OR PARKING SURFACES WHERE WORK HAS STOPPED FOR THE WINTER SEASON SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL PER NHDOT SPEC 304.3.

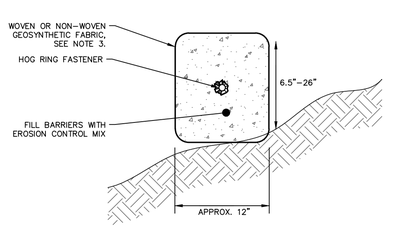


STONE D50 (IN)	DEPTH (IN)
3	6.6
4	8.8
6	13.2
8	17.6
10	22
12	26.4

DETAIL 12
STONE LINED SWALE DETAIL
(NOT TO SCALE)

NEW HAMPSHIRE DES EROSION CONTROL MONITORING NOTES:

1. A CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL OR A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW HAMPSHIRE ("MONITOR") SHALL BE EMPLOYED TO INSPECT THE SITE FROM THE START OF ALTERATION OF TERRAIN ACTIVITIES UNTIL THE SITE IS IN FULL COMPLIANCE WITH THE ALTERATION OF TERRAIN PERMIT ("PERMIT").
2. DURING THIS PERIOD, THE MONITOR SHALL INSPECT THE SUBJECT SITE AT LEAST ONCE A WEEK, AND IF POSSIBLE, DURING ANY ½ INCH OR GREATER RAIN EVENT (I.E. ½ INCH OF PRECIPITATION OR MORE WITHIN A 24 HOUR PERIOD). IF UNABLE TO BE PRESENT DURING SUCH A STORM, THE MONITOR SHALL INSPECT THE SITE WITHIN 24 HOURS OF THIS EVENT.
3. THE MONITOR SHALL PROVIDE TECHNICAL ASSISTANCE AND RECOMMENDATIONS TO THE CONTRACTOR ON THE APPROPRIATE BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENT CONTROLS REQUIRED TO MEET THE REQUIREMENTS OF RSA 485-A:17 AND ALL APPLICABLE DES PERMIT CONDITIONS.
4. ROUTINE INSPECTION FREQUENCY MAY BE REDUCED FROM ONCE EACH WEEK TO AT LEAST ONCE EACH MONTH IF EITHER OF THE FOLLOWING CONDITIONS IS MET:
   a. WORK HAS BEEN SUSPENDED AND THE ENTIRE SITE IS STABILIZED IN ACCORDANCE WITH THE DES DEFINITION OF STABILITY (DES EROSION CONTROL NOTE #4 ABOVE); OR
   b. RUNOFF IS UNLIKELY BECAUSE THE GROUND IS FROZEN OR THE SITE IS COVERED WITH SNOW OR ICE; AND THE PROJECT IS IN AN AREA WHERE FROZEN CONDITIONS ARE ANTICIPATED TO CONTINUE FOR MORE THAN ONE MONTH.
   c. UPON THE DECISION TO REDUCE EROSION AND SITE STABILITY INSPECTIONS, FIRST VERIFY WITH THE CITY OF LACONIA PLANNING DEPARTMENT SO THEY CAN ADJUST SITE VISITS ACCORDINGLY.
5. WITHIN 24 HOURS OF EACH INSPECTION, THE MONITOR SHALL SUBMIT A REPORT TO DES ALTERATION OF TERRAIN BUREAU VIA EMAIL.
6. PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR'S NAME, ADDRESS, AND PHONE NUMBER SHALL BE SUBMITTED TO DES ALTERATION OF TERRAIN BUREAU VIA EMAIL.



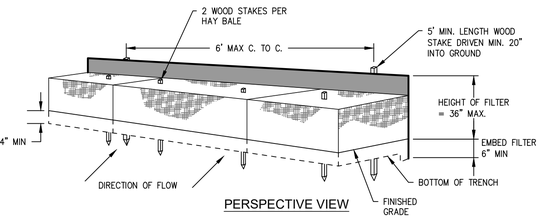
SEDIMENT LOG INSTALLATION CHART					
Slope %	MAXIMUM SLOPE LENGTH ABOVE BARRIER				
	8" BARRIER	12" BARRIER	18" BARRIER	24" BARRIER	32" BARRIER
<2	600	750	1000	1300	1650
5	400	500	550	650	750
10	200	250	300	400	500
15	140	170	200	325	450
20	100	125	140	260	400
25	80	100	110	200	275
30	60	75	90	130	200
35	60	75	80	115	150
40	60	75	80	100	125
45	40	50	60	80	100
50	40	50	55	65	75
INSTALLED EFFECTIVE DEPTH	6.5"	9.5"	14.5"	19"	26"

SECTION VIEW
(NOT TO SCALE)

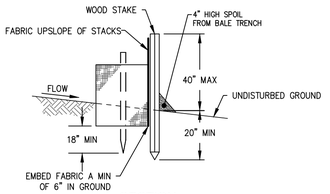
NOTES:

1. EROSION CONTROL MIX SHALL CONTAIN A WELL-GRADED MIXTURE OF PARTICLE SIZED AND MAY CONTAIN ROCKS LESS THAN 4" IN DIAMETER. EROSION CONTROL MIX MUST BE FREE OF REFUSE, PHYSICAL CONTAMINANTS, AND MATERIAL TOXIC TO PLANT GROWTH. THE MIX COMPOSITION SHALL MEET THE FOLLOWING STANDARDS.
   1.1. THE ORGANIC MATTER CONTENT SHALL BE BETWEEN 80 AND 100 PERCENT, DRY WEIGHT BASIS.
   1.2. PARTICLE SIZE BY WEIGHT SHALL BE 100 PERCENT PASSING A 6-INCH SCREEN AND A MINIMUM OF 70 PERCENT, MAXIMUM OF 85 PERCENT, PASSING A 3/4-INCH SCREEN.
   1.3. THE ORGANIC PORTION NEEDS TO BE FIBROUS AND ELONGATED.
   1.4. LARGE PORTIONS OF SILTS, CLAYS OR FINE SANDS ARE NOT ACCEPTABLE IN THE MIX.
   1.5. SUITABLE SALTS CONTENT SHALL BE LESS THAN 4.0 MINIMUM.
2. THE BARRIER MUST BE PLACED ALONG A RELATIVELY LEVEL CONTOUR. TALL GRASSES MAY NEED TO BE CUT TO AVOID VOID SPACES THAT WOULD ALLOW FINES TO WASH UNDER THE BARRIER
3. BARRIER TO BE FILTREXX FILTERSOXX OR EQUIVALENT.
4. STAKES SHALL BE INSTALLED THROUGH THE MIDDLE OF THE BARRIER AT 10' CENTERS USING 2"X2" GRADE STAKES. STAKING DEPTH 12" MIN FOR SILT LOAM SOILS, 8" MIN FOR CLAY SOILS. PLACE CONCRETE BLOCKS BEHIND BARRIER IN INSTALLATIONS ON PAVEMENT OR LEDGE.
5. FROZEN GROUND, OUTCROPS OF BEDROCK AND VERY ROOTED FORESTED AREAS ARE LOCATIONS WHERE BERMS OF EROSION CONTROL MIX ARE MOST PRACTICAL AND EFFECTIVE.

DETAIL 13
EROSION CONTROL MIX FILTER 'LOG' DETAL
(NOT TO SCALE)



PERSPECTIVE VIEW

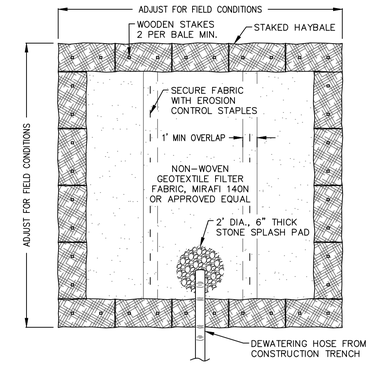


SECTION

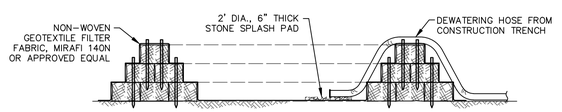
NOTES:

1. FILTER CLOTH TO BE STAPLED OR WIRED TO THE STACKS.
2. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
3. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUIVALENT.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN SEDIMENT REACHES HALF OF FABRIC HEIGHT.
5. IMMEDIATELY CLEAN ANY SEDIMENTATION GENERATED FROM AN OVERTOPPING INCIDENT.

DETAIL 11
SILT FENCE/HAY BALE BARRIER DETAL
(NOT TO SCALE)



PLAN



SECTION

NOTES

1. FOOTPRINT OF BASIN AND ASSOCIATED NUMBER OF BALES MAY VARY BASED ON SITE CONDITIONS. PERIMETER WALL TO BE COMPRISED OF THREE TIERS AS SHOWN. STAKES SHALL BE INSERTED TO PENETRATE A MINIMUM OF TWO BALES.
2. THE BASIN SHALL BE SIZED TO PREVENT DISCHARGE WATER FROM OVERTOPPING BASIN. IF BASIN IS OVERTOPPED DISCONTINUE USE IMMEDIATELY AND RE-SIZE. IMMEDIATELY CLEAN ANY SEDIMENTATION GENERATED FROM AN OVERTOPPING INCIDENT.
3. KEEP BASIN AS FAR FROM WETLANDS AS PRACTICAL. DO NOT LOCATE BASIN WITHIN 50 FEET OF WETLANDS OR OTHER RESOURCES
4. BASINS SHALL BE LOCATED IN AREAS THAT ARE GENERALLY FLAT WITH SLOPES FROM 0-2%.
5. CLEAN AND REMOVE BASIN AS SOON AS DEWATERING IS COMPLETE.
6. CONCRETE JERSEY BARRIERS CAN BE SUBSTITUTED FOR HAYBALES AS DESIRED.
7. IF SOILS ARE JUDGED NOT TO BE SUFFICIENTLY PERMEABLE, OR WHERE PORTABILITY IS DESIRED, A STANDARD 20 TO 40 CUBIC YARD STEEL WASTE CONTAINER CAN BE USED. THE STEEL CONTAINER SHALL BE DIVIDED INTO TWO CHAMBERS VIA A FILTER BARRIER WHERE THE INFLUENT CHAMBER WILL BE USED TO ENTRAP SOLIDS AND THE SECOND CHAMBER WILL BE USED AS A CLEAR WELL FROM WHICH THE CLARIFIED FLOW WILL BE PIPED TO A TEMPORARY STONE BERM FOR DISPERSION TO EXISTING GRADE.

DETAIL 14
TEMPORARY SEDIMENTATION BASIN DETAIL
(NOT TO SCALE)

PRELIMINARY - NOT FOR CONSTRUCTION

NO.	REVISION	DATE	DRWN.	CHKD	APPRV.
A	ISSUED FOR PERMIT	11/30/16	DGR	TDD	TMH
B	ISSUED FOR PERMIT	1/17/2017	DGR	TDD	TMH

SGC Engineering, LLC
A member of the Lloyd's Register Group

PAR ELECTRICAL CONTRACTORS, INC.

THE NORTHERN PASS
Transmission Business

B

NPT
ROT3-UNDERGROUND ALIGNMENT
EROSION CONTROL DETAILS-1

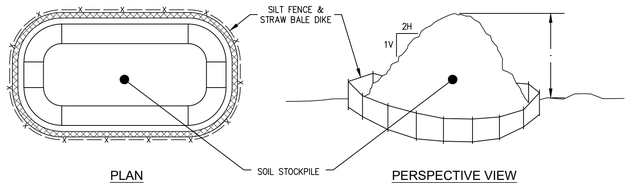
DATE: 11/30/2016
SCALE: NOT TO SCALE

DES: TDD | CHK: TDD
DRW: DGR | APR: TMH

TOWN: CLARKSVILLE/PITTSBURG

TRANSMISSION LINE: ROT3

ROT3C505

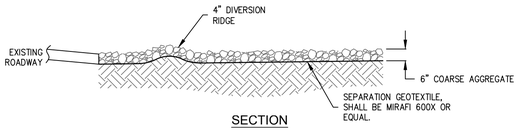


PLAN PERSPECTIVE VIEW

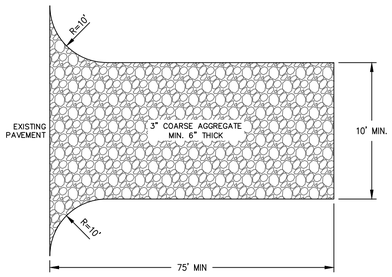
NOTES:

1. SOIL STOCKPILES SHALL BE SITUATED IN A DRY AREA.
2. SILT FENCE AND STRAW BALES MUST BE PLACED CONTINUOUSLY AROUND THE PERIMETER OF ALL STOCKPILES.
3. IMMEDIATELY APPLY MULCH TO ALL STOCKPILES WHICH WILL BE INACTIVE. IN LIEU OF MULCHING, STOCKPILES MAY BE COVERED WITH A SECURE TARP.

DETAIL 15
SOIL STOCKPILE DETAIL
(NOT TO SCALE)



SECTION

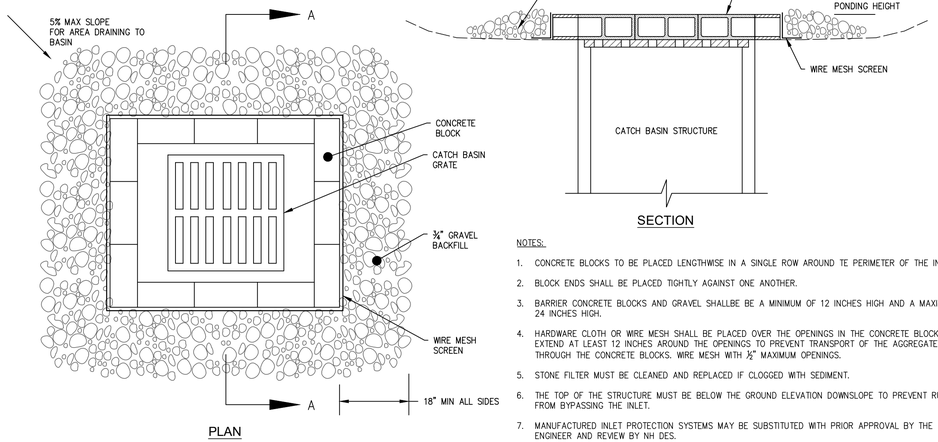


PLAN

NOTES:

1. STONE SIZE – USE 3 INCH STONE.
2. LENGTH – NOT LESS THAN 75 FEET.
3. THICKNESS – NOT LESS THAN SIX (6) INCHES.
4. WIDTH – TEN (10) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
5. GEOTEXTILE MIRAFI 600X MUST BE PLACED OVER THE ENTIRE BED PRIOR TO PLACING OF STONE.
6. MIN 15"ø CULVERT SHALL BE INSTALLED FOR DRAINAGE BENEATH CONSTRUCTION ENTRANCES. IF CULVERT IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS–OF–WAY MUST BE REMOVED IMMEDIATELY.
8. CONSTRUCTION ENTRANCE TO BE INSPECTED WEEKLY. ADDITIONAL STONE TO BE ADDED AS NECESSARY.
9. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
10. PERIODIC INSPECTION AND MAINTENANCE SHALL BE PROVIDED ACCORDING TO PERMIT REQUIREMENTS.

DETAIL 18
STABILIZED CONSTRUCTION ENTRANCE DETAIL
(NOT TO SCALE)

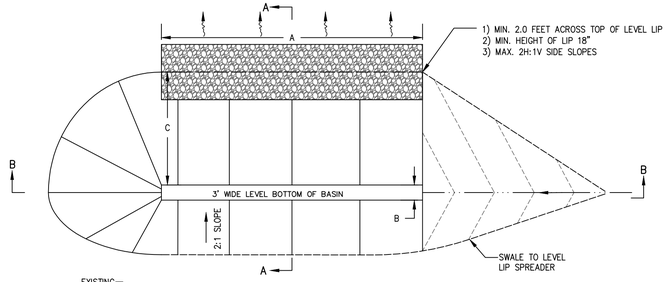


PLAN SECTION

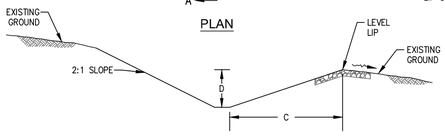
NOTES:

1. CONCRETE BLOCKS TO BE PLACED LENGTHWISE IN A SINGLE ROW AROUND TE PERIMETER OF THE INLET.
2. BLOCK ENDS SHALL BE PLACED TIGHTLY AGAINST ONE ANOTHER.
3. BARRIER CONCRETE BLOCKS AND GRAVEL SHALLBE BE A MINIMUM OF 12 INCHES HIGH AND A MAXIMUM OF 24 INCHES HIGH.
4. HARDWARE CLOTH OR WIRE MESH SHALL BE PLACED OVER THE OPENINGS IN THE CONCRETE BLOCKS AND EXTEND AT LEAST 12 INCHES AROUND THE OPENINGS TO PREVENT TRANSPORT OF THE AGGREGATE THROUGH THE CONCRETE BLOCKS. WIRE MESH WITH ½" MAXIMUM OPENINGS.
5. STONE FILTER MUST BE CLEANED AND REPLACED IF CLOGGED WITH SEDIMENT.
6. THE TOP OF THE STRUCTURE MUST BE BELOW THE GROUND ELEVATION DOWNSLOPE TO PREVENT RUNOFF FROM BYPASSING THE INLET.
7. MANUFACTURED INLET PROTECTION SYSTEMS MAY BE SUBSTITUTED WITH PRIOR APPROVAL BY THE ENGINEER AND REVIEW BY NH DES.

DETAIL 19
TEMPORARY STORM DRAIN INLET PROTECTION DETAIL
(NOT TO SCALE)

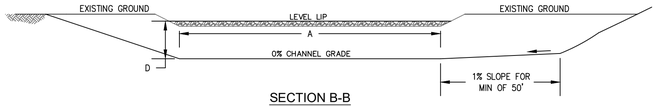


PLAN



SECTION A-A

LEVEL LIP BERM STONE SIZE GRADATION SPECIFICATION	
SIEVE DESIGNATION	PERCENT BY WEIGHT PASSING SQUARE MESH SIEVES
12 IN.	100
6 IN.	84–100
3 IN.	68–83
1 IN.	42–55
NO. 4	8–12



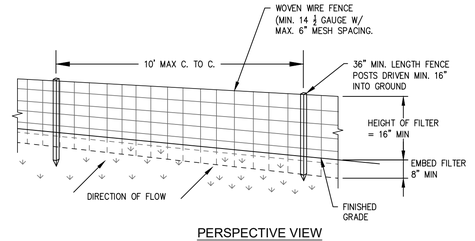
SECTION B-B

LEVEL SPREADER	10–YEAR STORM FLOW	A, FEET	B, FEET	C, FEET	D, FEET	LIP ELEVATION, FEET
1	6.38 CFS	26.0	3.0	3.0	1.5	540
2	3.24 CFS	13.0	3.0	3.0	1.5	538

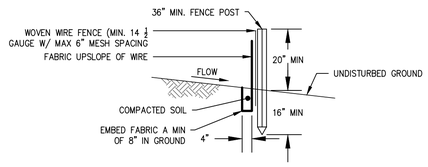
NOTES:

1. CONSTRUCT LEVEL LIP AND SPREADER ON ZERO PERCENT GRADE.
2. LEVEL SPREADER NOT TO BE CONSTRUCTED ON FILL.
3. STORM RUNOFF CONVERTED TO SHEET FLOW SHALL OUTLET ONTO STABILIZED UNDISTURBED AREA.
4. WATER SHALL NOT BE CHANNELIZED IMMEDIATELY BELOW POINT OF DISCHARGE.
5. THE GRASS AREA IMMEDIATELY DOWNGRADIENT FROM THE LEVEL LIP SPREADER SHALL BE MOWED A MAXIMUM OF ONCE PER YEAR.

DETAIL 16
LEVEL LIP SPREADER
(NOT TO SCALE)



PERSPECTIVE VIEW

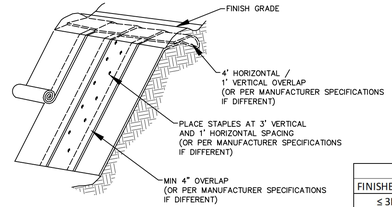


SECTION

NOTES:

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.
2. FILTER CLOTH TO BE TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 14 1/2 GAUGE, 6" MAXIMUM MESH OPENING.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER– LAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
4. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUIVALENT.
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

DETAIL 20
SILT FENCE DETAIL
(NOT TO SCALE)



BLANKET INSTALLATION TABLE		
FINISHED SLOPE	MANUFACTURER	MODEL #
≤ 3H:1V	American Excelsior Co.	Curlex NetFree
≤ 2H:1V	American Excelsior Co.	Curlex I
≤ 1.5H:1V	American Excelsior Co.	Curlex II
≤ 1H:1V	American Excelsior Co.	Curlex III
≤ 0.75H:1V	American Excelsior Co.	Curlex Enforcer

NOTES:

1) SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS. ROUGH UP THE SLOPE PRIOR TO SEEDING AND INSTALLING BLANKETS. BLANKETS SHALL HAVE GOOD SOIL CONTACT.

2) APPLY PERMANENT SEEDING BEFORE PLACING BLANKETS.

3) LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.

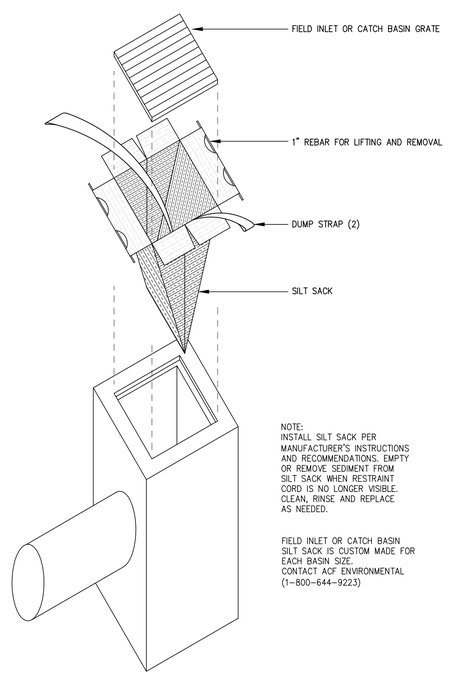
4) INSTALL BLANKETS VERTICALLY DOWNSLOPE.

5) DEGRADABLE STAPLES ARE RECOMMENDED.

6) TRENCH IN THE TOP OF THE SLOPE AND CREATE WATER BREAKS EVERY 50 FEET TO 100 FEET.

7) IF HYDROSEED IS USED IT SHOULD BE APPLIED FROM VARIOUS ANGLES TO PREVENT UNSEEDED AREAS.

DETAIL 17
EROSION CONTROL BLANKET DETAIL
(NOT TO SCALE)



DETAIL 21
CATCH BASIN SILT SACK
(NOT TO SCALE)

PRELIMINARY - NOT FOR CONSTRUCTION

NO.	REVISION	DATE	DRWN.	CHKD	APPRV.
A	ISSUED FOR PERMIT	11/30/16	DGR	TDD	TMH
B	ISSUED FOR REVIEW	12/7/16	DGR	TDD	TMH

SGC Engineering, LLC
A member of the Gault Inspection Group
U.S. WBE

PAR ELECTRICAL CONTRACTORS, INC.

THE NORTHERN PASS
Transmission Business

B

NPT
ROT3–UNDERGROUND ALIGNMENT
EROSION CONTROL DETAILS – 2

DATE: 11/30/2016
SCALE: NOT TO SCALE

DES: TDD | CHK: TDD
DRW: DGR | APR: TMH

TOWN: CLARKSVILLE/PITTSBURG

TRANSMISSION LINE: ROT3

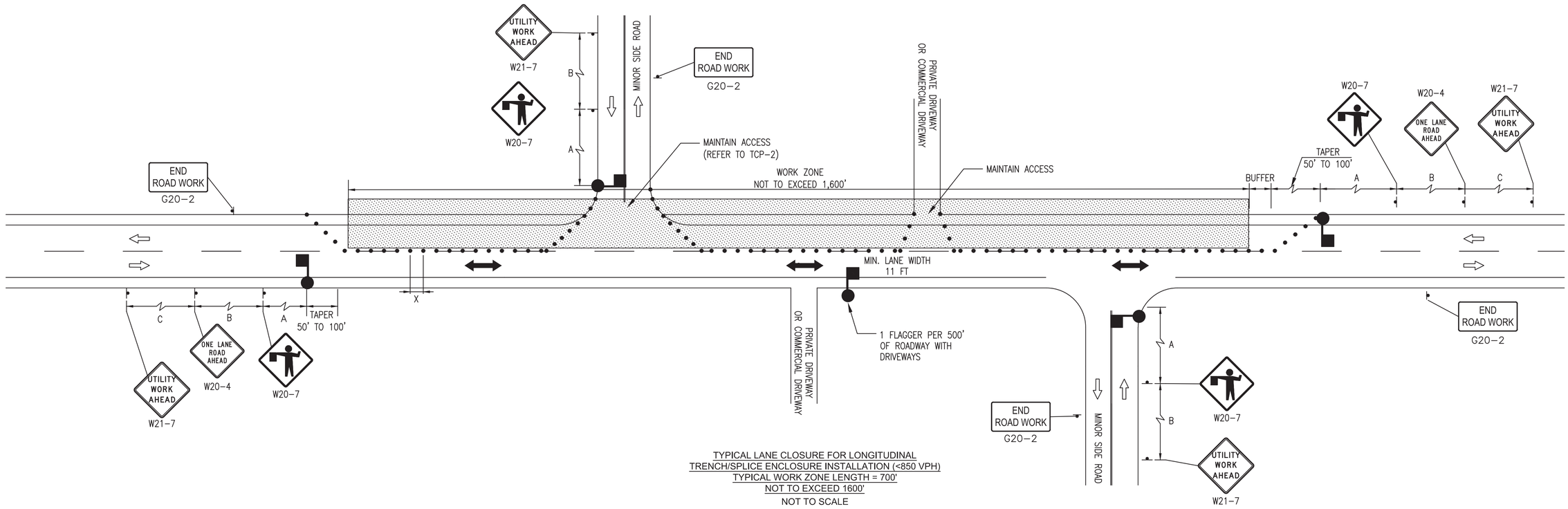
ROT3C506

PRELIMINARY - NOT FOR CONSTRUCTION

LEGEND

- REFLECTORIZED PLASTIC DRUM
- EXISTING TRAVEL LANE
- PROPOSED TRAVEL LANE
- PROPOSED SIGN
- WORK ZONE
- FLAGGER
- TYPE 3 BARRICADE

X = SPACING OF REFLECTORIZED PLASTIC DRUM.
SPACING SHALL EQUAL THE POSTED SPEED LIMIT.
(EXAMPLE: 35 MPH SPEED LIMIT = 35' DRUM SPACING)



TYPICAL LANE CLOSURE FOR LONGITUDINAL
TRENCH/SPLICE ENCLOSURE INSTALLATION (<850 VPH)
TYPICAL WORK ZONE LENGTH = 700'
NOT TO EXCEED 1600'
NOT TO SCALE

QUICK REFERENCE TABLES

Table 6C-1. Recommended Advance Warning Sign Minimum Spacing

Road Type	Distance Between Signs**		
	A	B	C
Urban (low speed)*	100 feet	100 feet	100 feet
Urban (high speed)*	350 feet	350 feet	350 feet
Rural	500 feet	500 feet	500 feet
Expressway / Freeway	1,000 feet	1,500 feet	2,640 feet

* Speed category to be determined by the highway agency
** The column headings A, B, and C are the dimensions shown in Figures 6H-1 through 6H-46. The A dimension is the distance from the transition or point of restriction to the first sign. The B dimension is the distance between the first and second signs. The C dimension is the distance between the second and third signs. (The "first sign" is the sign in a three-sign series that is closest to the TTC zone. The "third sign" is the sign that is furthest upstream from the TTC zone.)

Table 6C-3. Taper Length Criteria for Temporary Traffic Control Zones

Type of Taper	Taper Length
Merging Taper	at least L
Shifting Taper	at least 0.5 L
Shoulder Taper	at least 0.33 L
One-Lane, Two-Way Traffic Taper	50 feet minimum, 100 feet maximum
Downstream Taper	50 feet minimum, 100 feet maximum

Note: Use Table 6C-4 to calculate L

Table 6C-4. Formulas for Determining Taper Length

Speed (S)	Taper Length (L) in feet
40 mph or less	$L = \frac{WS^2}{60}$
45 mph or more	$L = WS$

Where: L = taper length in feet
W = width of offset in feet
S = posted speed limit, or off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed in mph

NO.	REVISION	DATE	DRWN	CHKD	APPRV
6	REV6	-	-	-	-
5	REV5	-	-	-	-
4	REV4	-	-	-	-
3	REV3	-	-	-	-
2	REV2	-	-	-	-
A	REV1	-	-	-	-

Louis Berger

PAR ELECTRICAL CONTRACTORS, INC.

THE NORTHERN PASS
Transmission Business

A

NPT
ROT3
TRAFFIC CONTROL TYPICALS

DATE: mm/dd/yyyy
SCALE: NTS

DES: -
DRW: -
CHK: -
APR: -

TOWN:

TRANSMISSION LINE:
ROT3

MILE NO:

DISCIPLINE/SHT NO.:
-

SHEET OF

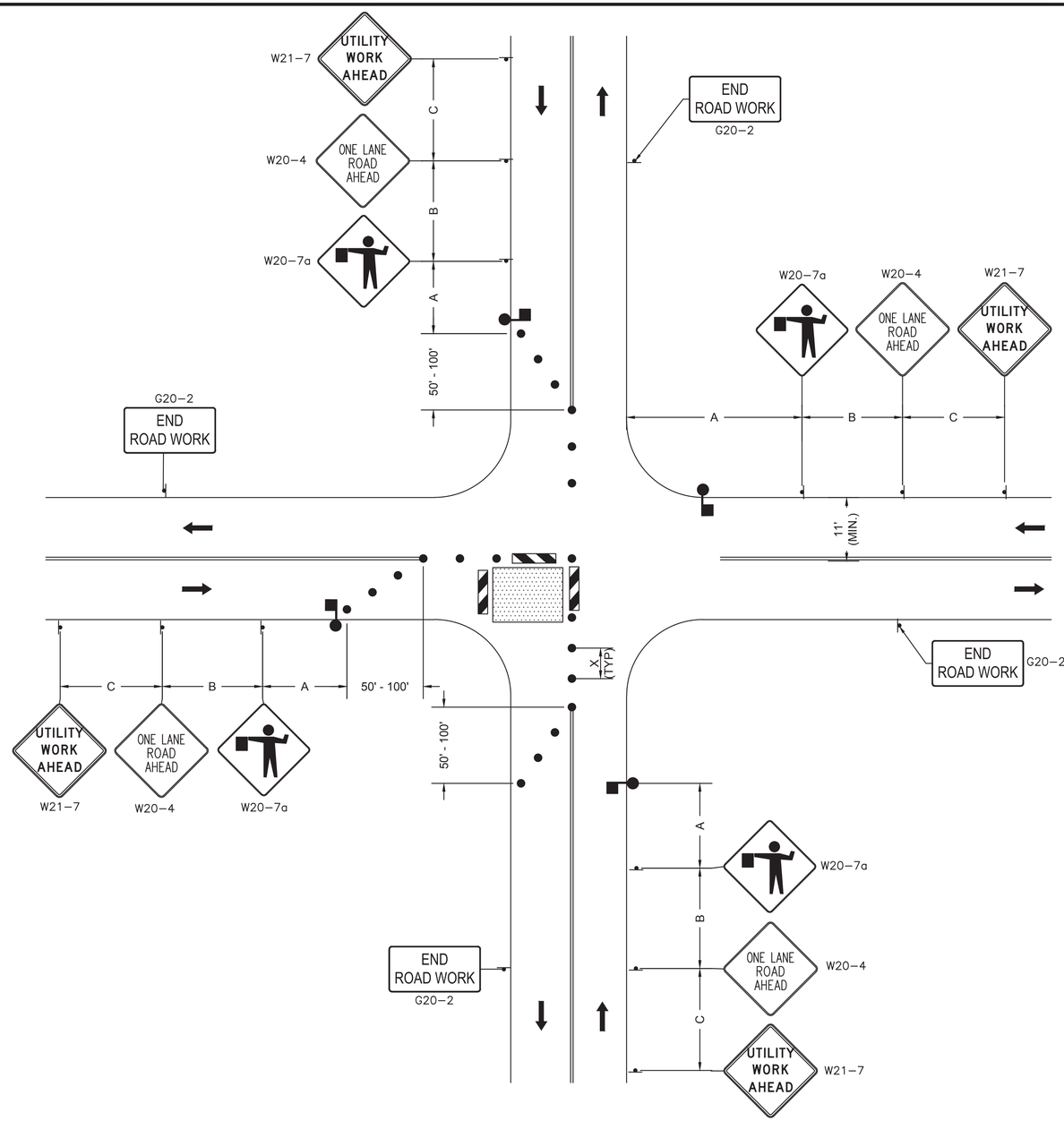
ROT3TCP-1

REVISION: 01/23/2014

LEGEND

- REFLECTORIZED PLASTIC DRUM
- EXISTING TRAVEL LANE
- PROPOSED TRAVEL LANE
- PROPOSED SIGN
- WORK ZONE
- FLAGGER
- TYPE 3 BARRICADE

X = SPACING OF REFLECTORIZED PLASTIC DRUM.
SPACING SHALL EQUAL THE POSTED SPEED LIMIT.
(EXAMPLE: 35 MPH SPEED LIMIT = 35' DRUM SPACING)



TYPICAL TEMPORARY LANE CLOSURE AT INTERSECTIONS
NOT TO SCALE

QUICK REFERENCE TABLES

Table 6C-1. Recommended Advance Warning Sign Minimum Spacing

Road Type	Distance Between Signs**		
	A	B	C
Urban (low speed)*	100 feet	100 feet	100 feet
Urban (high speed)*	350 feet	350 feet	350 feet
Rural	500 feet	500 feet	500 feet
Expressway / Freeway	1,000 feet	1,500 feet	2,640 feet

* Speed category to be determined by the highway agency
** The column headings A, B, and C are the dimensions shown in Figures 6H-1 through 6H-46. The A dimension is the distance from the transition or point of restriction to the first sign. The B dimension is the distance between the first and second signs. The C dimension is the distance between the second and third signs. (The "first sign" is the sign in a three-sign series that is closest to the TTC zone. The "third sign" is the sign that is furthest upstream from the TTC zone.)

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Shoulder Taper	at least 0.33 L
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Downstream Taper	50 feet minimum, 100 feet maximum

Note: Use Table 6C-4 to calculate L

Table 6C-4. Formulas for Determining Taper Length

Speed (S)	Taper Length (L) in feet
40 mph or less	$L = \frac{WS^2}{60}$
45 mph or more	$L = WS$

Where: L = taper length in feet
W = width of offset in feet
S = posted speed limit, or off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed in mph

PRELIMINARY - NOT FOR CONSTRUCTION

NO.	REVISION	DATE	DRWN	CHKD	APPRV
6	REV6	- -	-	-	-
5	REV5	- -	-	-	-
4	REV4	- -	-	-	-
3	REV3	- -	-	-	-
2	REV2	- -	-	-	-
A	REV1	- -	-	-	-

Louis Berger

PAR ELECTRICAL CONTRACTORS, INC.

THE NORTHERN PASS
Transmission Business

A

NPT
ROT3
TRAFFIC CONTROL TYPICALS

DATE: mm/dd/yyyy
SCALE: NTS

DES: - CHK:
DRW: - APR:
TOWN:
TRANSMISSION LINE: ROT3
MILE NO:
DISCIPLINE/SHT NO.: - -
SHEET OF

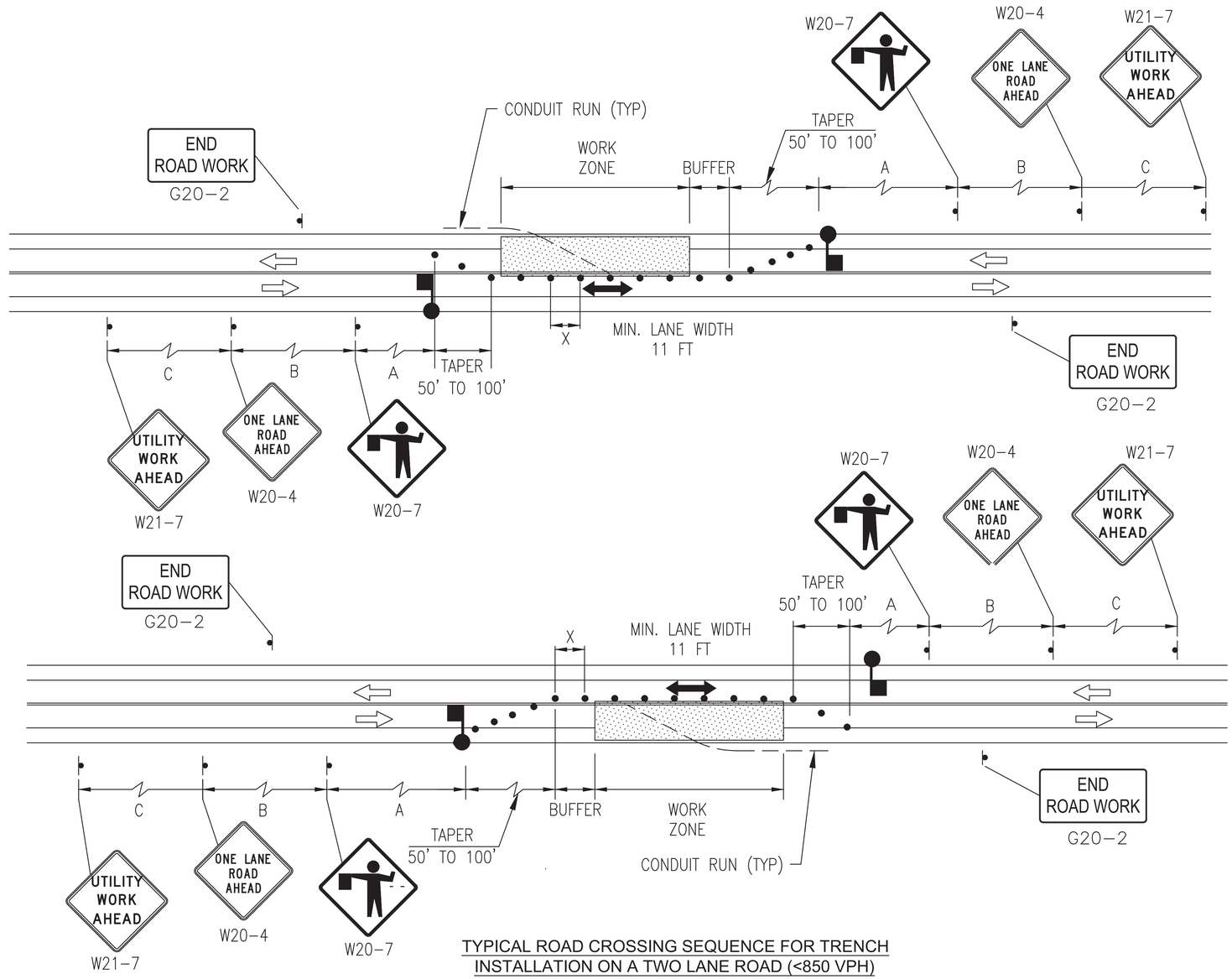
ROT3TCP-2

REVISION: 01/23/2014

LEGEND

- REFLECTORIZED PLASTIC DRUM
- EXISTING TRAVEL LANE
- PROPOSED TRAVEL LANE
- PROPOSED SIGN
- WORK ZONE
- FLAGGER
- TYPE 3 BARRICADE

X = SPACING OF REFLECTORIZED PLASTIC DRUM.
SPACING SHALL EQUAL THE POSTED SPEED LIMIT.
(EXAMPLE: 35 MPH SPEED LIMIT = 35' DRUM SPACING)



TYPICAL ROAD CROSSING SEQUENCE FOR TRENCH
INSTALLATION ON A TWO LANE ROAD (<850 VPH)
TYPICAL WORK ZONE LENGTH = 200'
NOT TO EXCEED 1600'
NOT TO SCALE

QUICK REFERENCE TABLES

Table 6C-1. Recommended Advance Warning Sign Minimum Spacing

Road Type	Distance Between Signs**		
	A	B	C
Urban (low speed)*	100 feet	100 feet	100 feet
Urban (high speed)*	350 feet	350 feet	350 feet
Rural	500 feet	500 feet	500 feet
Expressway / Freeway	1,000 feet	1,500 feet	2,640 feet

* Speed category to be determined by the highway agency
** The column headings A, B, and C are the dimensions shown in Figures 6H-1 through 6H-46. The A dimension is the distance from the transition or point of restriction to the first sign. The B dimension is the distance between the first and second signs. The C dimension is the distance between the second and third signs. (The "first sign" is the sign in a three-sign series that is closest to the TTC zone. The "third sign" is the sign that is furthest upstream from the TTC zone.)

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Downstream Taper	50 feet minimum, 100 feet maximum

Note: Use Table 6C-4 to calculate L

Table 6C-4. Formulas for Determining Taper Length

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40 mph or less	$L = \frac{WS^2}{60}$
45 mph or more	$L = WS$

Where: L = taper length in feet
W = width of offset in feet
S = posted speed limit, or off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed in mph

PRELIMINARY - NOT FOR CONSTRUCTION

NO.	REVISION	DATE	DRWN	CHKD	APPRV.
6	REV6				
5	REV5				
4	REV4				
3	REV3				
2	REV2				
1	REV1				

Louis Berger

PAR ELECTRICAL CONTRACTORS, INC.

THE NORTHERN PASS

Transmission Business

A

NPT
ROT3
TRAFFIC CONTROL TYPICALS

DATE: mm/dd/yyyy
SCALE: NTS

DES: . CHK:
DRW: . APR:
TOWN:
TRANSMISSION LINE: ROT3
MILE NO:
DISCIPLINE/SHT NO.: .
SHEET OF

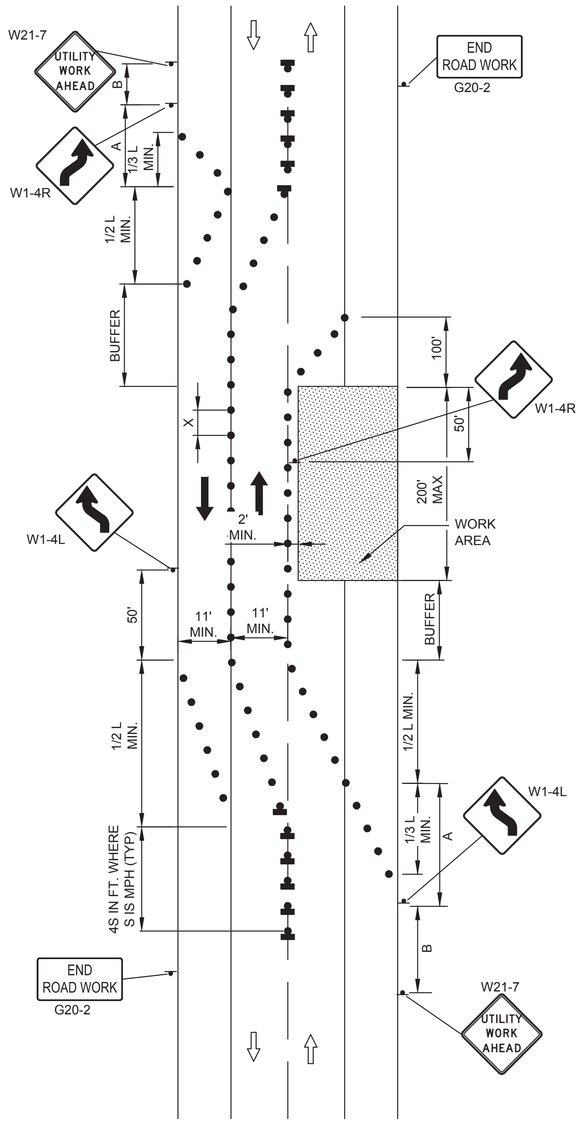
ROT3TCP-3

REVISION: 01/23/2014

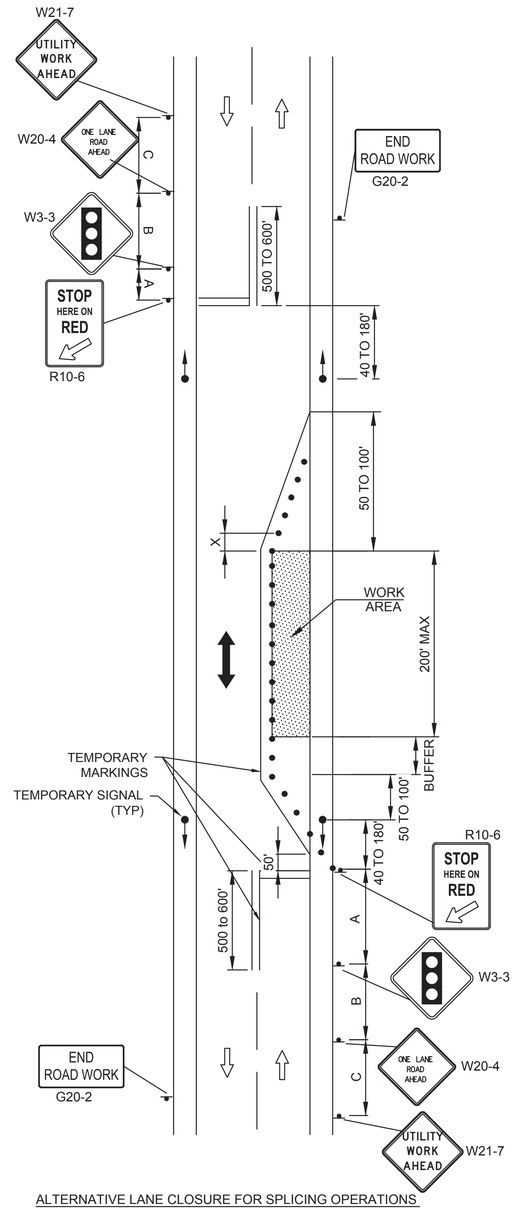
LEGEND

- REFLECTORIZED PLASTIC DRUM
- EXISTING TRAVEL LANE
- PROPOSED TRAVEL LANE
- PROPOSED SIGN
- WORK ZONE
- FLAGGER
- TYPE 3 BARRICADE

X = SPACING OF REFLECTORIZED PLASTIC DRUM.
SPACING SHALL EQUAL THE POSTED SPEED LIMIT.
(EXAMPLE: 35 MPH SPEED LIMIT = 35' DRUM SPACING)



PREFERRED: LANE SHIFT FOR SPLICING OPERATIONS
NOT TO SCALE



ALTERNATIVE LANE CLOSURE FOR SPLICING OPERATIONS
NOT TO SCALE

QUICK REFERENCE TABLES

Table 6C-1. Recommended Advance Warning Sign Minimum Spacing

Road Type	Distance Between Signs**		
	A	B	C
Urban (low speed)*	100 feet	100 feet	100 feet
Urban (high speed)*	350 feet	350 feet	350 feet
Rural	500 feet	500 feet	500 feet
Expressway / Freeway	1,000 feet	1,500 feet	2,640 feet

* Speed category to be determined by the highway agency
** The column headings A, B, and C are the dimensions shown in Figures 6H-1 through 6H-46. The A dimension is the distance from the transition or point of restriction to the first sign. The B dimension is the distance between the first and second signs. The C dimension is the distance between the second and third signs. (The "first sign" is the sign in a three-sign series that is closest to the TTC zone. The "third sign" is the sign that is furthest upstream from the TTC zone.)

Table 6C-3. Taper Length Criteria for Temporary Traffic Control Zones

Type of Taper	Taper Length
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Note: Use Table 6C-4 to calculate L

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Speed (S)	Taper Length (L) in feet
40 mph or less	$L = \frac{WS^2}{60}$
45 mph or more	$L = WS$

Where: L = taper length in feet
W = width of offset in feet
S = posted speed limit, or off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed in mph

Value of Taper Length (L)															
		Width of Offset in Feet (W)													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Posted Speed Limit (S)	20	6.7 ft	13.3 ft	20.0 ft	26.7 ft	33.3 ft	40.0 ft	46.7 ft	53.3 ft	60.0 ft	66.7 ft	73.3 ft	80.0 ft	86.7 ft	93.3 ft
	25	10.4 ft	20.8 ft	31.3 ft	41.7 ft	52.1 ft	62.5 ft	72.9 ft	83.3 ft	93.8 ft	104.2 ft	114.6 ft	125.0 ft	135.4 ft	145.8 ft
	30	15.0 ft	30.0 ft	45.0 ft	60.0 ft	75.0 ft	90.0 ft	105.0 ft	120.0 ft	135.0 ft	150.0 ft	165.0 ft	180.0 ft	195.0 ft	210.0 ft
	35	20.4 ft	40.8 ft	61.3 ft	81.7 ft	102.1 ft	122.5 ft	142.9 ft	163.3 ft	183.8 ft	204.2 ft	224.6 ft	245.0 ft	265.4 ft	285.8 ft
	40	26.7 ft	53.3 ft	80.0 ft	106.7 ft	133.3 ft	160.0 ft	186.7 ft	213.3 ft	240.0 ft	266.7 ft	293.3 ft	320.0 ft	346.7 ft	373.3 ft
	45	45.0 ft	90.0 ft	135.0 ft	180.0 ft	225.0 ft	270.0 ft	315.0 ft	360.0 ft	405.0 ft	450.0 ft	495.0 ft	540.0 ft	585.0 ft	630.0 ft
	50	50.0 ft	100.0 ft	150.0 ft	200.0 ft	250.0 ft	300.0 ft	350.0 ft	400.0 ft	450.0 ft	500.0 ft	550.0 ft	600.0 ft	650.0 ft	700.0 ft
	55	55.0 ft	110.0 ft	165.0 ft	220.0 ft	275.0 ft	330.0 ft	385.0 ft	440.0 ft	495.0 ft	550.0 ft	605.0 ft	660.0 ft	715.0 ft	770.0 ft
	60	60.0 ft	120.0 ft	180.0 ft	240.0 ft	300.0 ft	360.0 ft	420.0 ft	480.0 ft	540.0 ft	600.0 ft	660.0 ft	720.0 ft	780.0 ft	840.0 ft
	65	65.0 ft	130.0 ft	195.0 ft	260.0 ft	325.0 ft	390.0 ft	455.0 ft	520.0 ft	585.0 ft	650.0 ft	715.0 ft	780.0 ft	845.0 ft	910.0 ft
	70	70.0 ft	140.0 ft	210.0 ft	280.0 ft	350.0 ft	420.0 ft	490.0 ft	560.0 ft	630.0 ft	700.0 ft	770.0 ft	840.0 ft	910.0 ft	980.0 ft

PRELIMINARY - NOT FOR CONSTRUCTION

NO.	REVISION	DATE	DRWN	CHKD	APPRV.
6	REV6				
5	REV5				
4	REV4				
3	REV3				
2	REV2				
1	REV1				

Louis Berger

PAR ELECTRICAL CONTRACTORS, INC.

THE NORTHERN PASS
Transmission Business

A

NPT
ROT3
TRAFFIC CONTROL TYPICALS

DATE: mm/dd/yyyy
SCALE: NTS

DES.: - CHK.:
DRW.: - APP.:
TOWN:
TRANSMISSION LINE: ROT3
MILE NO.: -
DISCIPLINE/SHT NO.: -
SHEET OF

ROT3TCP-4

REVISION: 01/23/2014

PRELIMINARY - NOT FOR CONSTRUCTION

NORTH

HDD ENTRY AREA WORK SPACE (27'X400'). SEE TCP-SERIES DRAWINGS FOR TRAFFIC CONTROL DETAILS

HDD ROT3b ENTRY
STA 17+61.4
E: 1036490.5154
N: 918459.5711

HDD ROT3a ENTRY
STA 17+61.4
E: 1036496.5086
N: 918458.1827

RIGHT-OF-WAY (TYP.)

PCH
E: 1036510.4706
N: 918620.5571

PCH
E: 1036535.9300
N: 918670.4500

PTH
E: 1036577.6084
N: 918893.8793

PTH
E: 1036584.0800
N: 918850.4700

BRIDGE
(NHDOT DESIGNATION 030/066)

PROPERTY LINE (TYP.)

CONNECTICUT RIVER

Conc Mon Nhhd

"C-L"CB TF=1129.86

"C-L"CB TF=1129.95 Inv=1126.9

Inv=1125.5

Inv=1125.4

Inv=1124.2

NHE #787.5

NHE #788

HA3

HA4

N/F SOCIETY FOR THE PROTECTION OF NEW HAMPSHIRE FORESTS U.S. ROUTE 3 TMP# R7-1-1 DB 1265 PG 783

N/F RENEWABLE PROPERTIES, INC. U.S. ROUTE 3 TMP# R7-1-781 1335 PG

SHEET ROT3009-1
SHEET ROT3009-2

SCALE: 1"=30'

PLAN

30' 0' 10' 20' 30'

SHEET ROT3009-2
SHEET ROT3009-1

ROT3 HDD PLAN LENGTH: 1,000.4-FT
ROT3 HDD PATH LENGTH: 1,013.7-FT

HDD ROT3a/b ENTRY
STA 17+61.4
-14 DEGREES

APPROXIMATE GROUND SURFACE

EXISTING 15" RCP CULVERT

CONNECTICUT RIVER

APPROXIMATE RIVER BOTTOM (BRIDGE NOT SHOWN)

GLACIOFLUVIAL DEPOSITS

APPROXIMATE TOP OF BEDROCK

WEATHERED BEDROCK

BEDROCK (PHYLLITE)

PVC
STA 19+13.2

HDD BORE PATH

RADIUS: 1200-FT

PVT
STA 22+03.5
EL. 1,060.0

PVC
STA 22+41.7
EL. 1,060.0

RADIUS: 1200-FT

1200 1195 1190 1185 1180 1175 1170 1165 1160 1155 1150 1145 1140 1135 1130 1125 1120 1115 1110 1105 1100 1095 1090 1085 1080 1075 1070 1065 1060 1055 1050 1045 1040 1035 1030 1025 1020

1132.8 1134.4 1134.2 1134.1 1133.8 1134.1 1133.8 1132.2 1131.0 1130.5 1130.3 1130.3 1130.2 1130.2 1130.4 1117.3 1116.9 1117.0 1118.4

15+00 15+50 16+00 16+50 17+00 17+50 18+00 18+50 19+00 19+50 20+00 20+50 21+00 21+50 22+00 22+50 23+00 23+50 24+00

NOTE: PROFILE DETAILS SHOWN FOR ROT3a. PROFILE DEPTH FOR BOTH BORINGS IS THE SAME.

PROFILE

SCALE: 1"=30'

30' 0' 10' 20' 30'

NO.	REVISION	DESIGN	DRWN	CHKD	APPRD
	PRELIMINARY				BD
		11/14/16	NS		

BRIERLEY ASSOCIATES
Creating Space Underground

PAR ELECTRICAL CONTRACTORS, INC.

THE NORTHERN PASS
Transmission Business

NPT
UNDERGROUND ALIGNMENT
TRENCHLESS CROSSING ROT3

DATE: 10/7/2016

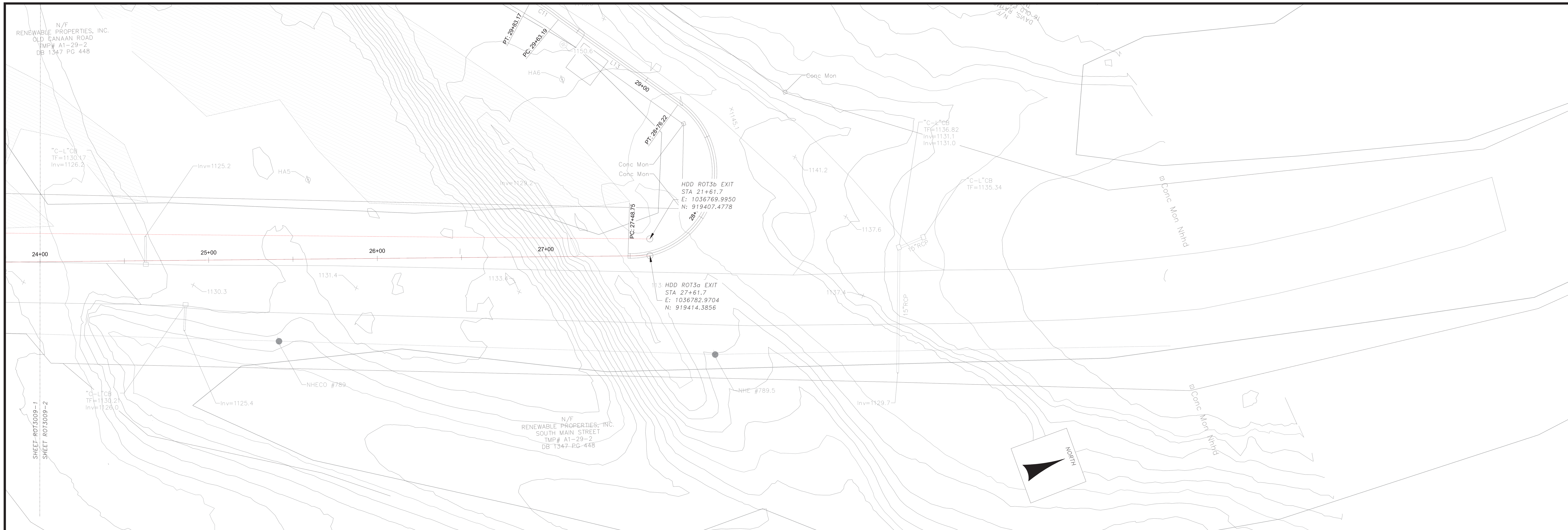
SCALE: 1" = 30'

DES: CHK:
DRW: APR:

TOWN: CLARKSVILLE/PITTSBURG

TRANSMISSION LINE:
ROT3

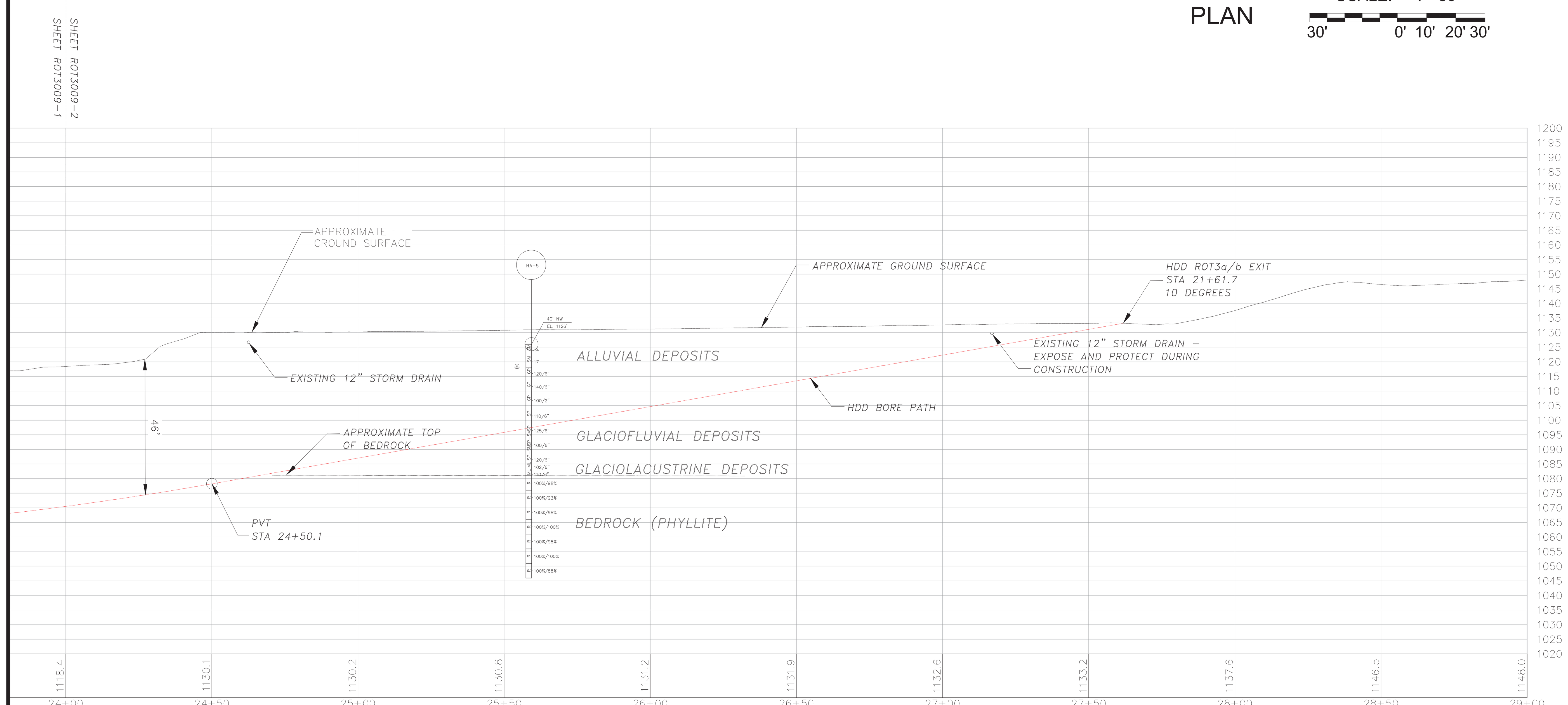
ROT3009-1


N/F
RENEWABLE PROPERTIES, INC.
OLD CANAAN ROAD
TMP# A1-29-2
DB 1347 PG 448
PT: 29+83.17
PC: 29+83.19
29+00
PT: 28+78.22
Conc Mon
HDD ROT3b EXIT
STA 21+61.7
E: 1036769.9950
N: 919407.4778
PC: 27+48.75
24+00
25+00
26+00
27+00
HDD ROT3a EXIT
STA 27+61.7
E: 1036782.9704
N: 919414.3856
NHECO #789
NHC #789.5
N/F
RENEWABLE PROPERTIES, INC.
SOUTH MAIN STREET
TMP# A1-29-2
DB 1347 PG 448
SHEET ROT3009-1
SHEET ROT3009-2
NORTH
Conc Mon Nhhd

PLAN

SCALE: 1"=30'

30' 0' 10' 20' 30'


SHEET ROT3009-1
SHEET ROT3009-2
APPROXIMATE GROUND SURFACE
APPROXIMATE GROUND SURFACE
HDD ROT3a/b EXIT
STA 21+61.7
10 DEGREES
ALLUVIAL DEPOSITS
EXISTING 12" STORM DRAIN
EXISTING 12" STORM DRAIN - EXPOSE AND PROTECT DURING CONSTRUCTION
HDD BORE PATH
46'
APPROXIMATE TOP OF BEDROCK
GLACIOFLUVIAL DEPOSITS
GLACIOLACUSTRINE DEPOSITS
BEDROCK (PHYLLITE)
PVT
STA 24+50.1
24+00
24+50
25+00
25+50
26+00
26+50
27+00
27+50
28+00
28+50
29+00

PROFILE

SCALE: 1"=30'

30' 0' 10' 20' 30'

PRELIMINARY - NOT FOR CONSTRUCTION

NO.	REVISION	DATE	DRWN	CHKD	APPRV
	PRELIMINARY DESIGN	11/14/16	NS		BD

BRIERLEY ASSOCIATES
Creating Space Underground

PAR ELECTRICAL CONTRACTORS, INC.

THE NORTHERN PASS

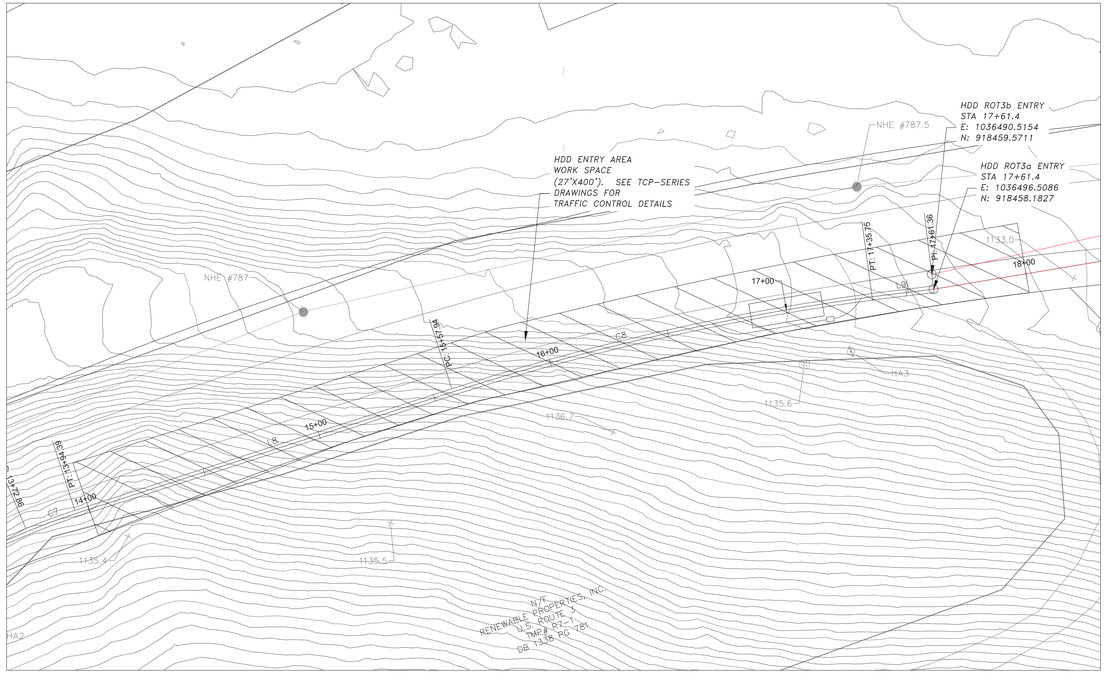
Transmission Business

NPT
UNDERGROUND ALIGNMENT
TRENCHLESS CROSSING ROT3

TOWN: CLARKSVILLE/PITTSBURG

TRANSMISSION LINE: ROT3

ROT3009-2



SCALE: 1"=30'

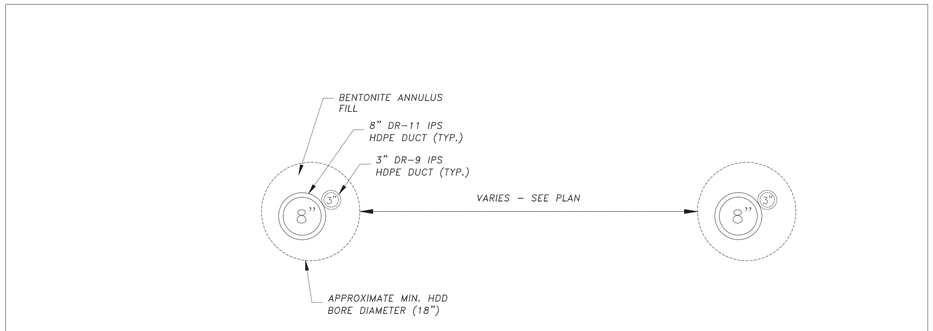
30' 0' 10' 20' 30'

HDD ROT3 ENTRY AREA WORK SPACE

SCALE: 1"=100'

100' 0' 100'

HDD ROT3 EXIT AREA WORK SPACE



DETAIL A - ROT3 HDD DUCT BUNDLE

NTS

PRELIMINARY - NOT
FOR CONSTRUCTION

NO.	REVISION	DESIGN	DRWN	CHKD	APPRV
	PRELIMINARY	NS			BD
		11/14/16			

BRIERLEY ASSOCIATES
Creating Space Underground

PAR ELECTRICAL CONTRACTORS, INC.

THE NORTHERN PASS

Transmission Business

NPT
UNDERGROUND ALIGNMENT
TRENCHLESS CROSSING ROT3

DATE: 11/14/2016

SCALE: 1" = 30'

DES:	CHK:
DRW:	APR:

TOWN:
CLARKSVILLE/PITTSBURG

TRANSMISSION LINE:

ROT3

ROT3009-3

NOTES:

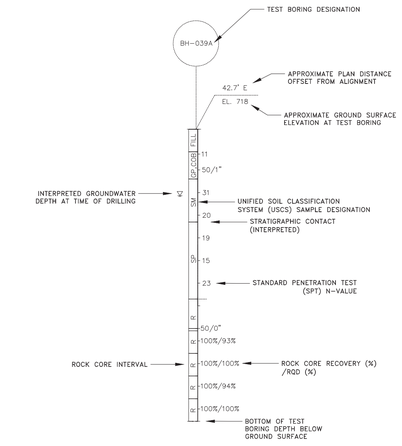
GENERAL

1. VERIFY ALL DIMENSIONS AND ELEVATIONS SHOWN ON THESE PLANS PRIOR TO INSTALLING THE ALIGNMENTS. IF DISCREPANCIES ARE NOTED, NOTIFY BRIERLEY SO THAT APPROPRIATE REVISIONS CAN BE MADE TO THE HDD DESIGN.
2. IF UTILITIES WILL INTERFERE WITH INSTALLATION OF THE ALIGNMENTS AS SHOWN ON THESE DRAWINGS, NOTIFY BRIERLEY SO THAT APPROPRIATE REVISIONS CAN BE MADE TO THE HDD DESIGN.
3. PERFORM HDD CONSTRUCTION IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS AND CONFORM TO ALL APPLICABLE SAFETY REGULATIONS INCLUDING THE PROVISIONS OF FEDERAL OSHA.
4. PROVIDE PROTECTIVE BARRIER AROUND ALL EXCAVATIONS THAT CONFORMS TO ALL APPLICABLE SAFETY REGULATIONS.
5. ALL UTILITIES DISCOVERED DURING DESIGN ARE INDICATED ON THE PROJECT DRAWINGS. THE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION, SIZE AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO THE START OF ANY CONSTRUCTION. ALL UTILITIES WITHIN 15 FEET OF THE DRILL PATH SHALL BE EXPOSED AND PROTECTED DURING CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION BE AGREED TO BY THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
6. THE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING DIGSAFE AT 811, AT LEAST 72 HOURS BEFORE DIGGING OR DRILLING AND SHALL MAINTAIN AN ACTIVE PERMIT DURING ALL SUBSURFACE WORK. A COPY OF THIS PERMIT SHALL BE ONSITE AND AVAILABLE FOR VIEWING BY THE OWNER AND OWNER'S REPRESENTATIVES DURING ALL SUBSURFACE WORK.
7. REFER TO TEST BORING LOGS FOR SPECIFIC DETAILS OF SUBSURFACE CONDITIONS ENCOUNTERED.
8. ACTUAL SOIL CONDITIONS MAY VARY SIGNIFICANTLY FROM THOSE INDICATED ON THE PROFILES. SUBCONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING EXISTING SUBSURFACE INFORMATION, AND SELECTING THE APPROPRIATE MEANS AND METHODS FOR COMPLETING THE WORK.
9. THE SUBCONTRACTOR SHALL VERIFY PROJECT COORDINATES, AZIMUTHS AND ELEVATIONS PRIOR TO CONSTRUCTION.
10. ALL DIRECTIONAL DRILLING SHALL BE COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, AND SPECIFICATION SECTION 16840 - HORIZONTAL DIRECTIONAL DRILL INSTALLATION.
11. SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTAINMENT, CLEANUP AND DISPOSAL OF ALL DRILLING FLUIDS IN ACCORDANCE WITH APPROVED DRILL FLUID MANAGEMENT AND CONTINGENCY RELEASE PLAN, INCLUDING INADVERTENT SURFACE RETURNS.
12. SUBCONTRACTOR SHALL BE RESPONSIBLE FOR ALL NECESSARY TRAFFIC CONTROL.
13. THE PLANS AND PROFILES WERE DEVELOPED INCORPORATING THE INFORMATION AVAILABLE AT THE TIME OF DESIGN.

SITE LEGEND

- ELEVATION CONTOUR
- EX. EDGE OF PAVEMENT
- PROPERTY LINES
- R/W — RIGHT OF WAY LIMIT
- OHW — EX. OVERHEAD ELECTRIC
- EX. BUILDING
- W — EX. WATER
- S — EX. SANITARY
- EX. UTILITY POLE
- SD — EX. STORM DRAIN
- G — EX. GAS
- C — EX. COMMUNICATIONS
- E — EX. ELECTRIC
- X — EX. FENCE
- HDD ENTRY AREA WORK SPACE

TEST BORING LEGEND



PRELIMINARY - NOT FOR CONSTRUCTION

NO.	REVISION	DESIGN	DRAWN	CHKD	APPRV
	PRELIMINARY		NS		BD
		DATE	11/15/16		

BRIERLEY ASSOCIATES
Creating Space Underground

PAR ELECTRICAL CONTRACTORS, INC.

THE NORTHERN PASS
Transmission Business

NPT
UNDERGROUND ALIGNMENT
TRENCHLESS CROSSINGS

DATE: 11/15/2016
SCALE: 1" = 30'

DES:	CHK:
DRW:	APR:

TOWN: WOODSTOCK/EASTON

TRANSMISSION LINE:
ROT3

ROT3G001