

STATE OF VERMONT
AGENCY OF TRANSPORTATION



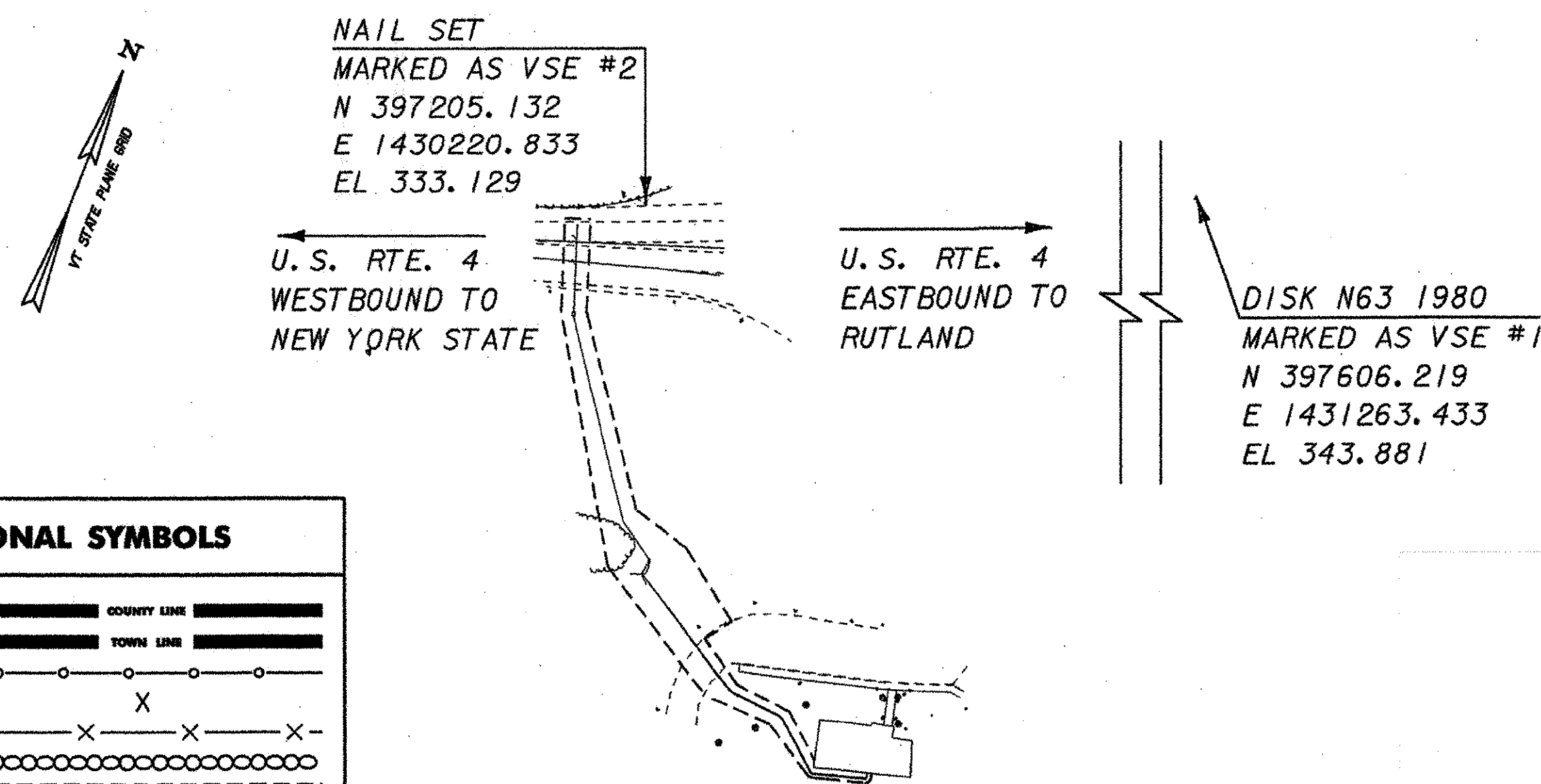
PROPOSED IMPROVEMENT

ROADWAY WEATHER INFORMATION SYSTEMS
TOWN OF FAIR HAVEN
COUNTY OF RUTLAND

U.S. ROUTE 4 - VERMONT WELCOME CENTER

PROJECT LOCATION: EXIT US RTE. 4 EASTBOUND AT EXIT 1, APPROXIMATELY 0.25 MILES TURN RIGHT ON VERMONT WELCOME COURT. THE VERMONT WELCOME CENTER IS LOCATED ON THE SOUTHERN SIDE AT THE END OF THE ROAD.

PROJECT DESCRIPTION: SITE PREPARATION FOR A ROADWAY WEATHER INFORMATION SYSTEM, EQUIPPED WITH TELEPHONE AND ELECTRICAL SERVICES.

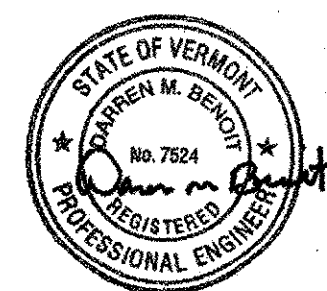


CONVENTIONAL SYMBOLS

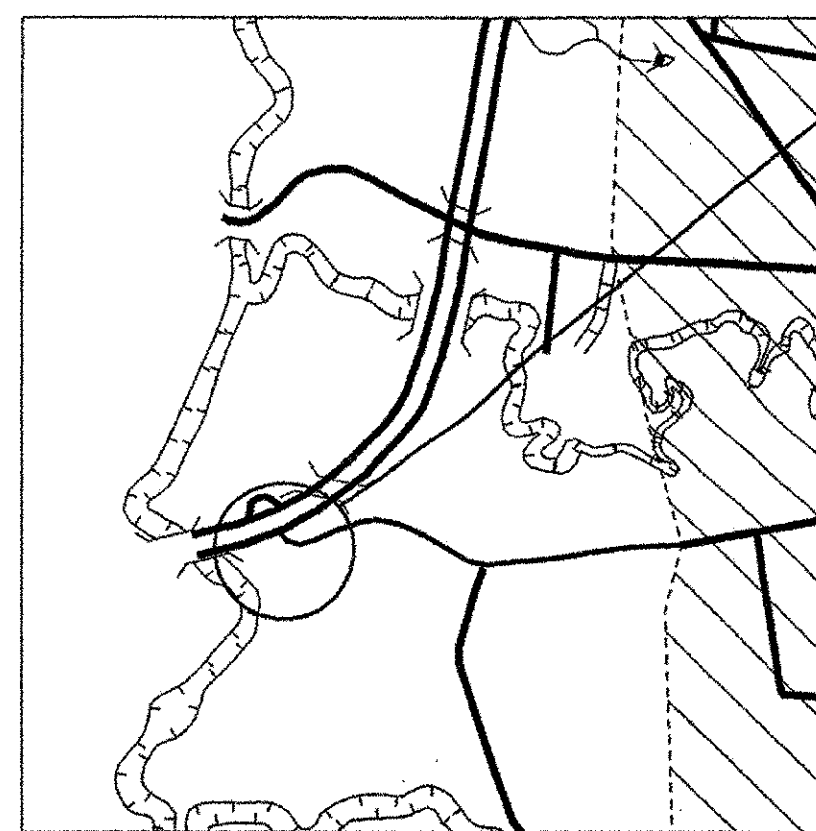
COUNTY LINE	— — — — —
TOWN LINE	— — — — —
LIMITS OF ACCESS	— — — — —
POINT OF ACCESS	X
FENCE LINE	X — X — X — X —
STONE WALL	— — — — —
TRAVELED WAY	— — — — —
GUARD RAIL	— — — — —
RAILROAD	— — — — —
SURVEY LINE	— — — — —
CULVERT	— — — — —
POWER POLE	⊕
TELEPHONE POLE	⊕
TREES	⊙
CONTROL OF ACCESS	— — — — —
PROPERTY LINE	— — — — —
R.O.W. TAKING LINE	— — — — —
SLOPE RIGHTS	SR
TOP OF CUT	— — — — —
TOE OF SLOPE	— — — — —

SURVEYED BY: TOPOGRAPHIC SURVEY BY: VSE DATE: 06/06
SURVEY CONTROL BY: VSE DATE: 06/06

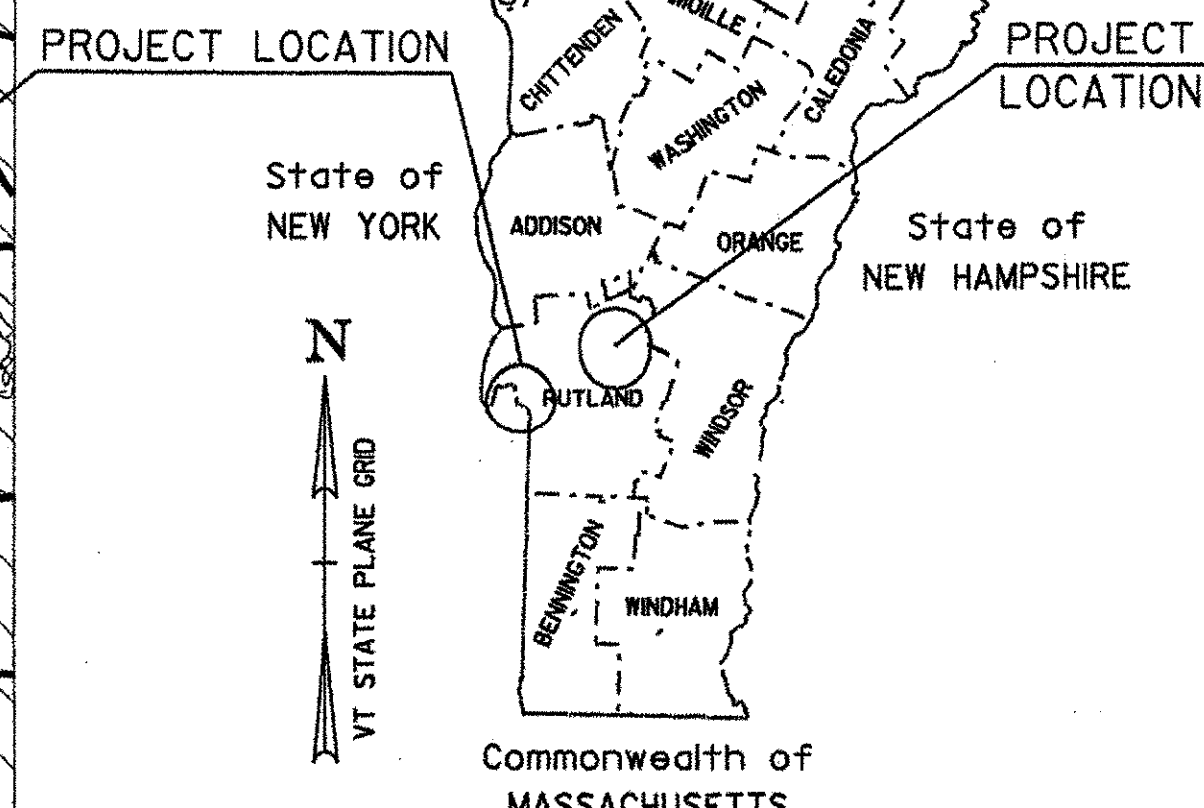
DATUM
VERTICAL NAVD 88 (US FEET)
HORIZONTAL NAD 83 (1996) VT SPC (US FEET)



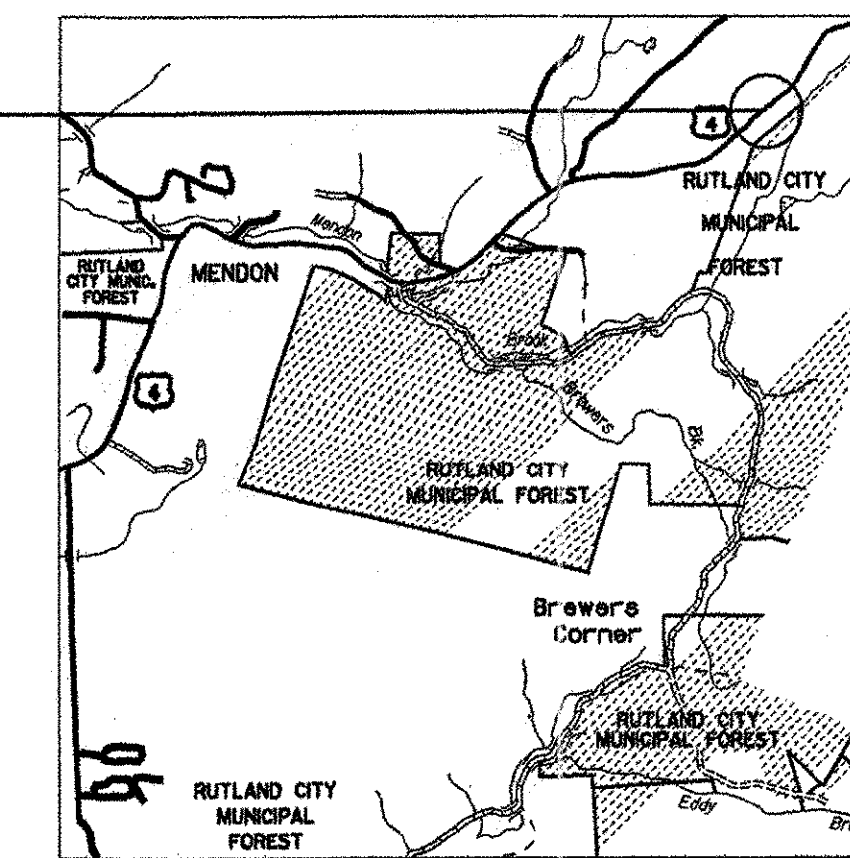
FAIR HAVEN



CANADA



MENDON



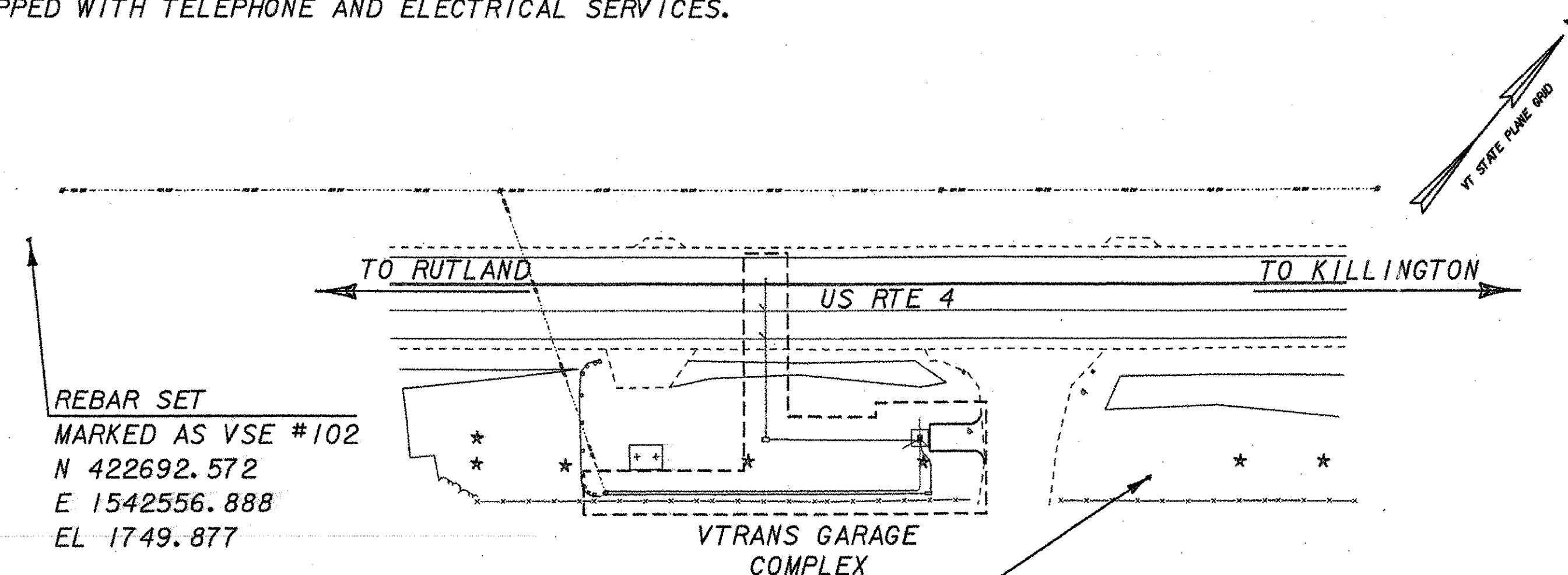
INFORMATION SYSTEMS

TOWN OF MENDON
COUNTY OF RUTLAND

U.S. ROUTE 4 - VTRANS GARAGE

PROJECT LOCATION: START AT INTERSECTION OF US RTE. 4 & US RTE. 7 AND GO EAST ON US RTE. 4 APPROXIMATELY 7.0 MILES. THE VTRANS GARAGE IS LOCATED ON THE RIGHT (SOUTHERLY) SIDE OF THE ROAD.

PROJECT DESCRIPTION: SITE PREPARATION FOR A ROADWAY WEATHER INFORMATION SYSTEM, EQUIPPED WITH TELEPHONE AND ELECTRICAL SERVICES.



RECORD PLANS

CONTRACTOR: PIKE INDUSTRIES, INC. - BERLIN, VT
RESIDENT ENGINEER: JOSH HULETT
CONSTRUCTION BEGAN: NOVEMBER 5, 2007
CONSTRUCTION COMPLETE: JUNE 6, 2008
RECORD PLANS BY: JOSH HULETT & NICK GARBACIK

I HEREBY CERTIFY THAT ALL THE CONSTRUCTION REQUIRED BY THIS SET OF DRAWINGS HAS BEEN ACCOMPLISHED AS INDICATED HEREIN.

BY *Josh Hulett* RESIDENT ENGINEER
DATE 1/14/2009

NOTE: Any further information concerning final quantities, amounts or other details relative to this project may be found at Central Files in the electronic archives.

THESE PLANS ARE SUBJECT TO SUCH ENGINEERING CHANGES AS MAY BE REQUIRED BY THE FEDERAL HIGHWAY ADMINISTRATION OR THE DIRECTOR OF THE OPERATIONS DIVISION. CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2006, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JUNE 15, 2006 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

DIRECTOR OF OPERATIONS

APPROVED *Sam* DATE 8/10/07

PROJECT MANAGER: DAN GRAHOVAC

PROJECT: FAIR HAVEN: RWIS1
MENDON: RWIS1

SHEET 1 OF 12 SHEETS

INDEX OF SHEETS

1. TITLE SHEET
2. INDEX AND LIST OF STANDARDS
3. VENDOR EQUIPMENT AND BILL OF MATERIALS
4. SILT FENCE DETAIL
5. SITE PLAN & RWIS LAYOUT - FAIR HAVEN
6. FAIR HAVEN GENERAL NOTES
7. FAIR HAVEN FOUNDATION DETAILS
8. FAIR HAVEN RWIS INSTALLATION DETAILS
9. SITE PLAN & RWIS LAYOUT - MENDON
10. MENDON GENERAL NOTES
11. MENDON FOUNDATION DETAILS
12. MENDON RWIS INSTALLATION DETAILS

FAIR HAVEN
LIST OF STANDARDS DATED

STANDARD DRAWING E-100	1/2/04
STANDARD DRAWING E-100A	1/2/04
STANDARD DRAWING E-101	5/30/03
STANDARD DRAWING E-102	6/30/03
STANDARD DRAWING E-102A	5/01/04
STANDARD DRAWING E-106	3/1/04
STANDARD DRAWING E-110	8/8/95
STANDARD DRAWING E-111	3/11/97
STANDARD DRAWING E-119	3/1/04
STANDARD DRAWING E-172	8/9/95
STANDARD DRAWING E-173	8/9/95
STANDARD DRAWING E-175	11/17/93

MENDON
LIST OF STANDARDS DATED

STANDARD DRAWING E-100	1/2/04
STANDARD DRAWING E-100A	1/2/04
STANDARD DRAWING E-101	5/30/03
STANDARD DRAWING E-102	6/30/03
STANDARD DRAWING E-102A	5/01/04
STANDARD DRAWING E-106	3/1/04
STANDARD DRAWING E-110	8/8/95
STANDARD DRAWING E-111	3/11/97
STANDARD DRAWING E-119	3/1/04
STANDARD DRAWING E-172	8/9/95
STANDARD DRAWING E-173	8/9/95
STANDARD DRAWING E-175	11/17/93

PROJECT:	FAIR HAVEN: RWIS MENDON: RWIS
FILE NAME: 010000Ind.dgn	PLOT DATE: 10-AUG-2007
PROJECT LEADER: D. GRAHOVAC	DRAWN BY: MAL
DESIGNED BY: BMB	CHECKED BY: MDL
INDEX AND LIST OF STANDARDS	SHEET 2 OF 12

FAIR HAVEN

UTILITY INSTALLATION : ELECTRICAL POWER SERVICE

CONTRACTOR IS TO PERFORM ALL ELECTRICAL SERVICE INSTALLATION AS REQUIRED. ELECTRICAL POWER SERVICE FOR THE FAIR HAVEN RWIS SHALL BE OBTAINED FROM THE EXISTING SERVICE PANEL LOCATED IN THE WELCOME CENTER UTILITY ROOM. THE CONTRACTOR AND HIS ELECTRICAL SUBCONTRACTOR SHALL PROVIDE BREAKER(S) AND CONDUIT WITH WIRES FROM THE PANEL THROUGH THE EXTERIOR WALL OF THE UTILITY ROOM FROM THERE THROUGH THE UTILITY TRENCH CONDUIT TO THE RWIS TOWER AS SHOWN BY THE ROUTING ON SHEET 5 OF 12. ALL COST ASSOCIATED WITH THE INSTALLATION OF POWER SERVICE FOR THIS LOCATION IS CONSIDERED TO BE AN INCIDENTAL COST TO THE OVERALL PROJECT.

ELECTRICAL SERVICE REQUIREMENT: ELECTRICAL SERVICE AT THE SITE IS TO BE 115 VOLTS, 60 HZ, 30 AMP SERVICE. CONTRACTOR TO INSTALL (6) - #10 THHN WIRES IN 1 SINGLE 2" CONDUIT OR APPROVED EQUAL FROM A CODE ALLOWABLE ELECTRICAL CIRCUIT. ALL PVC CONDUIT IS TO BE SCH 80 ABOVEGROUND AND SCH 40 UNDERGROUND.

UTILITY INSTALLATION SPECIAL PROVISIONS: PHONE SERVICE
CONTRACTOR TO PERFORM ALL PHONE WIRING INSTALLATION AS REQUIRED BY THE PHONE UTILITY COMPANY, VERIZON CORPORATION. CONTACT VERIZON AT (802) 295-8176. CONTRACTOR IS TO COORDINATE DIVISION OF RESPONSIBILITY FOR PHONE SERVICE INSTALLATION WITH VERIZON CORPORATION. ALL COST ASSOCIATED WITH THE PHONE SERVICE INSTALLATION IS CONSIDERED TO BE AN INCIDENTAL COST TO THE OVERALL PROJECT.

MENDON

UTILITY INSTALLATION : ELECTRICAL POWER SERVICE

CONTRACTOR IS TO PERFORM ALL ELECTRICAL SERVICE INSTALLATION AS REQUIRED BY THE AFFECTED UTILITY COMPANY, CENTRAL VERMONT PUBLIC SERVICE COMPANY (CVPS). CONTACT CVPS AT (800) 649-2877. INSTALLATION AT THIS SITE REQUIRES BOTH POLE MOUNTED EQUIPMENT AND INSTALLATION OF A PEDESTAL MOUNTED METER SOCKET AND DISCONNECT INSTALLATION. CONTRACTOR IS TO COORDINATE DIVISION OF RESPONSIBILITY FOR POWER RELATED APPURTENANCES INSTALLATION WITH THE POWER UTILITY COMPANY. ALL COST ASSOCIATED WITH THE INSTALLATION OF POWER SERVICE FOR THIS LOCATION IS CONSIDERED TO BE AN INCIDENTAL COST TO THE OVERALL PROJECT.

ELECTRICAL SERVICE REQUIREMENT: ELECTRICAL SERVICE AT THE SITE IS TO BE 115 VOLTS, 60 HZ, 30 AMP SERVICE. CONTRACTOR TO INSTALL (6) - #10 THHN WIRES IN 1 SINGLE 2" CONDUIT OR APPROVED EQUAL FROM A CODE ALLOWABLE ELECTRICAL CIRCUIT. ALL PVC CONDUIT IS TO BE SCH 80 ABOVEGROUND AND SCH 40 UNDERGROUND.

UTILITY INSTALLATION SPECIAL PROVISIONS: PHONE SERVICE
CONTRACTOR TO PERFORM ALL PHONE WIRING INSTALLATION AS REQUIRED BY THE PHONE UTILITY COMPANY, VERIZON CORPORATION. CONTACT VERIZON AT (802) 295-8176. CONTRACTOR IS TO COORDINATE DIVISION OF RESPONSIBILITY FOR PHONE SERVICE INSTALLATION WITH VERIZON CORPORATION. ALL COST ASSOCIATED WITH THE PHONE SERVICE INSTALLATION IS CONSIDERED TO BE AN INCIDENTAL COST TO THE OVERALL PROJECT.

FAIR HAVEN RWIS - INSTRUMENTATION SCHEDULE

Quantity	Item Description	Model Number
1	30-ft ANS Incur Equal Fold-Over Aluminum Tower with Tower Base Plate, Level Base and Anchor Bolts. Also Include Anti-Climb Panels (ACI300), Hinge Assembly at 10-ft height, 5-ft Aluminum Mast, Lightning Rod with Three 8' Ground Rod Kit and Secured Winch	APPROACH NAVIGATIONAL SYSTEMS T30
1	RWIS Master Processing Unit with I/O Interface Card and NTCIP Communication Card with VAISALA Standard NEMA 4 Box	DM32SYS
3	Surface Pavement Sensor w/ 100 m cable	DRS511AB10
1	Subsurface Temperature Sensor w/ 100 m cable	DTS151UKG10
1	Present Weather & Visibility Sensor	PWD12
1	Air Temperature & Humidity Sensor	HMP45D
1	Solar Radiation Shield	DTR 502
1	ICE FREE Wind Speed & Direction Sensor	DM3WIND
1	Sensor Support Arm and Accessories	ICENAXARM
1	Fixed Position Video Camera with Heated Enclosure, Accessories and Software	VIDEOFIXED
1	IceView Workstation Software License	ICEVIEW

Note:

RWIS INSTRUMENTATION AND SOFTWARE LISTED ABOVE TO BE ORDERED AND PROVIDED UNDER A SEPERATE VTRANS RETAINER CONTRACT WITH RWIS EQUIPMENT VENDOR. CONTRACTOR TO COORDINATE WITH RWIS EQUIPMENT VENDOR AS NECESSARY FOR ASSISTANCE WITH THE INSTALLATION OF SENSORS, CABLING AND TOWER.

MENDON RWIS - INSTRUMENTATION SCHEDULE

Quantity	Item Description	Model Number
1	30-ft ANS Incur Equal Fold-Over Aluminum Tower with Tower Base Plate, Level Base and Anchor Bolts. Also Include Anti-Climb Panels (ACI300), Hinge Assembly at 10-ft height, 5-ft Aluminum Mast, Lightning Rod with Three 8' Ground Rod Kit and Secured Winch	APPROACH NAVIGATIONAL SYSTEMS T30
1	RWIS Master Processing Unit with I/O Interface Card and NTCIP Communication Card with VAISALA Standard NEMA 4 Box	DM32SYS
3	Surface Pavement Sensor w/ 50 m cable	DRS511AB5
1	Subsurface Temperature Sensor w/ 50 m cable	DTS151UKG5
1	Present Weather & Visibility Sensor	PWD12
1	Air Temperature & Humidity Sensor	HMP45D
1	Solar Radiation Shield	DTR 502
1	ICE FREE Wind Speed & Direction Sensor	DM3WIND
1	Sensor Support Arm and Accessories	ICENAXARM
1	Fixed Position Video Camera with Heated Enclosure, Accessories and Software	VIDEOFIXED
1	IceView Workstation Software License	ICEVIEW

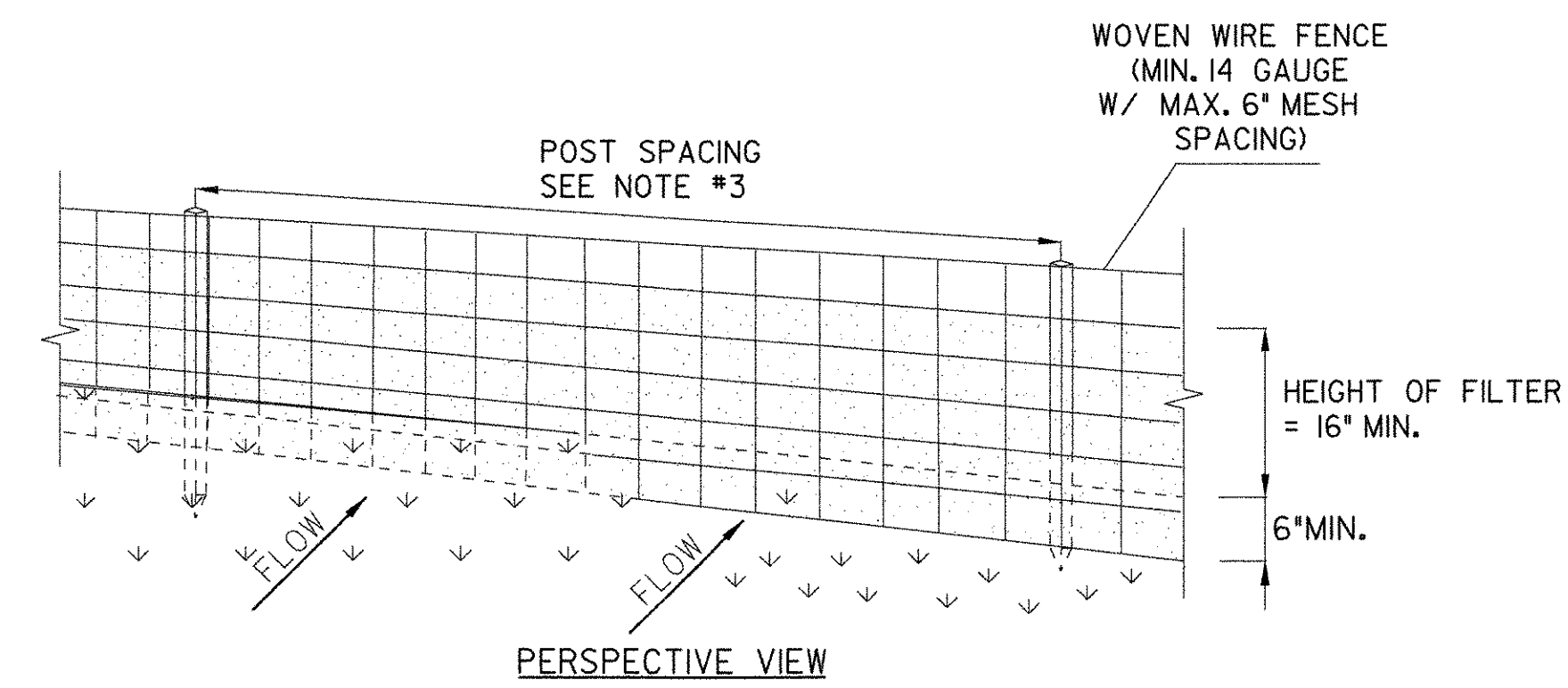
Note:

RWIS INSTRUMENTATION AND SOFTWARE LISTED ABOVE TO BE ORDERED AND PROVIDED UNDER A SEPERATE VTRANS RETAINER CONTRACT WITH RWIS EQUIPMENT VENDOR. CONTRACTOR TO COORDINATE WITH RWIS EQUIPMENT VENDOR AS NECESSARY FOR ASSISTANCE WITH THE INSTALLATION OF SENSORS, CABLING AND TOWER.

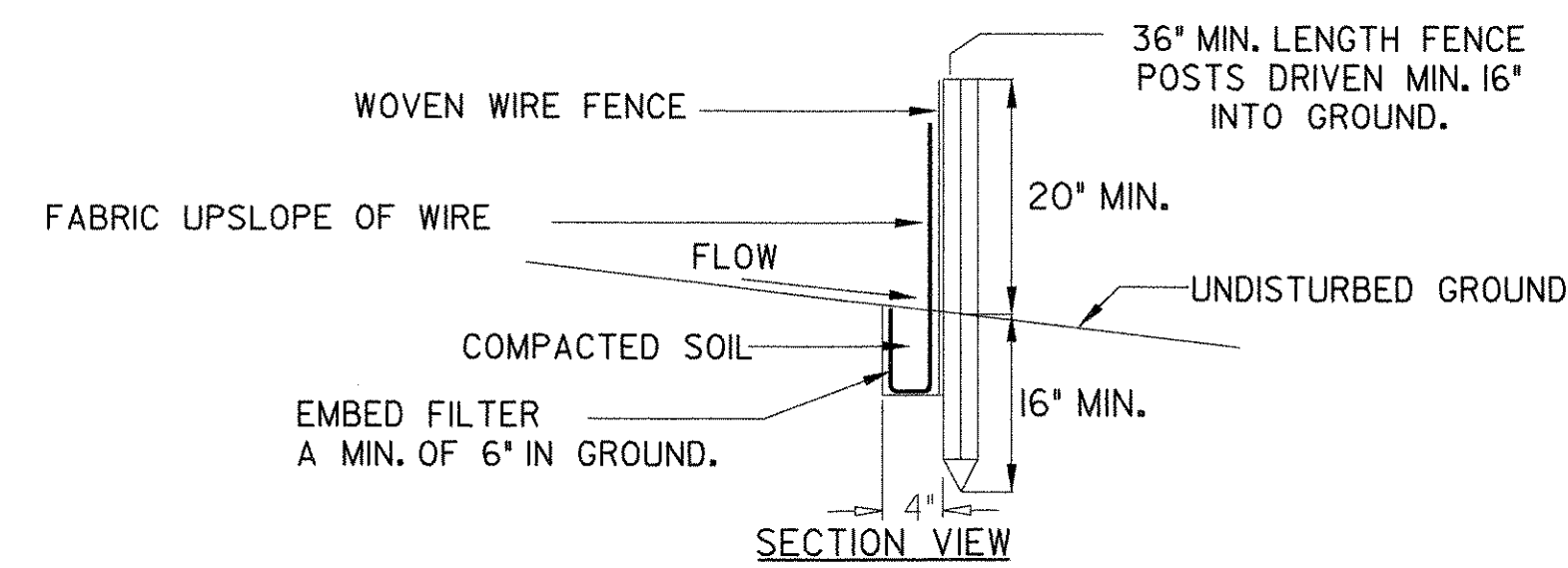
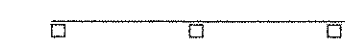
ESTIMATED QUANTITIES		TOTALS		DESCRIPTIONS			
FAIR HAVEN RWIS SITE	MENDON RWIS SITE	RND	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER
0	1	0	1		EA	REMOVING MEDIUM TREES	201J5
0	13	2	13		CY	COMMON EXCAVATION	203J5
1	1	0	2		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.J.)	204.22
30	30	6	60		CY	STRUCTURE EXCAVATION	204.25
23	23	4	46		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30
0	13	2	13		CY	SUBBASE OF CRUSHED GRAVEL, COARSE GRADED	301.25
4	4	2	8		CY	SUBBASE OF DENSE GRADED CRUSHED STONE	301.35
2	0	1	2		TON	BITUMINOUS CONCRETE PAVEMENT (PG 58-28)	406.25
365	365	36	730		LB	REINFORCING STEEL	507J5
7	7	3	14		CY	CONCRETE, CLASS B	541.25
24	24	0	48		HR	UNIFORMED TRAFFIC OFFICERS	630J0
24	24	0	48		HR	FLAGGERS	630J5
0.6	0.4	0	1		LS	MOBILIZATION/DEMOLITION	635J1
0.6	0.4	0	1		LS	TRAFFIC CONTROL	641J0
2	2	0	4		EA	PORTABLE CHANGABLE MESSAGE SIGN	641J5
0	37	3	37		SY	GEOTEXTILE FOR ROADBED SEPARATOR	649J1
29	34	4	63		SY	GEOTEXTILE FOR SILT FENCE	649J51
3	2	0	5		LB	SEED	651J5
5	4	0	9		LB	SEED, WINTER RYE	651J7
31	26	0	57		LB	FERTILIZER	651J8
0J	0J	0	0.2		TON	AGRICULTURAL LIMESTONE	651.20
0.2	0.2	0	0.4		TON	HAY MULCH	651.25
21	18	0	39		CY	TOPSOIL	651.35
0.5	0.5	0	1		LS	EPSC PLAN	652J0
10	10	0	20		HR	MONITORING EPSC PLAN	652.20
0.5	0.5	0	1		LS	MAINTENANCE OF EPSC PLAN (N.A.B.J.)	652.30
900	275	30	1175		LF	PROJECT DEMARCATION FENCE	653.55
0	1	0	1		EA	REMOVING SIGNS	675.50
0	1	0	1		EA	ERECTING SALVAGED SIGNS	675.60
250	130	25	380		LF	ELECTRICAL CONDUIT (2"X PVC)	678.21
530	400	50	930		LF	WIRED CONDUIT (2"X PVC)	678.23
2	1	0	3		EA	JUNCTION BOX	678.26

QUANTITY NOTE: ALL PAVEMENT SAWCUTTING, "CHISELING" ASSISTANCE, AND CLEANING/DRYING OF THE SAWCUT, NECESSARY FOR SENSOR INSTALLATION SHALL BE CONSIDERED INCIDENTAL TO ITEM 678.21 - ELECTRICAL CONDUIT.

PROJECT:	FAIR HAVEN: RWIS MENDON: RWIS
FILE NAME: 010001qnt.dgn	PLOT DATE: 24-AUG-2007
PROJECT LEADER: D. GRAHAVOC	DRAWN BY: MAL
DESIGNED BY: BMB	CHECKED BY: MDL
VENDOR EQUIPMENT AND BILL OF MATERIALS SHEET 3 OF 12	



SYMBOL



CONSTRUCTION SPECIFICATIONS

1. WOVEN WIRE FENCE REINFORCEMENT IS ONLY REQUIRED WITHIN 100 FT UPSLOPE OF RECEIVING WATERS.
2. WHERE REQUIRED FENCE SHALL BE WOVEN WIRE, MIN. 14 GAUGE WITH A 6\"/>

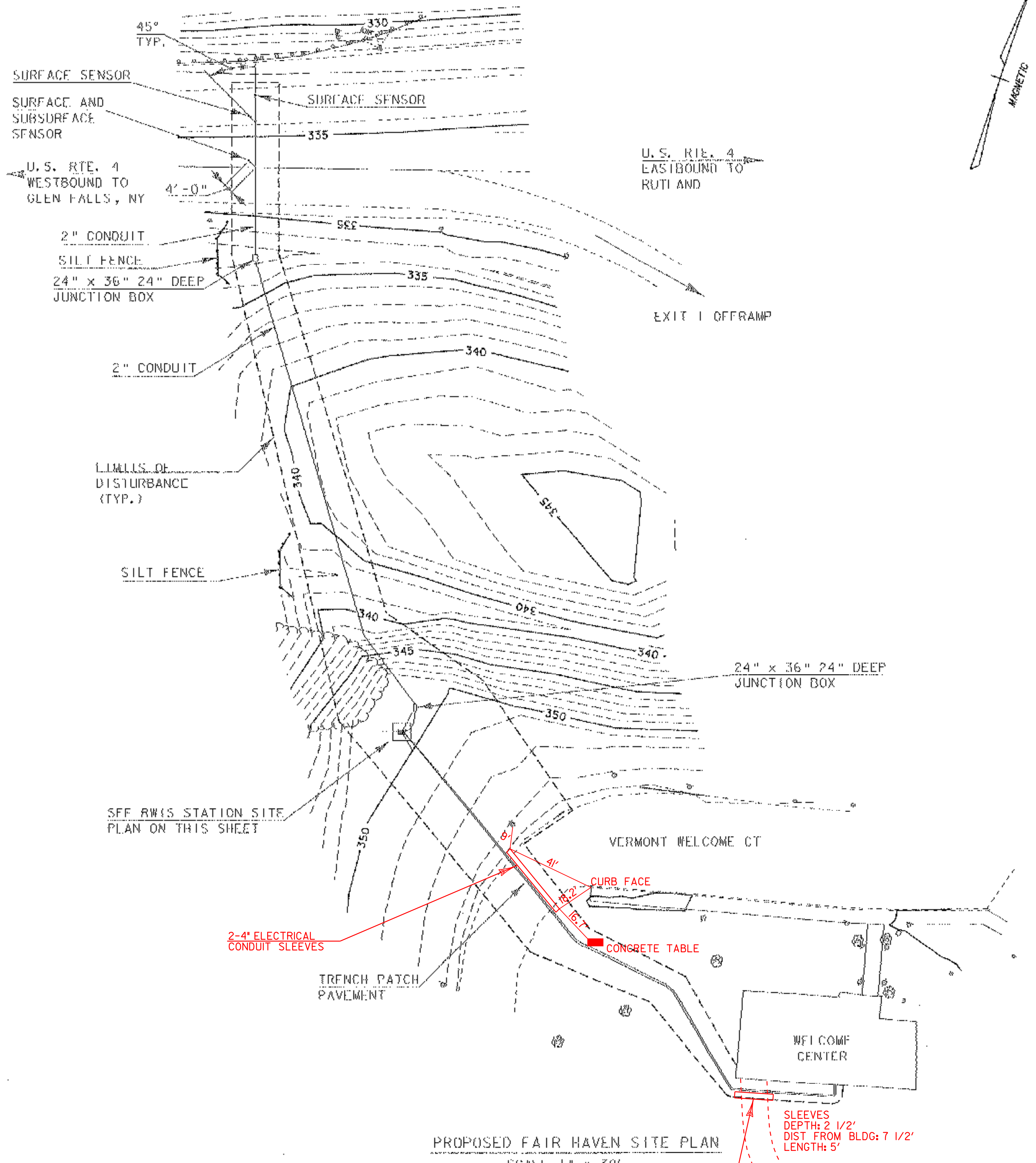
NOTES:
REFER TO "LOW RISK SITE HANDBOOK FOR EROSION PREVENTION AND SEDIMENT CONTROL - 2006 - " FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS ITEM SHALL BE PAID FOR UNDER ITEM 649.51 GEOTEXTILE FOR SILT FENCE (FILTER FABRIC ONLY FENCE)

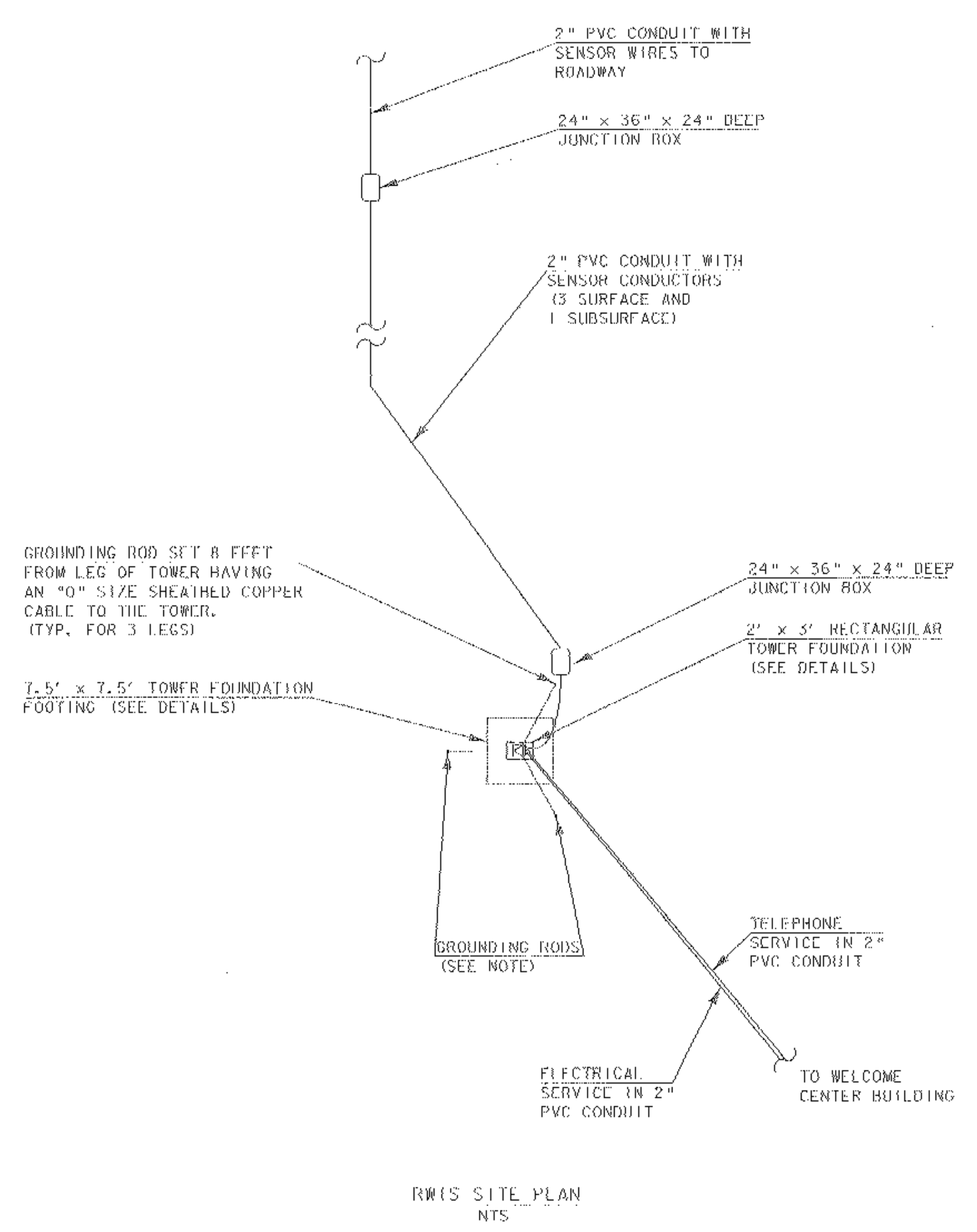
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

DATUM
VERTICAL: NAVD 88
HORIZONTAL: NAD83 (96)

PROJECT:	FAIR HAVEN: RWIS MENDON: RWIS	
FILE NAME: EPSC-1.DGN	PLOT DATE: 10-AUG-2007	
PROJECT LEADER: D. GRAHAVOC	DRAWN BY: MAL	
DESIGNED BY: BMB	CHECKED BY: MDL	
SILT FENCE DETAILS	SHEET 4 OF 12	



- NOTES:
- SEE TITLE SHEET FOR BENCHMARK LOCATIONS.
 - FIELD VERIFY EDGE OF TRAVEL WAY AND PAVEMENT STRIPING PRIOR TO THE PLACEMENT OF SENSORS.



FAIR HAVEN	
PROJECT:	FAIR HAVEN: RWIS MENDON: RWIS
FILE NAME: 1001.dgn	PLOT DATE: 10-AUG-2007
PROJECT LEADER: D. GRAHAVOC	DRAWN BY: MAL
DESIGNED BY: BMB	CHECKED BY: MDL
SITE PLAN & RWIS LAYOUT	SHEET 5 OF 12

GENERAL NOTES

- ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION (DATED 2006) AND THE LATEST REVISIONS THEREOF.
- NO EXISTING MONUMENTS, BOUNDS, IRON PINS OR PROPERTY CORNERS SHALL BE DISTURBED WITHOUT MAKING PROVISIONS FOR RELOCATION WITH A SURVEYOR LICENSED IN THE STATE OF VERMONT.
- ALL WORK SHALL BE PERFORMED WITHIN THE LIMITS SHOWN ON THE DRAWINGS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DATA COLLECTION AND PREPARATION OF RECORD DRAWINGS.
- THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING EROSION IN ALL AREAS DISTURBED BY THE CONTRACTOR'S ACTIONS. COSTS FOR REQUIRED EROSION CONTROL IN ALL AREAS DISTURBED BY THE CONTRACTOR'S ACTIONS OUTSIDE THE LIMITS OF DISTURBANCE SHOWN ON AND REQUIRED BY THE ENGINEERING DRAWINGS SHALL BE INCIDENTAL TO THE CONTRACT.
- NOT USED
- IF UNFORSEEN HAND EXCAVATION IS REQUIRED BY THE CONTRACTOR, THIS WORK WILL BE PERFORMED IN ACCORDANCE WITH SUBSECTION 204.01 (b).
- FOLD DOWN POLE OR FOLD OVER TOWER TO BE SUPPLIED AND INSTALLED BY THE RWIS EQUIPMENT VENDOR. THE CONTRACTOR SHALL INSTALL THE POLE BASE PLATE OR TOWER BASE PROVIDED BY THE RWIS EQUIPMENT VENDOR PER THE POLE/TOWER MANUFACTURER SPECIFICATIONS.
- RWIS EQUIPMENT VENDOR IS RESPONSIBLE FOR THE INSTALLATION OF ALL SURFACE AND SUB-SURFACE SENSORS IN THE ROADWAY PAVEMENT STRUCTURE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SAW CUTTING, ASSIST WITH "HOLE" WIDENING OF PAVEMENT AS SHOWN ON THE SITE PLAN AND THE RWIS INSTALLATION DETAIL SHEET, AND CLEANING AND DRYING OF THE SAWCUT WITH APPROPRIATE EQUIPMENT AND MATERIALS.
- RWIS EQUIPMENT VENDOR TO PROVIDE AND INSTALL POLE/TOWER AND ATTACHED EQUIPMENT, CONTROL PANELS, CONTROL "CABLES", SENSORS AND SENSOR CABLES, AND PROVIDE EQUIPMENT START UP AND CALIBRATION SERVICES. CONTRACTOR TO PROVIDE MANPOWER AS REQUIRED TO ERECT THE TOWER ON THE FOUNDATION.
- THE CONTRACTOR WILL PROVIDE COORDINATION WITH RWIS EQUIPMENT VENDOR TO FACILITATE PAVEMENT AND SUBSURFACE SENSOR AND ASSOCIATED CABLING INSTALLATION. THE CONTRACTOR TO COORDINATE ALL ROADWAY LANE CLOSURES AND NOTIFICATIONS FOR THE RWIS EQUIPMENT VENDOR DURING INSTALLATION.
- UTILITY TRENCH CONDUIT COVER TO BE 36 INCHES, MINIMUM, TO THE UTILITY PEDESTAL AND 24 INCHES, MINIMUM, ELSEWHERE PER STANDARD E-175. THE TRENCH FOR ALL CONDUIT SHALL BE A MAXIMUM OF 24" WIDE FOR (3) 2" CONDUITS AND A MINIMUM OF 6" WIDE FOR A SINGLE CONDUIT. THE CONTRACTOR SHALL EMPLOY SUITABLE EXCAVATION METHODS TO MINIMIZE THE DISTURBANCE TO THE EXISTING SOIL. ALL UNDERGROUND PVC CONDUIT SHALL BE SCH 40. ALL ABOVEGROUND PVC CONDUIT SHALL BE SCH 80.
- THIRTY-SIX INCH RADIUS CONDUIT SWEEPS ARE TO BE USED AT ALL 90° CHANGES OF DIRECTION EXCEPT WHERE SHOWN OTHERWISE ON THE PLANS. TWELVE INCH SWEEPS ARE THE MINIMUM.
- ALL EXCAVATION REQUIRED TO PLACE FOOTING SHALL BE PAID UNDER ITEM 204.25, STRUCTURE EXCAVATION. PAY LIMITS IN SOIL SHALL BE DEFINED AS 18" OUTSIDE THE EDGE OF THE FOOTING AND 6" BELOW THE INDICATED BOTTOM OF FOOTING. IF OVER EXCAVATION OCCURS, ADDITIONAL COMPACTED GRANULAR FILL MATERIAL SHALL BE CONSIDERED INCIDENTAL.
- FOR FOOTING IN ROCK CUT, ALL OVERBREAKAGE WIDER THAN THE WIDTH OF THE FOOTING AND BELOW THE INDICATED BOTTOM OF FOOTING SHALL BE REPLACED WITH "CONCRETE CLASS B". A MAXIMUM OF 6" AVERAGE WIDTH OR DEPTH OF OVERBREAKAGE SHALL BE PAID FOR AS "STRUCTURE EXCAVATION" AND "CONCRETE CLASS B". ANY ADDITIONAL CONCRETE REQUIRED SHALL BE PLACED AT THE COST OF THE CONTRACTOR. HORIZONTAL ROCK CUT SURFACES SHALL BE MADE LEVEL AND CLEAR OF LAITANCE AND DEBRIS, PRIOR TO PLACEMENT OF FOOTING CONCRETE.
- WEATHER SENSOR POLE, BASE PLATE AND ANCHOR BOLTS OR TRUSS TOWER BASE SHALL BE PROVIDED BY RWIS EQUIPMENT VENDOR AND INSTALLED BY THE CONTRACTOR AS RECOMMENDED BY THE MANUFACTURER. PAYMENT IS INCIDENTAL TO FOUNDATION CONSTRUCTION. RWIS EQUIPMENT VENDOR SHALL SUPPLY SHOP DRAWINGS FOR APPROVAL BY VTTRANS AT TIME OF EQUIPMENT PURCHASE.
- ROADWAY CLOSURES ARE RESTRICTED TO BETWEEN 9:00 A.M. AND 3:30 P.M. ALL ROADWAYS MUST BE OPEN TO NORMAL TRAFFIC OUTSIDE THIS PERIOD.
- TOWER BASES MAY BE SUPPLIED IN EITHER A TRIANGULAR SECTION OR A ROUND POLE SECTION. CONTRACTOR IS TO BE AWARE OF WHAT TYPE OF TOWER WILL BE INSTALLED AT EACH LOCATION. FOR TRIANGULAR TOWER SECTION, THE BASE PLATE AND ANCHOR BOLTS MUST BE PLACED AND LEVELED IN CONCRETE SECTION PRIOR TO POURING CONCRETE PIER SECTION. IF THE ROUND TOWER SECTION IS TO BE INSTALLED THE CONTRACTOR MUST EMBED, LEVEL AND SET THE LEVELING PLATE AND ANCHOR BOLTS. ANCHOR BOLTS AND LEVELING PLATE WILL BE SUPPLIED BY THE RWIS EQUIPMENT VENDOR.
- THE CONTRACTOR SHALL PERFORM ALL ELECTRICAL INSTALLATION FROM THE EXISTING UTILITY SERVICE PANEL IN THE FAIR HAVEN WELCOME CENTER TO THE RWIS STATION. THE CONTRACTOR SHALL SUPPLY ALL CONDUIT AND HARDWARE NECESSARY TO PROVIDE SERVICES FROM THE UTILITY SERVICE PANEL ROOM TO THE RWIS STATION.
- ALL ELECTRICAL WORK PERFORMED BY EITHER THE CONTRACTOR OR THE RWIS EQUIPMENT VENDOR SHALL BE PERFORMED BY, OR INSPECTED AND APPROVED BY A LICENSED ELECTRICIAN PRIOR TO ENERGIZING ANY EQUIPMENT. THE RWIS EQUIPMENT VENDOR'S ELECTRICIAN SHALL VERIFY THAT ADEQUATE GROUNDING FOR LIGHTNING PROTECTION FOR THE TOWER AND EQUIPMENT IS INSTALLED. REVIEW AND SIGN-OFF BY VTTRANS' RESIDENT ENGINEER WILL BE REQUIRED BEFORE ACCEPTANCE OF THE INSTALLATION.

TRAFFIC CONTROL NOTES - UNDIVIDED HIGHWAY

- WHEN CONSTRUCTION EQUIPMENT IS WORKING WITHIN FIFTEEN (15) FEET OF THE ROADWAY, FLAGGERS OR UNIFORMED TRAFFIC CONTROL OFFICERS (UTO'S) SHALL BE USED TO ASSIST IN CONTROLLING TRAFFIC PER SECTION 630 OF THE SPECIFICATIONS. ITEM FOR PAYMENT FOR TRAFFIC CONTROL ASSISTANCE SHALL BE 630.10.
- TRAFFIC CONTROL DETAILS FOR TEMPORARY LANE CLOSURES WHILE WORKING ON THE ROADWAY OR ADJACENT TO THE ROADWAY SHALL REFER TO STANDARD DETAIL SHEETS E-110 & E-111.
- ALL SIGNS SHALL BE PLACED BEFORE ANY WORK BEGINS OR EQUIPMENT IS PUT ON OR ADJACENT TO THE ROADWAY FOR CONSTRUCTION. SIGNS SHALL BE COVERED OR REMOVED WHEN NOT APPLICABLE, REFER TO STANDARD DETAIL SHEETS E-100, E-101 & E-102 FOR REQUIREMENTS.
- THE CONTRACTOR SHALL HAVE CHANNELIZING DEVICES AND SIGNS IN ACCORDANCE WITH STANDARD DETAIL SHEETS E-100, E-106, E-110 & E-111, FOR TEMPORARY LANE CLOSURES ON THE PROJECT SITE BEFORE STARTING THE PROJECT.
- SINGLE (1) OR TWO (2) LANE CLOSURES ON AN UNDIVIDED HIGHWAY SHALL BE AS PER THE LATEST EDITION OF THE MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR TYPICAL APPLICATIONS 10 & 13 (TA 10 & TA 13) AND VERMONT STANDARD DETAIL SHEETS E-110 & E-111 WITH SPEED LIMIT REDUCTION REQUIREMENTS. REFER TO STANDARD DETAIL SHEETS E-100 & E-100A FOR MAIN LINE AND SIDE ROAD SIGNAGE, AS REQUIRED.
- EXISTING SPEED LIMIT SIGNS SHALL BE COVERED WHEN REDUCED SPEED SIGNS ARE POSTED.
- CHANNELIZING DEVICES OTHER THAN REFLECTORIZED PLASTIC DRUMS (AS PER STANDARD DETAIL SHEET E-106) WILL NOT BE ALLOWED.
- THE REDUCED "SPEED LIMIT XX" AND OTHER RELATED SIGNS SHALL BE REMOVED OR COVERED WHEN WORK IS NOT IN PROGRESS AND THE ROADWAY IS NOT RESTRICTED.
- "REDUCED SPEED AHEAD" SIGNS MAY BE USED IN LIEU OF "SPEED ZONE AHEAD".
- FOR RELATIVELY SHORT-TERM PROJECTS WITH NO OFFICIAL SPEED ZONE ENACTMENT, THE SPEED LIMIT AND REDUCED SPEED LIMIT SIGNS CAN BE SUBSTITUTED WITH ADVISORY PLAQUES MOUNTED AS SUPPLEMENTAL SIGNS ON OTHER WARNING SIGNS.
- ALL FIXED SIGNS SHALL BE MOUNTED ON NCHRP-350 APPROVED SUPPORTS (I.E. YIELDING STEEL, ALUMINUM OR WOOD) AS SHOWN ON THE APPROPRIATE STANDARD DETAIL SHEETS.
- PORTABLE SIGNS SHALL BE MOUNTED ON NCHRP-350 APPROVED SUPPORTS AND KEPT LEVEL WHEN PLACED ON THE EDGE OF THE ROADWAY AND ALL VEGETATION THAT INTERFERES WITH VISIBILITY OF THE SIGNS SHALL BE REMOVED. PAYMENT FOR PLACEMENT AND MAINTENANCE SHALL BE INCIDENTAL TO OTHER ITEMS. WHEN PORTABLE SIGNS ARE PLACED BEHIND GUARDRAIL, THE BOTTOM OF THE SIGN FACES SHALL BE PLACED ABOVE THE TOP OF THE GUARDRAIL.
- WARNING LIGHTS SHALL NOT BE USED ON CHANNELIZING DEVICES.
- THE NUMBER OF CHANNELIZING DEVICES AND OTHER TRAFFIC CONTROL DEVICES SHOWN ON STANDARD DETAIL SHEETS E-110 & E-111 ARE DETERMINED BASED ON INDIVIDUAL DETOUR CONDITIONS (TAPERS, SPEED LIMITS, LENGTH OF DETOUR CURVE, ETC.) OR AS DIRECTED BY THE ENGINEER.
- NO LONG-TERM LANE CLOSURES (GREATER THAN 6-1/2 CONTINUOUS HOURS IN A DAY) SHALL BE PERMITTED. REFER TO GENERAL CONSTRUCTION NOTE #17.

CONSTRUCTION SEQUENCE

- PRE-CONSTRUCTION: TAPE LIMITS OF CONSTRUCTION AND MEET WITH PROJECT ENGINEER PRIOR TO BEGINNING ANY OTHER SITE WORK. PAYMENT FOR PROJECT DEMARCATION FENCE (PDF) SHALL BE UNDER ITEM 653.55.
- INSTALL SILT FENCE AT ALL LOCATIONS SHOWN ON PLAN OR AS DIRECTED BY THE ENGINEER.
- STOCKPILE TOPSOIL & ROCK AND INSTALL EROSION CONTROL FOR STOCKPILE AS DIRECTED BY THE ENGINEER.
- PROCEED WITH WORK UNIT BY UNIT, LIMITING THE DURATION OF DISTURBANCE AS MUCH AS POSSIBLE.
- BEGIN TURF ESTABLISHMENT PER SECTION 651 OF THE SPECIFICATIONS IMMEDIATELY AFTER GRADING. BASIS OF PAYMENT SHALL BE PER SUBSECTION 651.13. SEE SEEDING FORMULA.
- INSPECT ALL DISTURBED AREAS ON A DAILY BASIS. INSTALL OR MAINTAIN TEMPORARY SILT FENCE, ETC., AS FOUND NECESSARY TO PREVENT EROSION.
- PLACE TOPSOIL, FERTILIZER, LIME, SEED AND MULCH IN A UNIT BY UNIT MANNER.
- MONITOR THE SITE AND MAINTAIN STRUCTURES AS NEEDED UNTIL FULL RE-VEGETATION IS ESTABLISHED. RESEED AS NECESSARY.

TEMPORARY SEEDING

- WHEN PERMANENT SEEDING CANNOT BE INSTALLED BY SEPTEMBER 15, TEMPORARY SEEDING AND MULCHING OF ALL DISTURBED AREAS SHALL BE INSTALLED IMMEDIATELY AND MAINTAINED UNTIL PERMANENT MEASURES CAN BE INSTALLED IN THE FOLLOWING PLANTING SEASON BY THE CONTRACTOR.
- TEMPORARY SEED TO BE WINTER RYE, 2.5 LBS PER 1000 SQ. FT, SEED AND TOPSOIL MIXTURE TO DEPTH OF 1 INCH. UNIFORMLY FERTILIZE, NOT LESS THAN 7 LBS PER 1000 SQ. FT., OF 10-10-10 OR EQUIVALENT. SPREAD SEED UNIFORMLY. FIRM SOIL BY ROLLING OR PACKING; IF NOT FEASIBLE, THEN RAKE LIGHTLY TO COVER SEEDS.
- MULCH ALL DISTURBED AREAS WITH 1-1/2 TO 2-1/2 TONS OF HAY OR STRAW PER ACRE. ANCHOR ON ALL SLOPES 2:1 OR STEEPER AND ON FLATTER SLOPES SUBJECT TO WASH OR WIND. MULCH SHALL MEET SPECIFICATIONS 755.10 (a). PAYMENT FOR MULCH SHALL BE UNDER ITEM 651.25.

SEEDING FORMULA - RURAL AREAS

% WT.	LBS. /A.	NAME	PUR %	GERM %
37.5	22.5	CREeping RED FESCUE	98	85
37.5	22.5	TALL FESCUE	95	90
5.0	3.0	RED TOP	95	90
15.0	9.0	BIRDSFOOT TREFoil	98	85
5.0	3.0	ANNUAL RYE GRASS	95	85
100.0	60.0			

SEEDING GENERAL NOTES

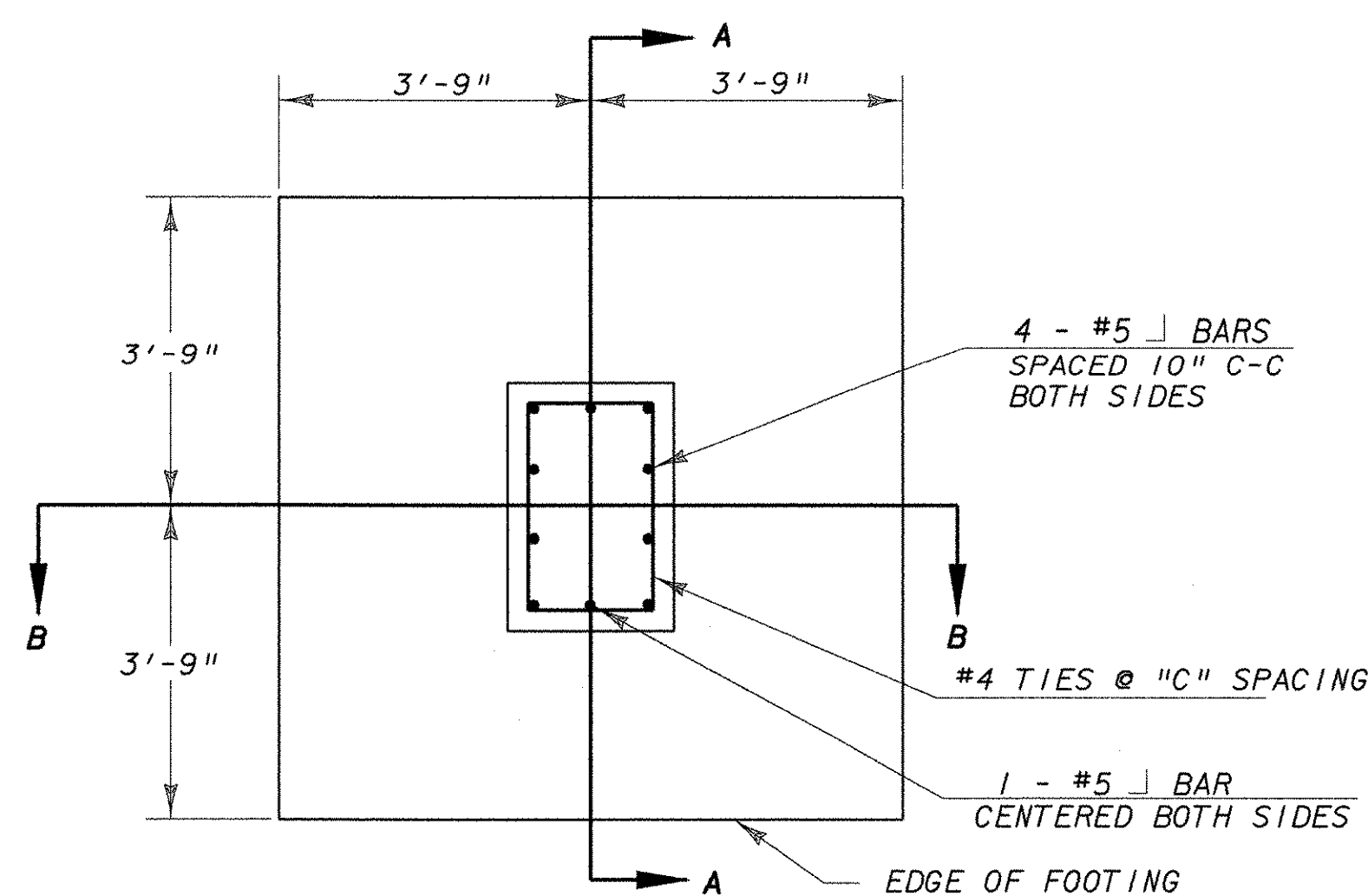
- SEEDING MIXTURE SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40 % BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.
- SEED: TO BE APPLIED PER SEEDING FORMULA OR AS DIRECTED BY THE ENGINEER.
- FERTILIZER: FORMULA 10-20-10, TO BE USED WITH SEED APPLIED AT THE RATE OF 500 LBS/ACRE (HYDRO SEEDERS MAY USE 19-19-19 FORMULA).
- AGRICULTURAL LIMESTONE: TO BE APPLIED AT THE RATE OF 2 TONS/ACRE, OR AS DIRECTED BY THE ENGINEER.
- HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 2 TONS/ACRE, OR AS DIRECTED BY THE ENGINEER.
- TOPSOIL: TO BE USED WITH SEED PER 651.06, OR AS DIRECTED BY THE ENGINEER.

EROSION CONTROL GENERAL NOTES

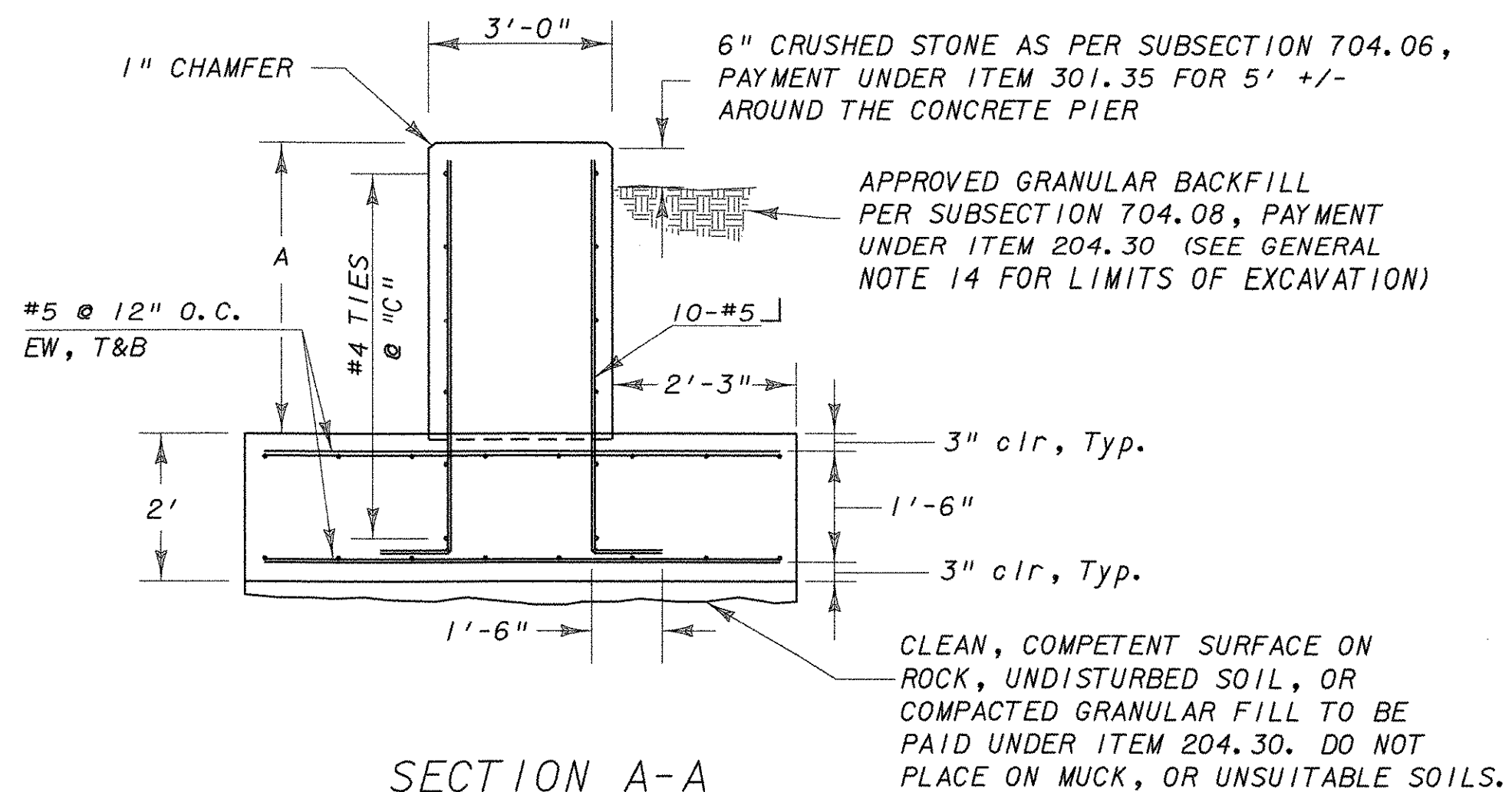
- GENERAL
 - IT IS ANTICIPATED THAT THIS PROJECT WILL DISTURB AN ESTIMATED 0.5 ACRES OF LAND INCLUDING BOTH ONSITE AND CONTIGUOUS WASTE, BORROW, STAGING, AND HAUL ROADS. SHOULD THE AREA OF DISTURBANCE CHANGE AND RESULT IN 1 OR MORE ACRES OF EARTH DISTURBANCE, OR SHOULD THE PROJECT BECOME PART OF A COMMON PLAN OF DEVELOPMENT, THEN THE CONTRACTOR WILL BE RESPONSIBLE FOR ADDITIONAL PERMITTING WITH THE AGENCY OF NATURAL RESOURCES.
 - EROSION & SEDIMENT CONTROL PRACTICES INCLUDE THE USE OF SILT FENCES. ALL EROSION CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS CONTAINED IN THE VNR "LOW RISK SITE HANDBOOK FOR EROSION PREVENTION AND SEDIMENT CONTROL (2006 OR LATEST REVISION)". (REFER TO: http://www.vtwaterquality.org/stormwater/hm/sw_esp.htm)
 - TOPSOIL STOCKPILING: TOPSOIL SHALL BE STRIPPED AND STOCKPILED FOR LATER USE ON CRITICAL AREAS AND ALL OTHER AREAS TO BE SEEDED. THE STOCKPILE WILL NOT BE COMPACTED AND SHALL BE STABILIZED AGAINST EROSION WITH TEMPORARY SEEDING.
- STRUCTURAL MEASURES
 - SILT FENCES ARE TO BE INSTALLED IN THE AREAS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER. THEY ARE INTENDED PRIMARILY TO INTERCEPT RUNOFF AND FILTER SMALL VOLUMES OF "SHEET FLOW" RUNOFF.
- MAINTENANCE
 - DURING THE PERIOD OF CONSTRUCTION AND/OR UNTIL VIGOROUS VEGETATIVE GROWTH IS ESTABLISHED:
 - SEEDED AREAS WILL BE FERTILIZED AND RE-SEEDED AS NECESSARY TO ENSURE PROPER VEGETATIVE ESTABLISHMENT.
 - SILT FENCES WILL BE CHECKED BY THE CONTRACTOR REGULARLY AND AFTER EACH RAINFALL EVENT. NECESSARY REPAIRS WILL BE MADE AT THE CONTRACTOR'S EXPENSE TO CORRECT UNDERMINING OR DETERIORATION OF THE BARRIERS.

FAIR HAVEN

PROJECT:	FAIR HAVEN: RWIS	
	MENDON: RWIS	
FILE NAME: 0100001gnl.dgn	PROJECT LEADER: D. GRAHAVOC	PLOT DATE: 10-AUG-2007
DESIGNED BY: BMB	GENERAL NOTES	DRAWN BY: MAL
		CHECKED BY: MDL
		SHEET 6 OF 12



RWIS FOUNDATION PLAN - TOP VIEW
N. T. S.



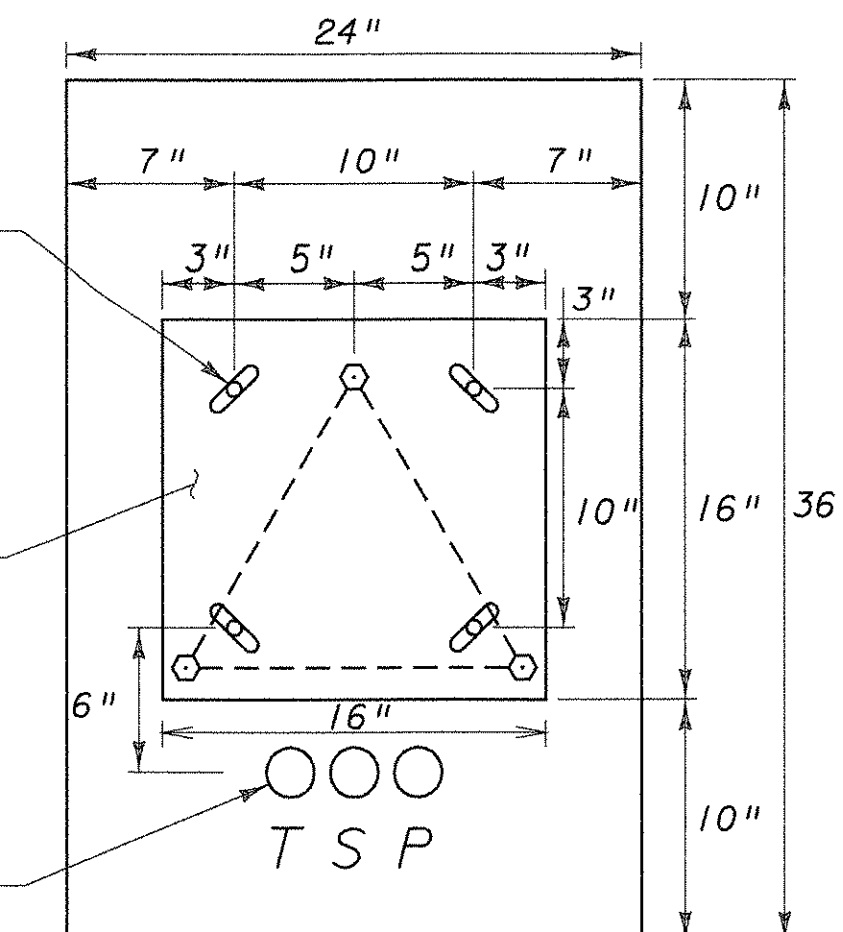
SECTION A-A
RWIS FOUNDATION PLAN - SIDE VIEW
N. T. S.

NOTE: THE 5/8" "J" ANCHOR BOLTS AND CONDUITS SHALL BE THE ONLY COMPONENTS POSITIONED IN THE CONCRETE PIER.

5/8" X 18" LONG "J" ANCHOR BOLT SUPPLIED BY TOWER VENDOR

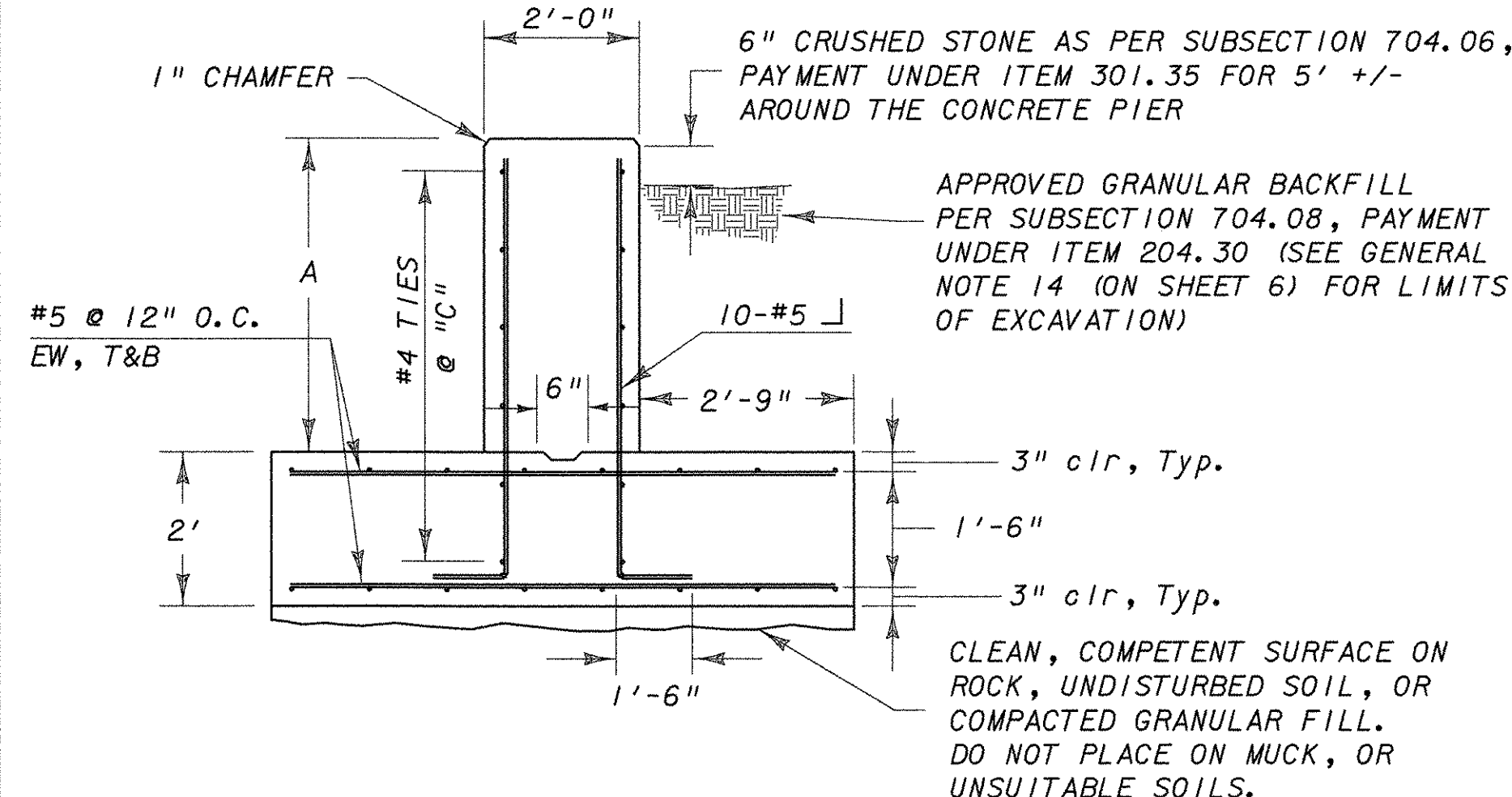
TOWER BASE PLATE SUPPLIED BY TOWER VENDOR

CONDUITS FOR SENSORS, POWER AND PHONE (SEE SITE PLAN FOR NUMBER AND SIZE)



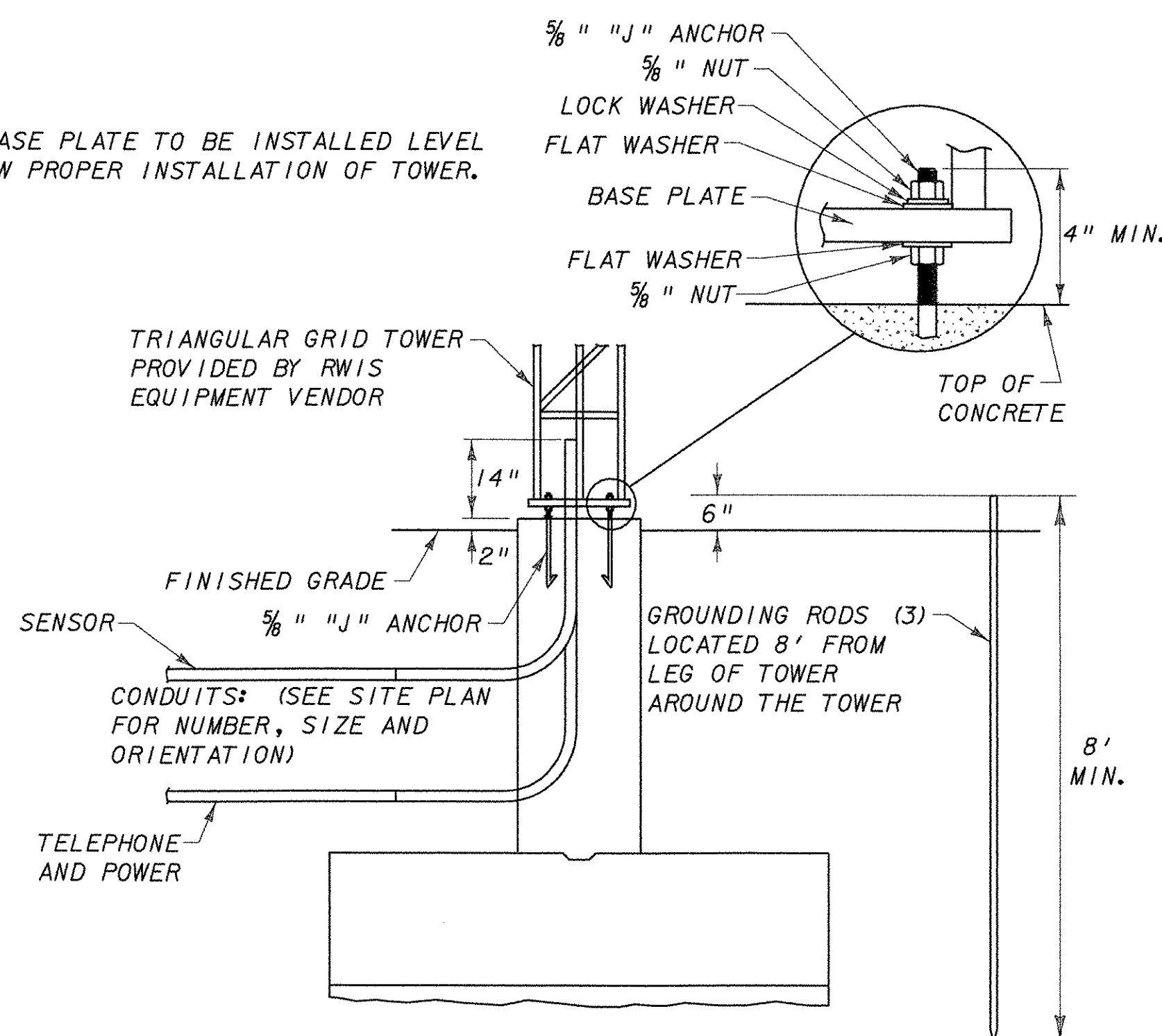
TOWER BASE PLATE ANCHOR BOLT PLACEMENT
N. T. S.

T = TELEPHONE
S = SENSOR
P = POWER

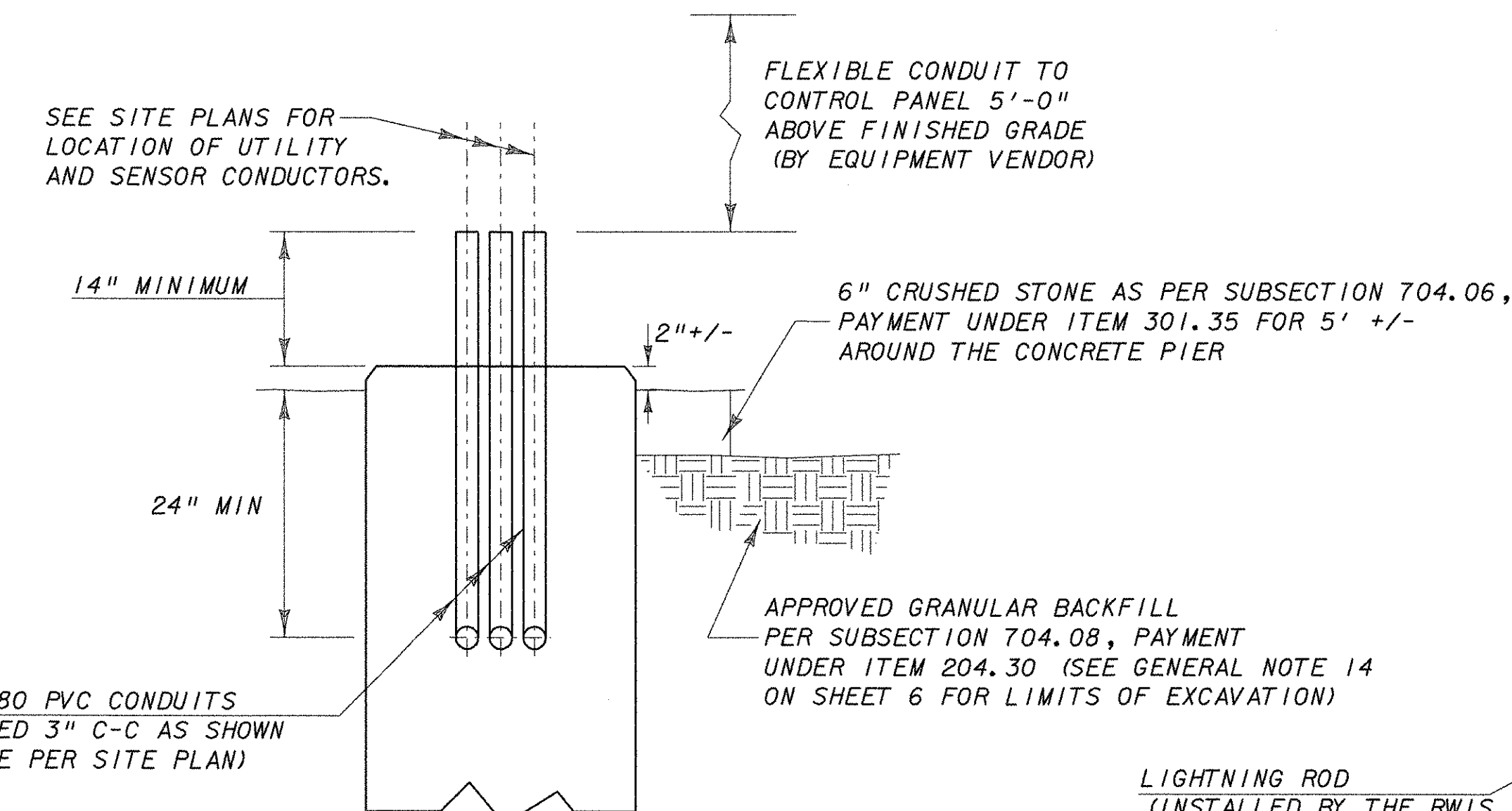


SECTION B-B
RWIS FOUNDATION PLAN - FRONT VIEW
N. T. S.

NOTE: BASE PLATE TO BE INSTALLED LEVEL TO ALLOW PROPER INSTALLATION OF TOWER.



TOWER BASE PLATE AND GROUNDING ROD INSTALLATION
N. T. S.



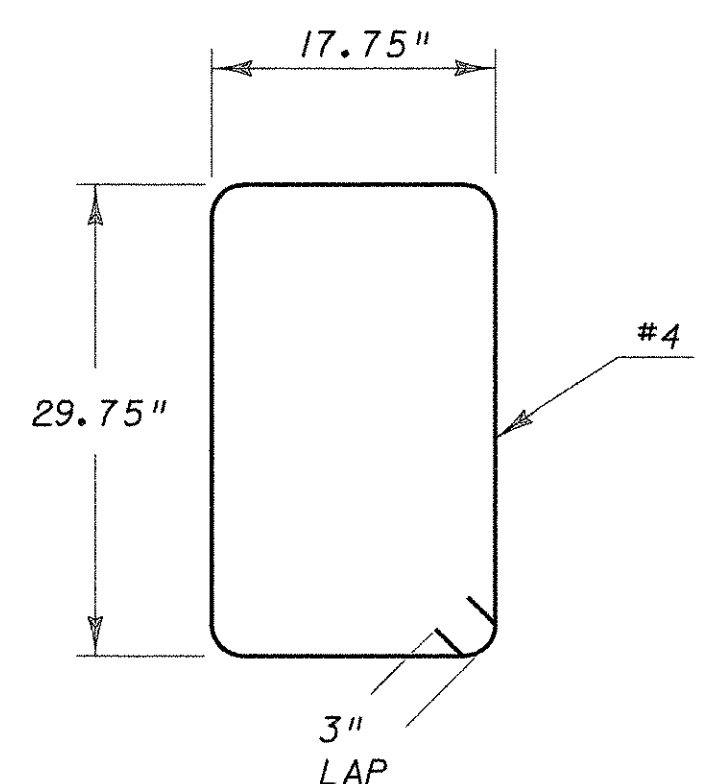
ELEVATION OF CONCRETE PIER
N. T. S.

LIGHTNING ROD (INSTALLED BY THE RWIS EQUIPMENT VENDOR IN ACCORDANCE WITH THE TOWERS MANUFACTURER'S INSTRUCTIONS)

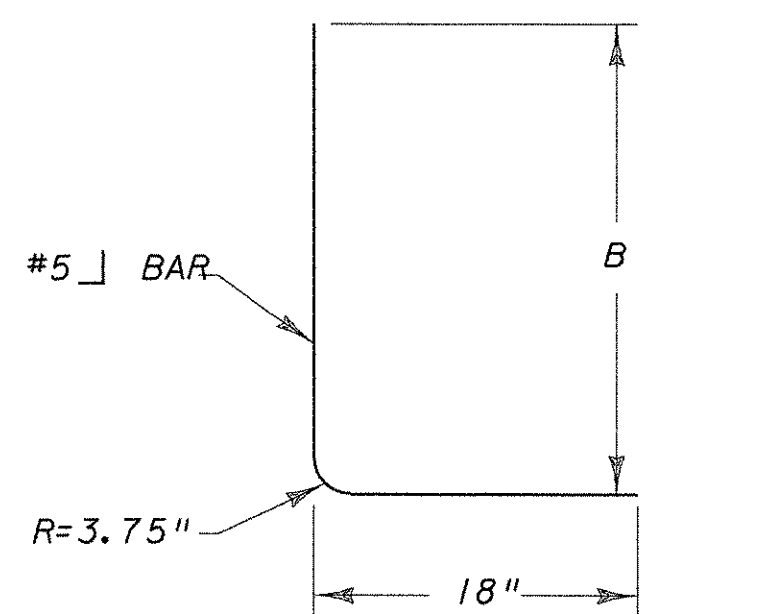
TRIANGULAR GRID TOWER PROVIDED AND INSTALLED BY THE RWIS EQUIPMENT VENDOR

NOTE: ANCHOR BOLTS OR TOWER BASE NOT SHOWN. SET AS REQUIRED BY POLE/TOWER MANUFACTURER. ANCHOR BOLTS OR TOWER BASE TO BE SUPPLIED BY RWIS EQUIPMENT VENDOR.

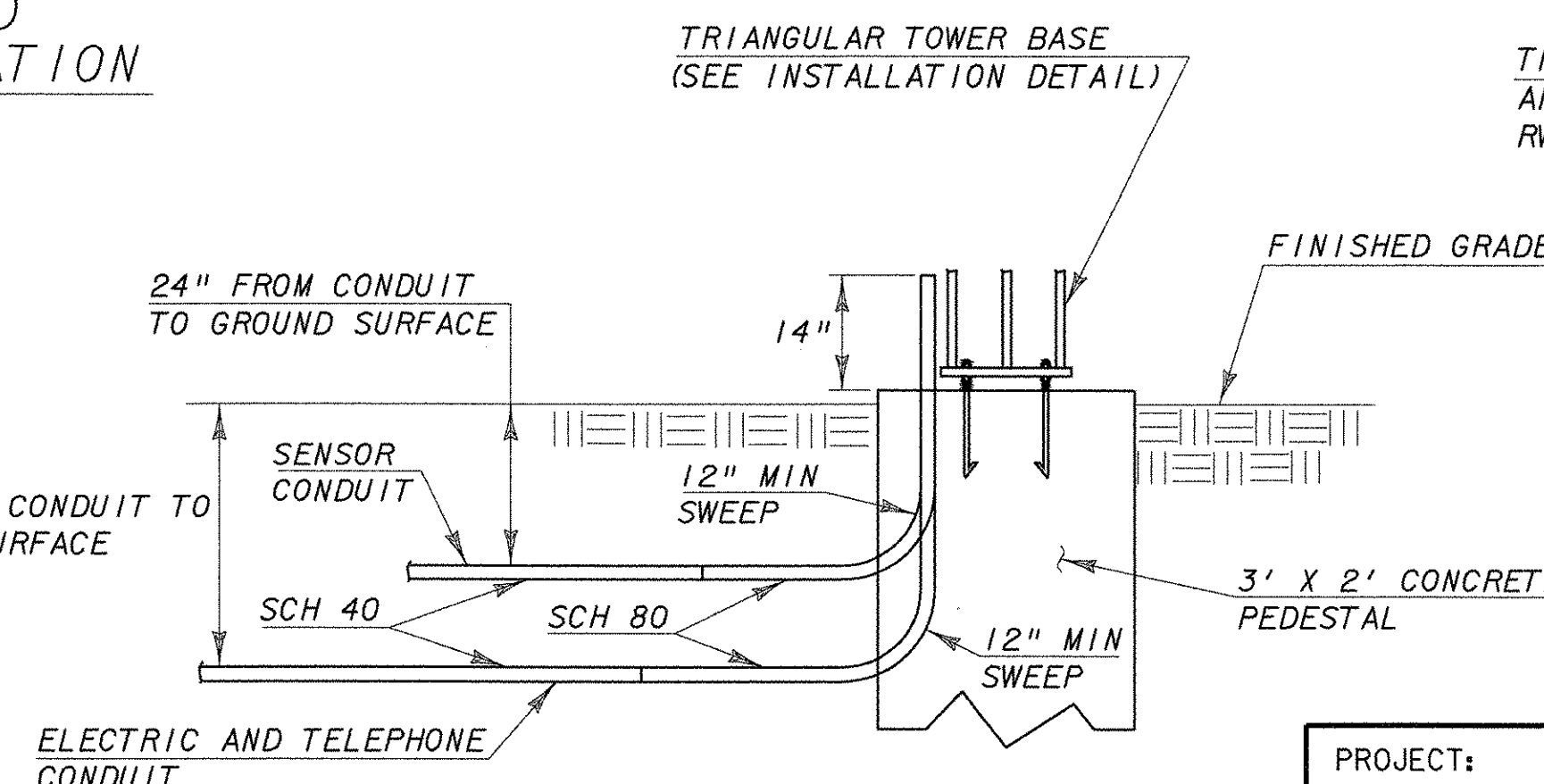
THE CONTRACTOR WILL COORDINATE WITH THE TOWER MANUFACTURER WHEN THE STEM OF THE FOUNDATION WILL BE POURED, SO THE CONTRACTOR CAN PROPERLY SET THE ANCHOR BOLTS AND BASE PLATE OF THE POLE/ TRIANGULAR TOWER BASE.



REINFORCING DETAIL PIER TIE
N. T. S.



REINFORCING DETAIL PIER STEEL
N. T. S.



CONDUIT PENETRATION DETAIL FOUNDATION / PIER
N. T. S.

30' TOWER FIXTURES
N. T. S.

FOUNDATION REINFORCEMENT SCHEDULE
(IF LEDGE IS ENCOUNTERED)

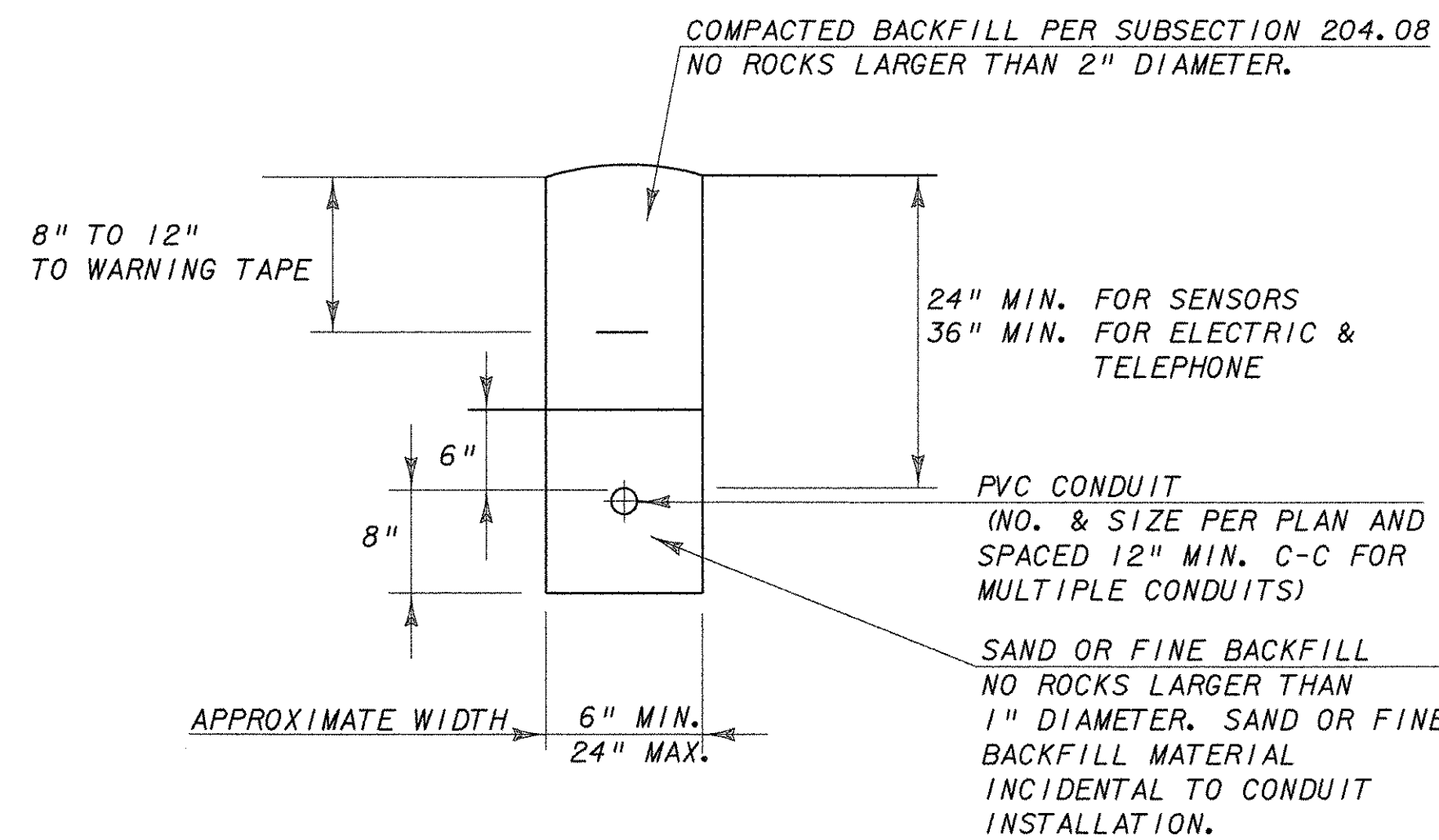
DEPTH TO LEDGE	PIER HEIGHT "A"	BAR DIMENSION "B"	# TIES @ SPACING "C"
6' OR >	4'	66"	7 @ 11" O.C.
5'	3'	54"	6 @ 10.8" O.C.
4'	2'	42"	5 @ 10.5" O.C.
3'	1'	30"	4 @ 10" O.C.

FAIR HAVEN

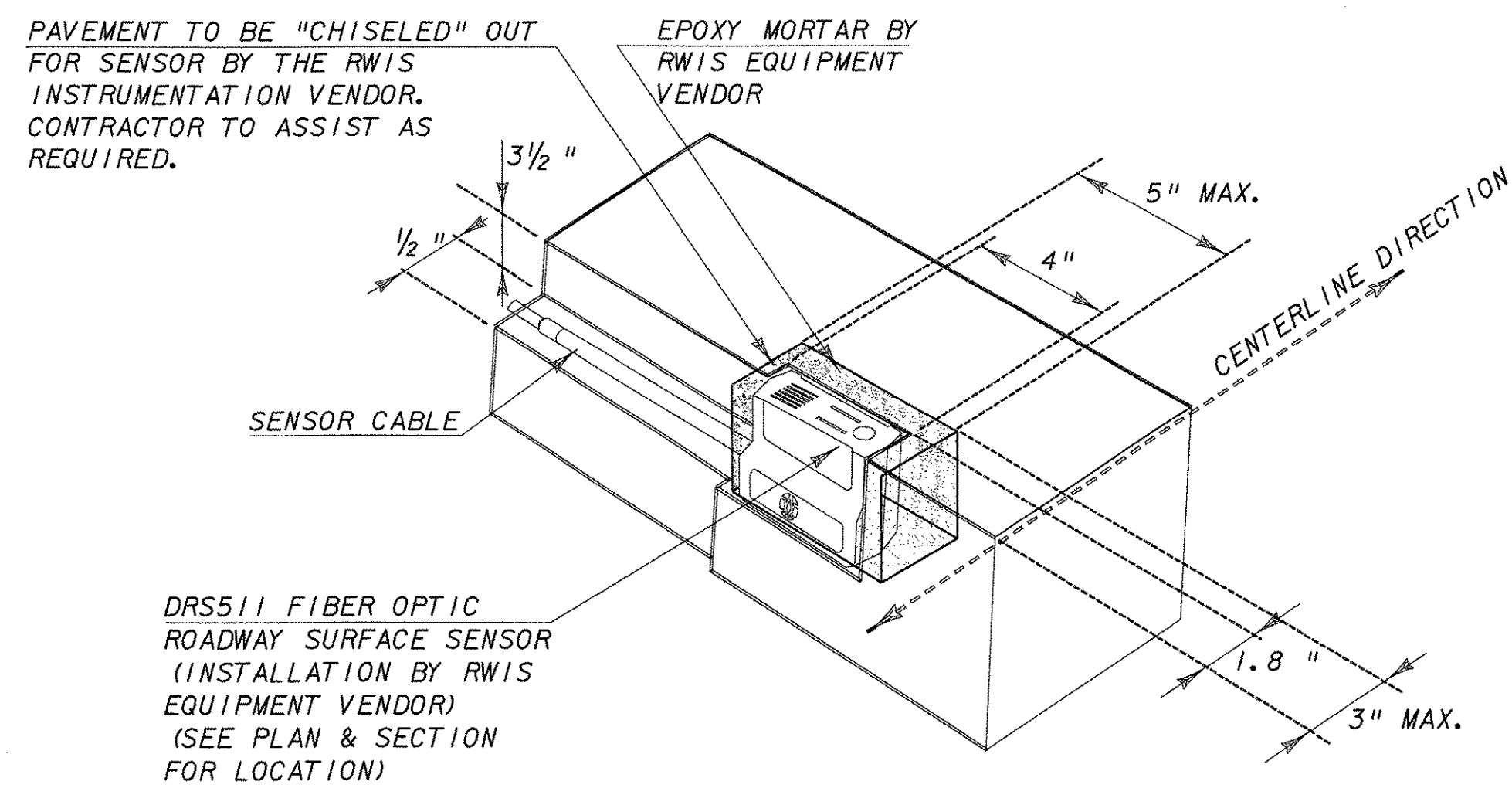
PROJECT: FAIR HAVEN: RWIS
MENDON: RWIS

FILE NAME: 010001del.dgn
PROJECT LEADER: D. GRAHAVOC
DESIGNED BY: BMB
FOUNDATION DETAILS

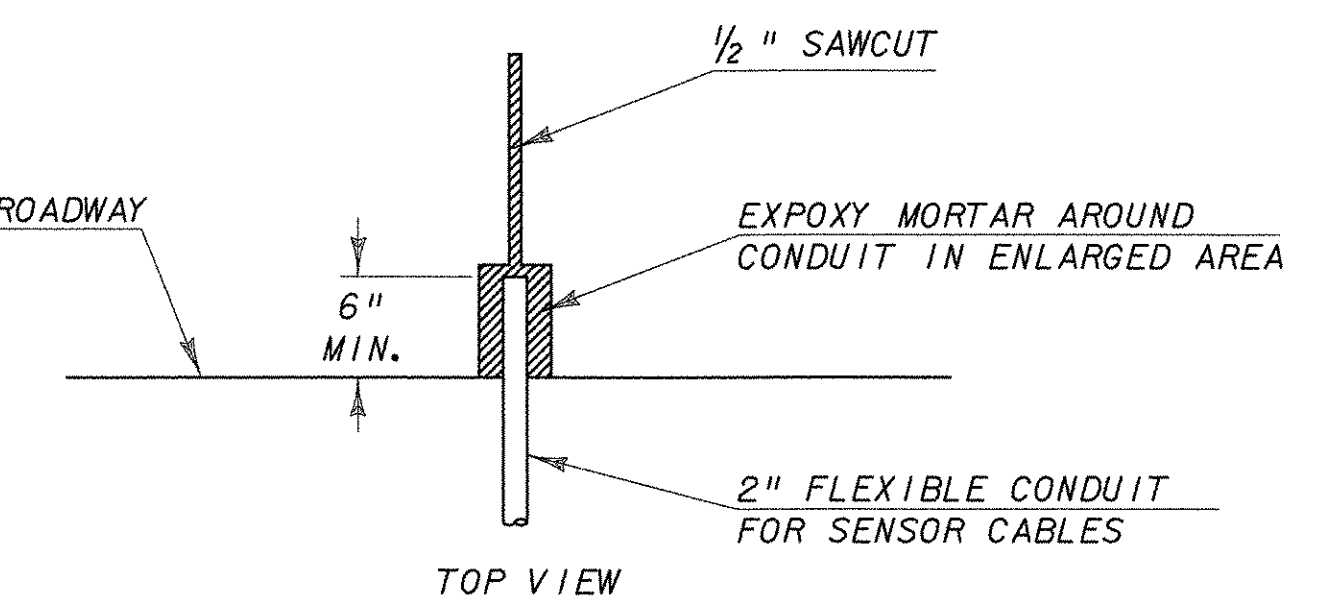
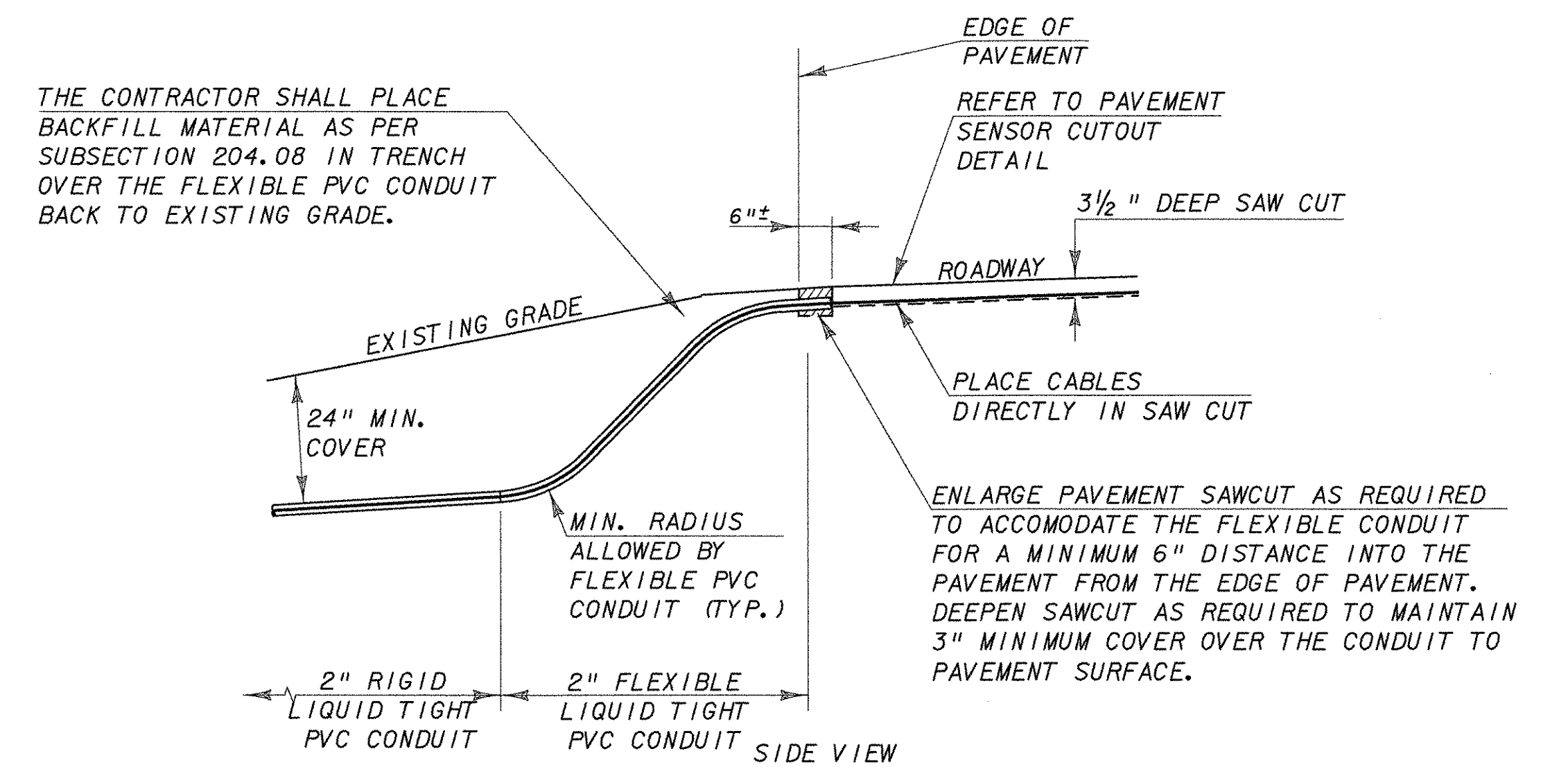
PLOT DATE: 24-AUG-2007
DRAWN BY: MAL
CHECKED BY: MDL
SHEET 7 OF 12



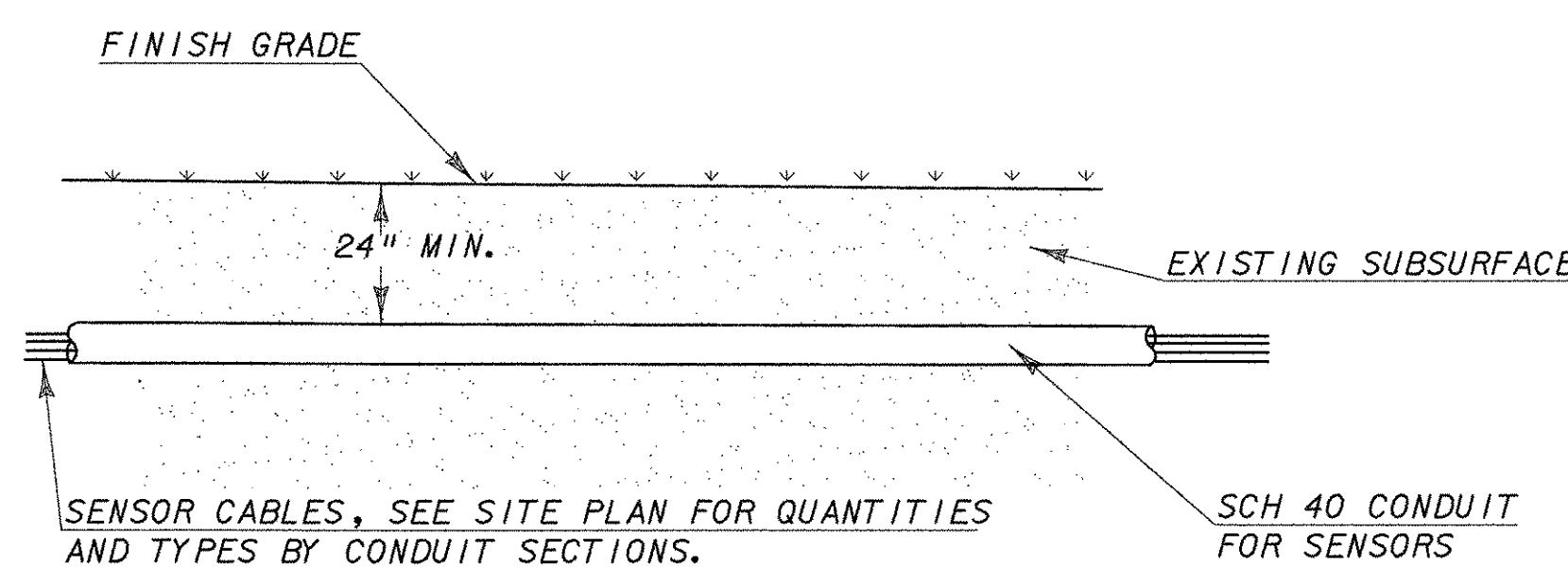
TYPICAL TRENCH SECTION - CONDUIT
N.T.S.



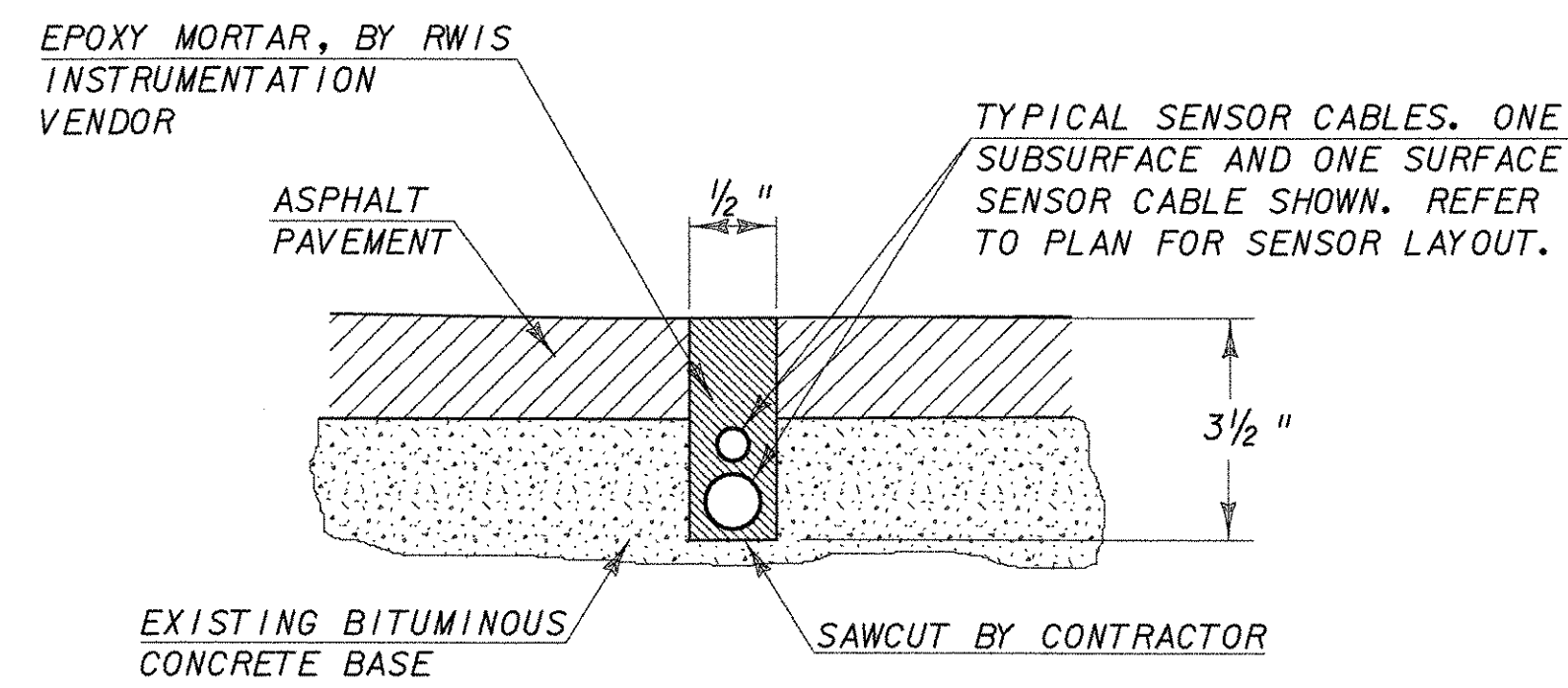
PAVEMENT SENSOR CUTOUT DETAIL
(DETAIL COURTESY OF VAISALA CORPORATION)
N.T.S.



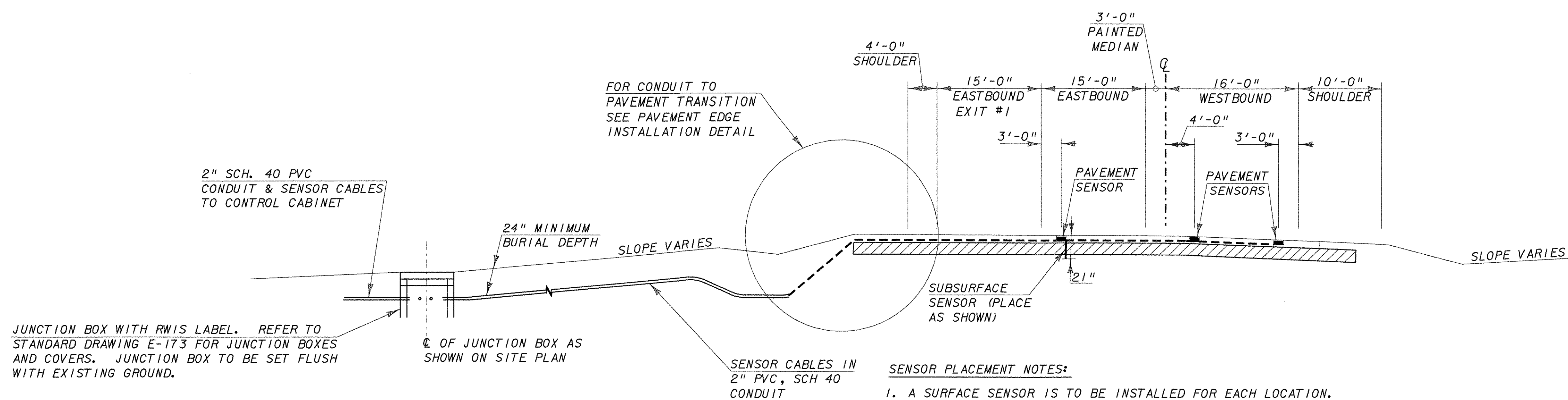
PAVEMENT EDGE INSTALLATION DETAIL
N.T.S.



CONDUIT DETAIL
(FOR INSTALLATION NOT UNDER PAVEMENT)
N.T.S.



ASPHALT PAVEMENT SAW CUT DETAIL
N.T.S.



- SENSOR PLACEMENT NOTES:
1. A SURFACE SENSOR IS TO BE INSTALLED FOR EACH LOCATION.
 2. A SUBSURFACE SENSOR IS TO BE INSTALLED AT THE EASTBOUND SENSOR LOCATION ONLY.

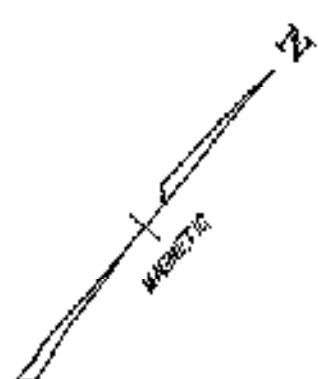
- NOTE:
1. ANY DETAILS FOR INSTALLATION OF THE SENSORS NOT SHOWN ON THIS DRAWING SHALL BE AS PER STANDARD DRAWING E-172.
 2. CONTRACTOR TO BE RESPONSIBLE FOR SAWCUTTING FOR SENSOR PLACEMENT, AS WELL AS PROVIDING PULL STRING IN CONDUIT, CLEANING AND DRYING OF THE SAWCUT AND ASSISTANCE AS NECESSARY FOR PULLING OF SENSOR CABLES. PAVEMENT PREPARATION (I.E. "CHISELING"), RWIS SENSOR PLACEMENT, EPOXY MORTAR PLACEMENT, SENSOR CABLE PULLING AND CABLE CONNECTIONS AT THE CONTROLS TO BE PERFORMED BY THE RWIS EQUIPMENT VENDOR.

NOTE:
DO NOT CUT SENSOR CABLE. ANY EXCESS CABLE SHALL BE COILED AND STORED IN THE JUNCTION BOX.

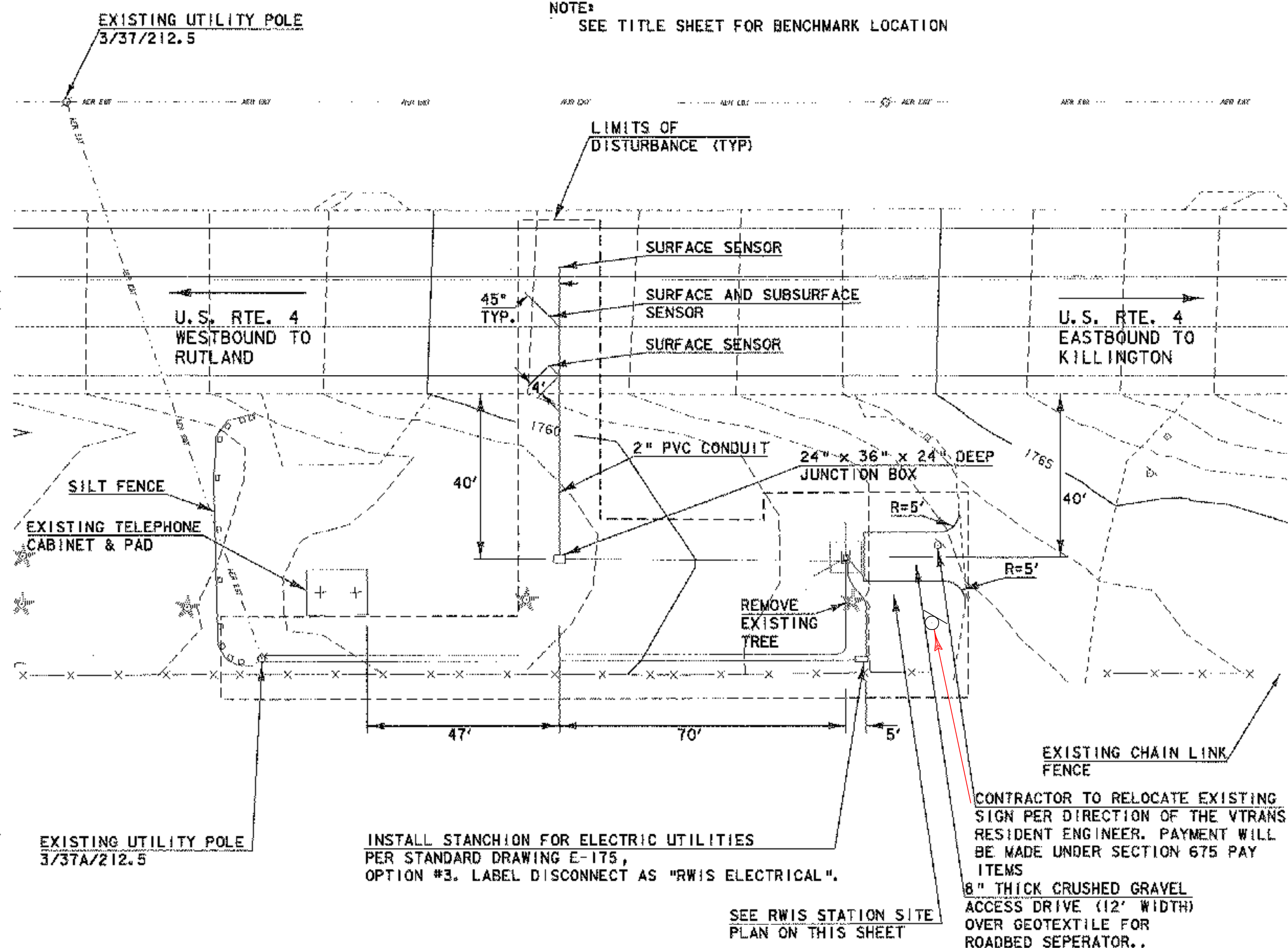
EXISTING TYPICAL SECTION FOR ROADWAY INSTALLATION
N.T.S.

FAIR HAVEN

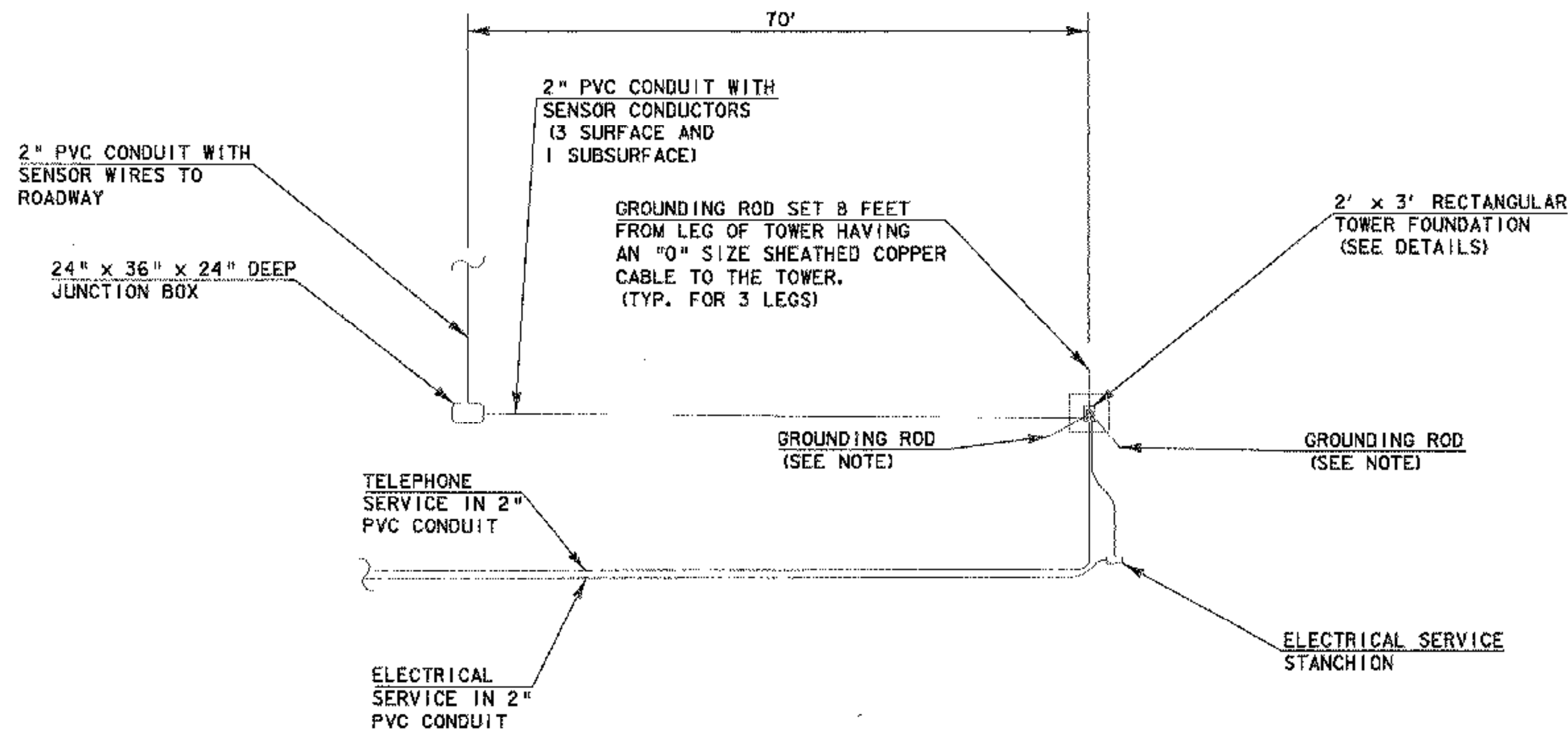
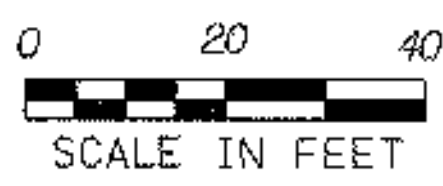
PROJECT:	FAIR HAVEN: RWIS MENDON: RWIS
FILE NAME: 010001de1.dgn	PLOT DATE: 10-AUG-2007
PROJECT LEADER: D. GRAHAVOC	DRAWN BY: MAL
DESIGNED BY: BMB	CHECKED BY: MDL
RWIS INSTALLATION DETAILS	SHEET 8 OF 12



NOTE:
SEE TITLE SHEET FOR BENCHMARK LOCATION



PROPOSED MENDON SITE PLAN
SCALE 1" = 20'



RWIS SITE PLAN
NTS

MENDON

PROJECT:	FAIR HAVEN: RWIS MENDON: RWIS	
FILE NAME:	1a02.dgn	PLOT DATE: 10-AUG-2007
PROJECT LEADER:	D. GRAHAVOC	DRAWN BY: MAL
DESIGNED BY:	BMB	CHECKED BY: MOL
SITE PLAN		SHEET 9 OF 12

GENERAL NOTES

- ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION (DATED 2006) AND THE LATEST REVISIONS THEREOF.
- NO EXISTING MONUMENTS, BOUNDS, IRON PINS OR PROPERTY CORNERS SHALL BE DISTURBED WITHOUT MAKING PROVISIONS FOR RELOCATION WITH A SURVEYOR LICENSED IN THE STATE OF VERMONT.
- ALL WORK SHALL BE PERFORMED WITHIN THE LIMITS SHOWN ON THE DRAWINGS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DATA COLLECTION AND PREPARATION OF RECORD DRAWINGS.
- THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING EROSION IN ALL AREAS DISTURBED BY THE CONTRACTOR'S ACTIONS. COSTS FOR REQUIRED EROSION CONTROL IN ALL AREAS DISTURBED BY THE CONTRACTOR'S ACTIONS OUTSIDE THE LIMITS OF DISTURBANCE SHOWN ON AND REQUIRED BY THE ENGINEERING DRAWINGS SHALL BE INCIDENTAL TO THE CONTRACT.
- NOT USED
- IF UNFORSEEN HAND EXCAVATION IS REQUIRED BY THE CONTRACTOR, THIS WORK WILL BE PERFORMED IN ACCORDANCE WITH SUBSECTION 204.22.
- FOLD DOWN POLE OR FOLD OVER TOWER TO BE SUPPLIED AND INSTALLED BY THE RWIS EQUIPMENT VENDOR. THE CONTRACTOR SHALL INSTALL THE POLE BASE PLATE OR TOWER BASE PROVIDED BY THE RWIS EQUIPMENT VENDOR PER THE POLE/TOWER MANUFACTURER SPECIFICATIONS.
- RWIS EQUIPMENT VENDOR IS RESPONSIBLE FOR THE INSTALLATION OF ALL SURFACE AND SUB-SURFACE SENSORS IN THE ROADWAY PAVEMENT STRUCTURE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SAW CUTTING, ASSIST WITH "HOLE" WIDENING OF PAVEMENT AS SHOWN ON THE SITE PLAN AND THE RWIS INSTALLATION DETAIL SHEET, AND CLEANING AND DRYING OF THE SAWCUT WITH APPROPRIATE EQUIPMENT AND MATERIALS.
- RWIS EQUIPMENT VENDOR TO PROVIDE AND INSTALL POLE/TOWER AND ATTACHED EQUIPMENT, CONTROL PANELS, CONTROL "CABLES", SENSORS AND SENSOR CABLES, AND PROVIDE EQUIPMENT START UP AND CALIBRATION SERVICES. CONTRACTOR TO PROVIDE MANPOWER AS REQUIRED TO ERECT THE TOWER ON THE FOUNDATION.
- THE CONTRACTOR WILL PROVIDE COORDINATION WITH RWIS EQUIPMENT VENDOR TO FACILITATE PAVEMENT AND SUBSURFACE SENSOR AND ASSOCIATED CABLING INSTALLATION. THE CONTRACTOR TO COORDINATE ALL ROADWAY LANE CLOSURES AND NOTIFICATIONS FOR THE RWIS EQUIPMENT VENDOR DURING INSTALLATION.
- UTILITY TRENCH CONDUIT COVER TO BE 36 INCHES, MINIMUM, TO THE UTILITY PEDESTAL AND 24 INCHES, MINIMUM, ELSEWHERE PER STANDARD E-175. THE TRENCH FOR ALL CONDUIT SHALL BE A MAXIMUM OF 24" WIDE FOR (3) 2" CONDUITS AND A MINIMUM OF 6" WIDE FOR A SINGLE CONDUIT. THE CONTRACTOR SHALL EMPLOY SUITABLE EXCAVATION METHODS TO MINIMIZE THE DISTURBANCE TO THE EXISTING SOIL. ALL UNDERGROUND PVC CONDUIT SHALL BE SCH 40. ALL ABOVEGROUND PVC CONDUIT SHALL BE SCH 80.
- THIRTY-SIX INCH RADIUS CONDUIT SWEEPS ARE TO BE USED AT ALL 90° CHANGES OF DIRECTION EXCEPT WHERE SHOWN OTHERWISE ON THE PLANS. TWELVE INCH SWEEPS ARE THE MINIMUM.
- ALL EXCAVATION REQUIRED TO PLACE FOOTING SHALL BE PAID UNDER ITEM 204.25, STRUCTURE EXCAVATION. PAY LIMITS IN SOIL SHALL BE DEFINED AS 18" OUTSIDE THE EDGE OF THE FOOTING AND 6" BELOW THE INDICATED BOTTOM OF FOOTING. IF OVER EXCAVATION OCCURS, ADDITIONAL COMPACTED GRANULAR FILL MATERIAL SHALL BE CONSIDERED INCIDENTAL.
- FOR FOOTING IN ROCK CUT, ALL OVERBREAKAGE WIDER THAN THE WIDTH OF THE FOOTING AND BELOW THE INDICATED BOTTOM OF FOOTING SHALL BE REPLACED WITH "CONCRETE CLASS B". A MAXIMUM OF 6" AVERAGE WIDTH OR DEPTH OF OVERBREAKAGE SHALL BE PAID FOR AS "STRUCTURE EXCAVATION" AND "CONCRETE CLASS B". ANY ADDITIONAL CONCRETE REQUIRED SHALL BE PLACED AT THE COST OF THE CONTRACTOR. HORIZONTAL ROCK CUT SURFACES SHALL BE MADE LEVEL AND CLEAR OF LAITANCE AND DEBRIS, PRIOR TO PLACEMENT OF FOOTING CONCRETE.
- WEATHER SENSOR POLE, BASE PLATE AND ANCHOR BOLTS OR TRUSS TOWER BASE SHALL BE PROVIDED BY RWIS EQUIPMENT VENDOR AND INSTALLED BY THE CONTRACTOR AS RECOMMENDED BY THE MANUFACTURER. PAYMENT IS INCIDENTAL TO FOUNDATION CONSTRUCTION. RWIS EQUIPMENT VENDOR SHALL SUPPLY SHOP DRAWINGS FOR APPROVAL BY VTTRANS AT TIME OF EQUIPMENT PURCHASE.
- ROADWAY CLOSURES ARE RESTRICTED TO BETWEEN 9:00 A.M. AND 3:30 P.M. ALL ROADWAYS MUST BE OPEN TO NORMAL TRAFFIC OUTSIDE THIS PERIOD.
- TOWER BASES MAY BE SUPPLIED IN EITHER A TRIANGULAR SECTION OR A ROUND POLE SECTION. CONTRACTOR IS TO BE AWARE OF WHAT TYPE OF TOWER WILL BE INSTALLED AT EACH LOCATION. FOR TRIANGULAR TOWER SECTION, THE BASE PLATE AND ANCHOR BOLTS MUST BE PLACED AND LEVELED IN CONCRETE SECTION PRIOR TO POURING CONCRETE PIER SECTION. IF THE ROUND TOWER SECTION IS TO BE INSTALLED THE CONTRACTOR MUST EMBED, LEVEL AND SET THE LEVELING PLATE AND ANCHOR BOLTS. ANCHOR BOLTS AND LEVELING PLATE WILL BE SUPPLIED BY THE RWIS EQUIPMENT VENDOR.
- THE CONTRACTOR SHALL PERFORM ALL ELECTRICAL INSTALLATION FROM THE UTILITY SERVICE POLE TO THE UTILITY STANCHION AND TO THE RWIS STATION. THE CONTRACTOR SHALL SUPPLY THE METER SOCKET AND DISCONNECT AND ALL CONDUIT AND HARDWARE NECESSARY TO PROVIDE SERVICES FROM THE UTILITY POLE TO THE STANCHION AND TO THE RWIS STATION.
- ALL ELECTRICAL WORK PERFORMED BY EITHER THE CONTRACTOR OR THE RWIS EQUIPMENT VENDOR SHALL BE PERFORMED BY, OR INSPECTED AND APPROVED BY A LICENSED ELECTRICIAN PRIOR TO ENERGIZING ANY EQUIPMENT. THE RWIS EQUIPMENT VENDOR'S ELECTRICIAN SHALL VERIFY THAT ADEQUATE GROUNDING FOR LIGHTNING PROTECTION FOR THE TOWER AND EQUIPMENT IS INSTALLED. REVIEW AND SIGN-OFF BY VTTRANS' RESIDENT ENGINEER WILL BE REQUIRED BEFORE ACCEPTANCE OF THE INSTALLATION.

TRAFFIC CONTROL NOTES - UNDIVIDED HIGHWAY

- WHEN CONSTRUCTION EQUIPMENT IS WORKING WITHIN FIFTEEN (15) FEET OF THE ROADWAY, FLAGGERS OR UNIFORMED TRAFFIC CONTROL OFFICERS (UTO'S) SHALL BE USED TO ASSIST IN CONTROLLING TRAFFIC PER SECTION 630 OF THE SPECIFICATIONS. ITEM FOR PAYMENT FOR TRAFFIC CONTROL ASSISTANCE SHALL BE 630.10.
- TRAFFIC CONTROL DETAILS FOR TEMPORARY LANE CLOSURES WHILE WORKING ON THE ROADWAY OR ADJACENT TO THE ROADWAY SHALL REFER TO STANDARD DETAIL SHEETS E-110 & E-111.
- ALL SIGNS SHALL BE PLACED BEFORE ANY WORK BEGINS OR EQUIPMENT IS PUT ON OR ADJACENT TO THE ROADWAY FOR CONSTRUCTION. SIGNS SHALL BE COVERED OR REMOVED WHEN NOT APPLICABLE, REFER TO STANDARD DETAIL SHEETS E-100, E-101 & E-102 FOR REQUIREMENTS.
- THE CONTRACTOR SHALL HAVE CHANNELIZING DEVICES AND SIGNS IN ACCORDANCE WITH STANDARD DETAIL SHEETS E-100, E-106, E-110 & E-111, FOR TEMPORARY LANE CLOSURES ON THE PROJECT SITE BEFORE STARTING THE PROJECT.
- SINGLE (1) OR TWO (2) LANE CLOSURES ON AN UNDIVIDED HIGHWAY SHALL BE AS PER THE LATEST EDITION OF THE MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR TYPICAL APPLICATIONS 10 & 13 (TA 10 & TA 13) AND VERMONT STANDARD DETAIL SHEETS E-110 & E-111 WITH SPEED LIMIT REDUCTION REQUIREMENTS. REFER TO STANDARD DETAIL SHEETS E-100 & E-100A FOR MAIN LINE AND SIDE ROAD SIGNAGE, AS REQUIRED.
- EXISTING SPEED LIMIT SIGNS SHALL BE COVERED WHEN REDUCED SPEED SIGNS ARE POSTED.
- CHANNELIZING DEVICES OTHER THAN REFLECTORIZED PLASTIC DRUMS (AS PER STANDARD DETAIL SHEET E-106) WILL NOT BE ALLOWED.
- THE REDUCED "SPEED LIMIT XX" AND OTHER RELATED SIGNS SHALL BE REMOVED OR COVERED WHEN WORK IS NOT IN PROGRESS AND THE ROADWAY IS NOT RESTRICTED.
- "REDUCED SPEED AHEAD" SIGNS MAY BE USED IN LIEU OF "SPEED ZONE AHEAD".
- FOR RELATIVELY SHORT-TERM PROJECTS WITH NO OFFICIAL SPEED ZONE ENACTMENT, THE SPEED LIMIT AND REDUCED SPEED LIMIT SIGNS CAN BE SUBSTITUTED WITH ADVISORY PLAQUES MOUNTED AS SUPPLEMENTAL SIGNS ON OTHER WARNING SIGNS.
- ALL FIXED SIGNS SHALL BE MOUNTED ON NCHRP-350 APPROVED SUPPORTS (I.E. YIELDING STEEL, ALUMINUM OR WOOD) AS SHOWN ON THE APPROPRIATE STANDARD DETAIL SHEETS.
- PORTABLE SIGNS SHALL BE MOUNTED ON NCHRP-350 APPROVED SUPPORTS AND KEPT LEVEL WHEN PLACED ON THE EDGE OF THE ROADWAY AND ALL VEGETATION THAT INTERFERES WITH VISIBILITY OF THE SIGNS SHALL BE REMOVED. PAYMENT FOR PLACEMENT AND MAINTENANCE SHALL BE INCIDENTAL TO OTHER ITEMS. WHEN PORTABLE SIGNS ARE PLACED BEHIND GUARDRAIL, THE BOTTOM OF THE SIGN FACES SHALL BE PLACED ABOVE THE TOP OF THE GUARDRAIL.
- WARNING LIGHTS SHALL NOT BE USED ON CHANNELIZING DEVICES.
- THE NUMBER OF CHANNELIZING DEVICES AND OTHER TRAFFIC CONTROL DEVICES SHOWN ON STANDARD DETAIL SHEETS E-110 & E-111 ARE DETERMINED BASED ON INDIVIDUAL DETOUR CONDITIONS (TAPERS, SPEED LIMITS, LENGTH OF DETOUR CURVE, ETC.) OR AS DIRECTED BY THE ENGINEER.
- NO LONG-TERM LANE CLOSURES (GREATER THAN 6-1/2 CONTINUOUS HOURS IN A DAY) SHALL BE PERMITTED. REFER TO GENERAL CONSTRUCTION NOTE #17.

CONSTRUCTION SEQUENCE

- PRE-CONSTRUCTION: TAPE LIMITS OF CONSTRUCTION AND MEET WITH PROJECT ENGINEER PRIOR TO BEGINNING ANY OTHER SITE WORK. PAYMENT FOR PROJECT DEMARCATION FENCE (PDF) SHALL BE UNDER ITEM 653.55.
- INSTALL SILT FENCE AT ALL LOCATIONS SHOWN ON PLAN OR AS DIRECTED BY THE ENGINEER.
- STOCKPILE TOPSOIL & ROCK AND INSTALL EROSION CONTROL FOR STOCKPILE AS DIRECTED BY THE ENGINEER.
- PROCEED WITH WORK UNIT BY UNIT, LIMITING THE DURATION OF DISTURBANCE AS MUCH AS POSSIBLE.
- BEGIN TURF ESTABLISHMENT PER SECTION 651 OF THE SPECIFICATIONS IMMEDIATELY AFTER GRADING. BASIS OF PAYMENT SHALL BE PER SUBSECTION 651.13. SEE SEEDING FORMULA.
- INSPECT ALL DISTURBED AREAS ON A DAILY BASIS. INSTALL OR MAINTAIN TEMPORARY SILT FENCE, ETC., AS FOUND NECESSARY TO PREVENT EROSION.
- PLACE TOPSOIL, FERTILIZER, LIME, SEED AND MULCH IN A UNIT BY UNIT MANNER.
- MONITOR THE SITE AND MAINTAIN STRUCTURES AS NEEDED UNTIL FULL RE-VEGETATION IS ESTABLISHED. RESEED AS NECESSARY.

TEMPORARY SEEDING

- WHEN PERMANENT SEEDING CANNOT BE INSTALLED BY SEPTEMBER 15, TEMPORARY SEEDING AND MULCHING OF ALL DISTURBED AREAS SHALL BE INSTALLED IMMEDIATELY AND MAINTAINED UNTIL PERMANENT MEASURES CAN BE INSTALLED IN THE FOLLOWING PLANTING SEASON BY THE CONTRACTOR.
- TEMPORARY SEED TO BE WINTER RYE, 2.5 LBS PER 1000 SQ. FT., SEED AND TOPSOIL MIXTURE TO DEPTH OF 1 INCH. UNIFORMLY FERTILIZE, NOT LESS THAN 7 LBS PER 1000 SQ. FT., OF 10-10-10 OR EQUIVALENT. SPREAD SEED UNIFORMLY. FIRM SOIL BY ROLLING OR PACKING; IF NOT FEASIBLE, THEN RAKE LIGHTLY TO COVER SEEDS.
- MULCH ALL DISTURBED AREAS WITH 1-1/2 TO 2-1/2 TONS OF HAY OR STRAW PER ACRE. ANCHOR ON ALL SLOPES 2:1 OR STEEPER AND ON FLATTER SLOPES SUBJECT TO WASH OR WIND. MULCH SHALL MEET SPECIFICATIONS 755.10 (a). PAYMENT FOR MULCH SHALL BE UNDER ITEM 651.25.

SEEDING FORMULA - RURAL AREAS

% WT.	LBS. /A.	NAME	PUR %	GERM %
37.5	22.5	CREeping RED FESCUE	98	85
37.5	22.5	TALL FESCUE	95	90
5.0	3.0	RED TOP	95	90
15.0	9.0	BIRDSFOOT TREFOIL	98	85
5.0	3.0	ANNUAL RYE GRASS	95	85
100.0	60.0			

SEEDING GENERAL NOTES

SEEDING MIXTURE SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40 % BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.

SEEDS TO BE APPLIED PER SEEDING FORMULA OR AS DIRECTED BY THE ENGINEER.

FERTILIZER: FORMULA 10-20-10, TO BE USED WITH SEED APPLIED AT THE RATE OF 500 LBS/ACRE (HYDRO SEEDERS MAY USE 19-19-19 FORMULA).

AGRICULTURAL LIMESTONE: TO BE APPLIED AT THE RATE OF 2 TONS/ACRE, OR AS DIRECTED BY THE ENGINEER.

HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 2 TONS/ACRE, OR AS DIRECTED BY THE ENGINEER.

TOPSOIL: TO BE USED WITH SEED PER 651.06, OR AS DIRECTED BY THE ENGINEER.

EROSION CONTROL GENERAL NOTES

1. GENERAL

IT IS ANTICIPATED THAT THIS PROJECT WILL DISTURB AN ESTIMATED 0.5 ACRES OF LAND INCLUDING BOTH ONSITE AND CONTIGUOUS WASTE, BORROW, STAGING, AND HAUL ROADS. SHOULD THE AREA OF DISTURBANCE CHANGE AND RESULT IN 1 OR MORE ACRES OF EARTH DISTURBANCE, OR SHOULD THE PROJECT BECOME PART OF A COMMON PLAN OF DEVELOPMENT, THEN THE CONTRACTOR WILL BE RESPONSIBLE FOR ADDITIONAL PLANNING WITH THE AGENCY OF NATURAL RESOURCES.

EROSION & SEDIMENT CONTROL PRACTICES INCLUDE THE USE OF SILT FENCES. ALL EROSION CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS CONTAINED IN THE VNR "LOW RISK SITE HANDBOOK FOR EROSION PREVENTION AND SEDIMENT CONTROL (2006 OR LATEST REVISION)". (REFER TO: http://www.vtwaterquality.org/stormwater/hm/sw_ogp.htm)

TOPSOIL STOCKPILING: TOPSOIL SHALL BE STRIPPED AND STOCKPILED FOR LATER USE ON CRITICAL AREAS AND ALL OTHER AREAS TO BE SEEDDED. THE STOCKPILE WILL NOT BE COMPACTED AND SHALL BE STABILIZED AGAINST EROSION WITH TEMPORARY SEEDING.

2. STRUCTURAL MEASURES

SILT FENCES ARE TO BE INSTALLED IN THE AREAS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER. THEY ARE INTENDED PRIMARILY TO INTERCEPT RUNOFF AND FILTER SMALL VOLUMES OF "SHEET FLOW" RUNOFF.

3. MAINTENANCE

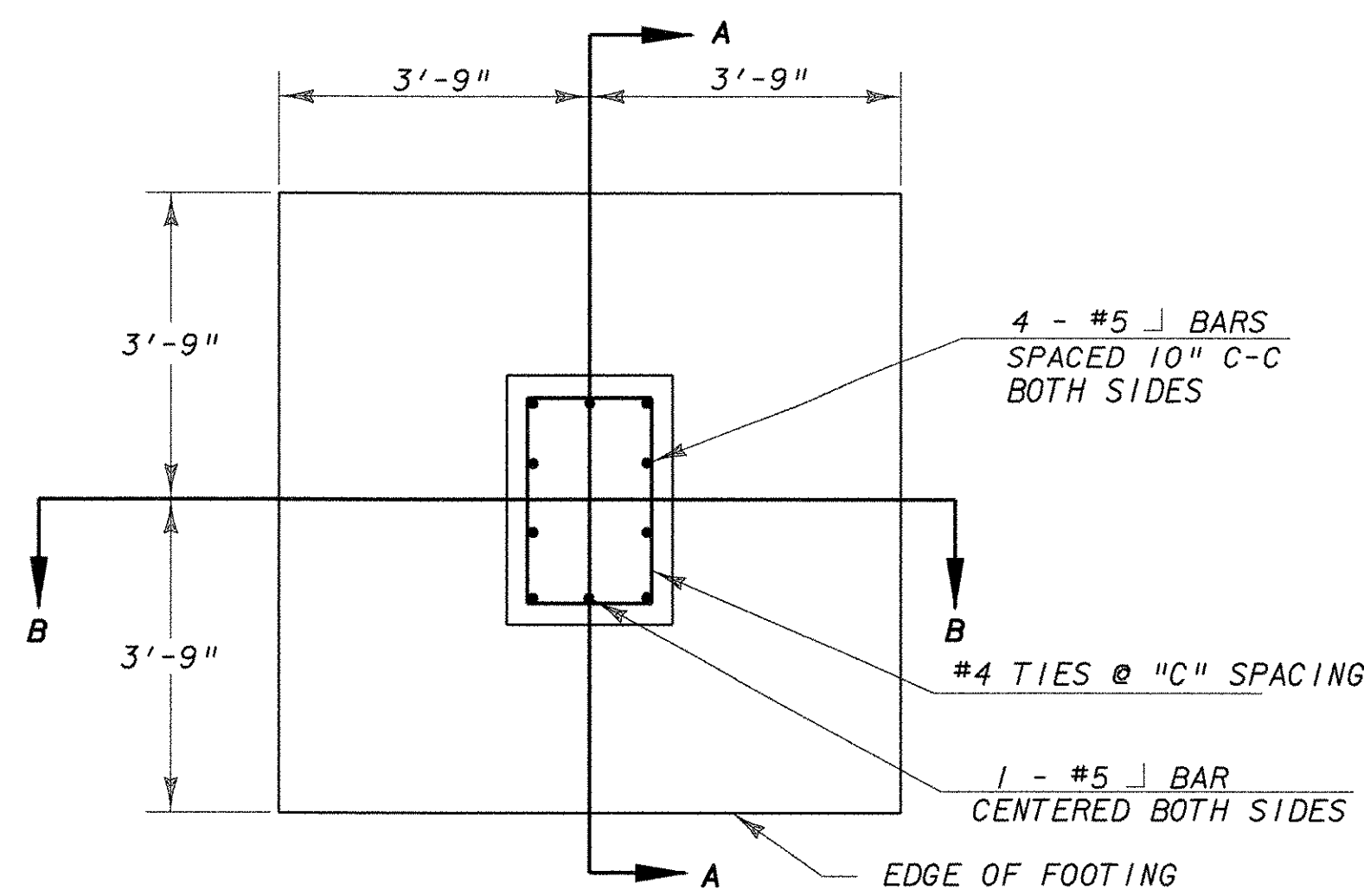
DURING THE PERIOD OF CONSTRUCTION AND/OR UNTIL VIGOROUS VEGETATIVE GROWTH IS ESTABLISHED:

SEEDDED AREAS WILL BE FERTILIZED AND RE-SEEDDED AS NECESSARY TO ENSURE PROPER VEGETATIVE ESTABLISHMENT.

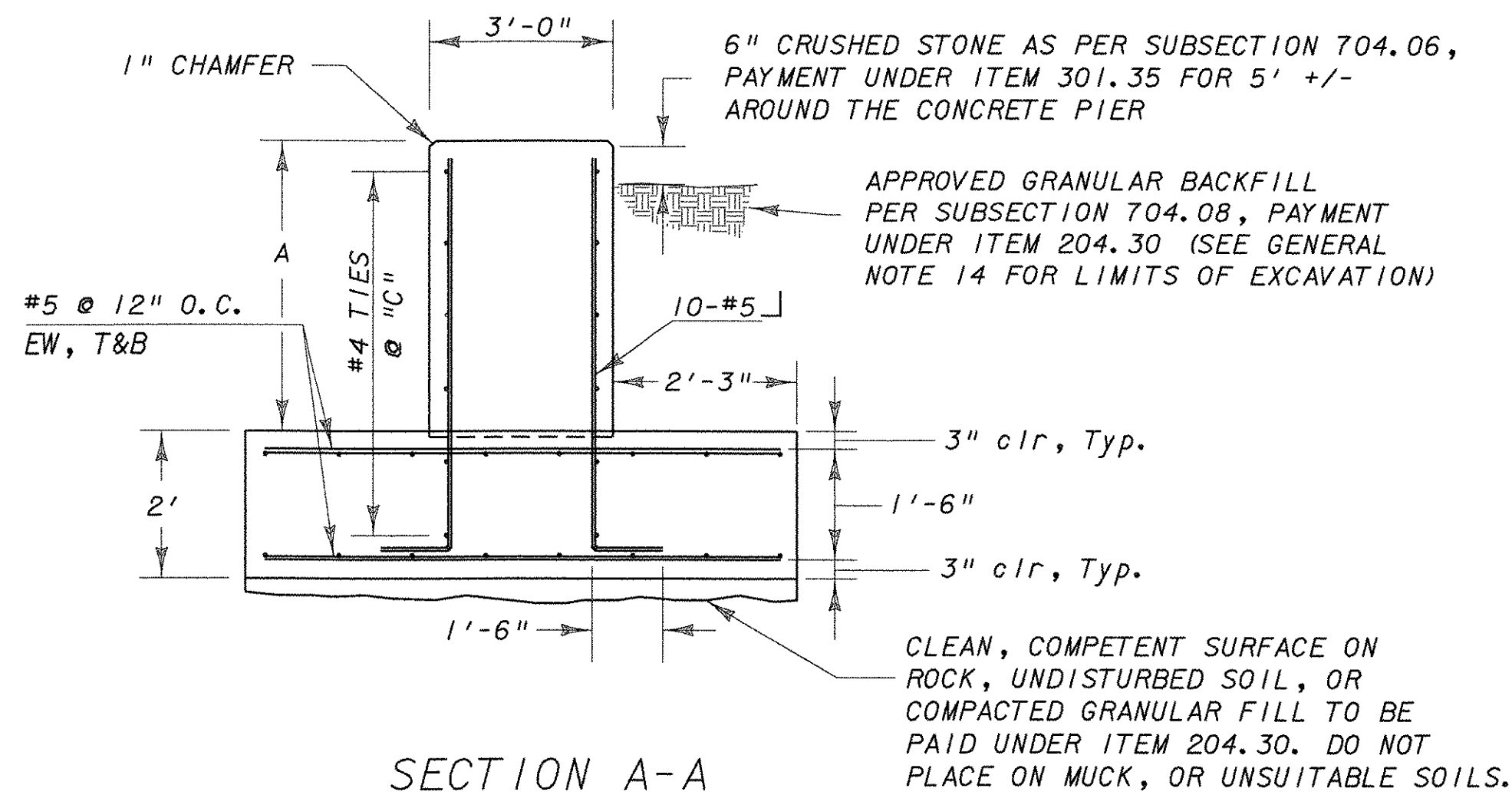
SILT FENCES WILL BE CHECKED BY THE CONTRACTOR REGULARLY AND AFTER EACH RAINFALL EVENT. NECESSARY REPAIRS WILL BE MADE AT THE CONTRACTOR'S EXPENSE TO CORRECT UNDERMINING OR DETERIORATION OF THE BARRIERS.

MENDON

PROJECT:	FAIR HAVEN: RWIS MENDON: RWIS	
FILE NAME:	010001gn2.dgn	PLOT DATE: 10-AUG-2007
PROJECT LEADER:	D. GRAHAVOC	DRAWN BY: MAL
DESIGNED BY:	BMB	CHECKED BY: MDL
GENERAL NOTES		SHEET 10 OF 12



RWIS FOUNDATION PLAN - TOP VIEW
N. T. S.



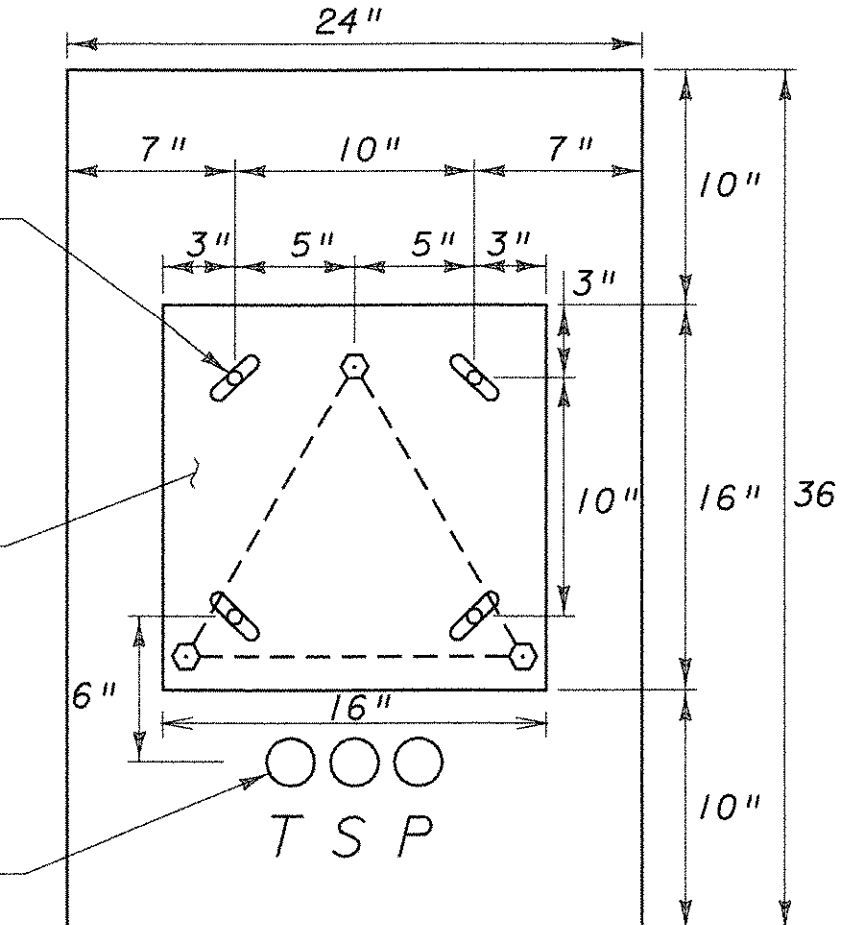
SECTION A-A
RWIS FOUNDATION PLAN - SIDE VIEW
N. T. S.

NOTE: THE 5/8" "J" ANCHOR BOLTS AND CONDUITS SHALL BE THE ONLY COMPONENTS POSITIONED IN THE CONCRETE PIER.

5/8" X 18" LONG "J" ANCHOR BOLT SUPPLIED BY TOWER VENDOR

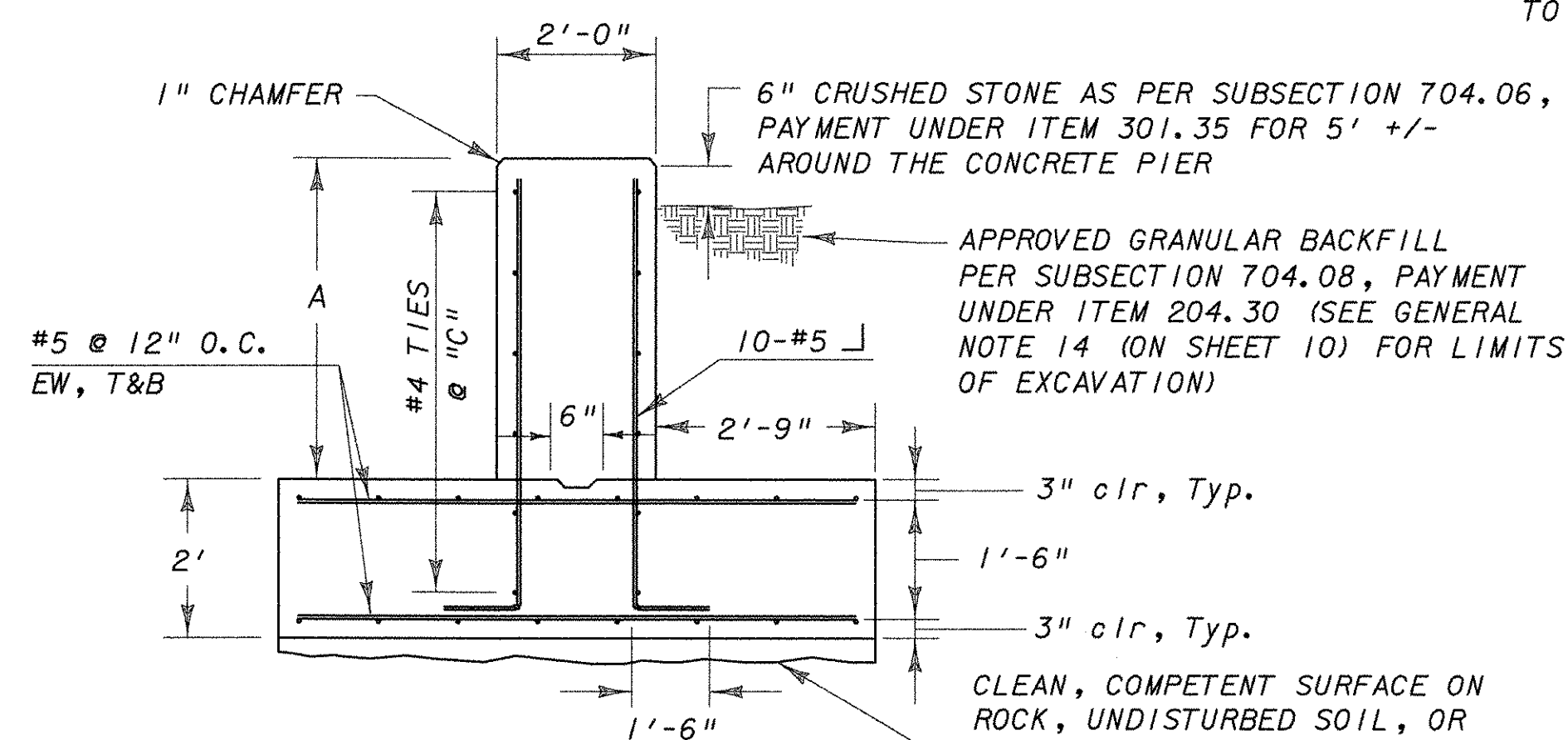
TOWER BASE PLATE SUPPLIED BY TOWER VENDOR

CONDUITS FOR SENSORS, POWER AND PHONE (SEE SITE PLAN FOR NUMBER AND SIZE)



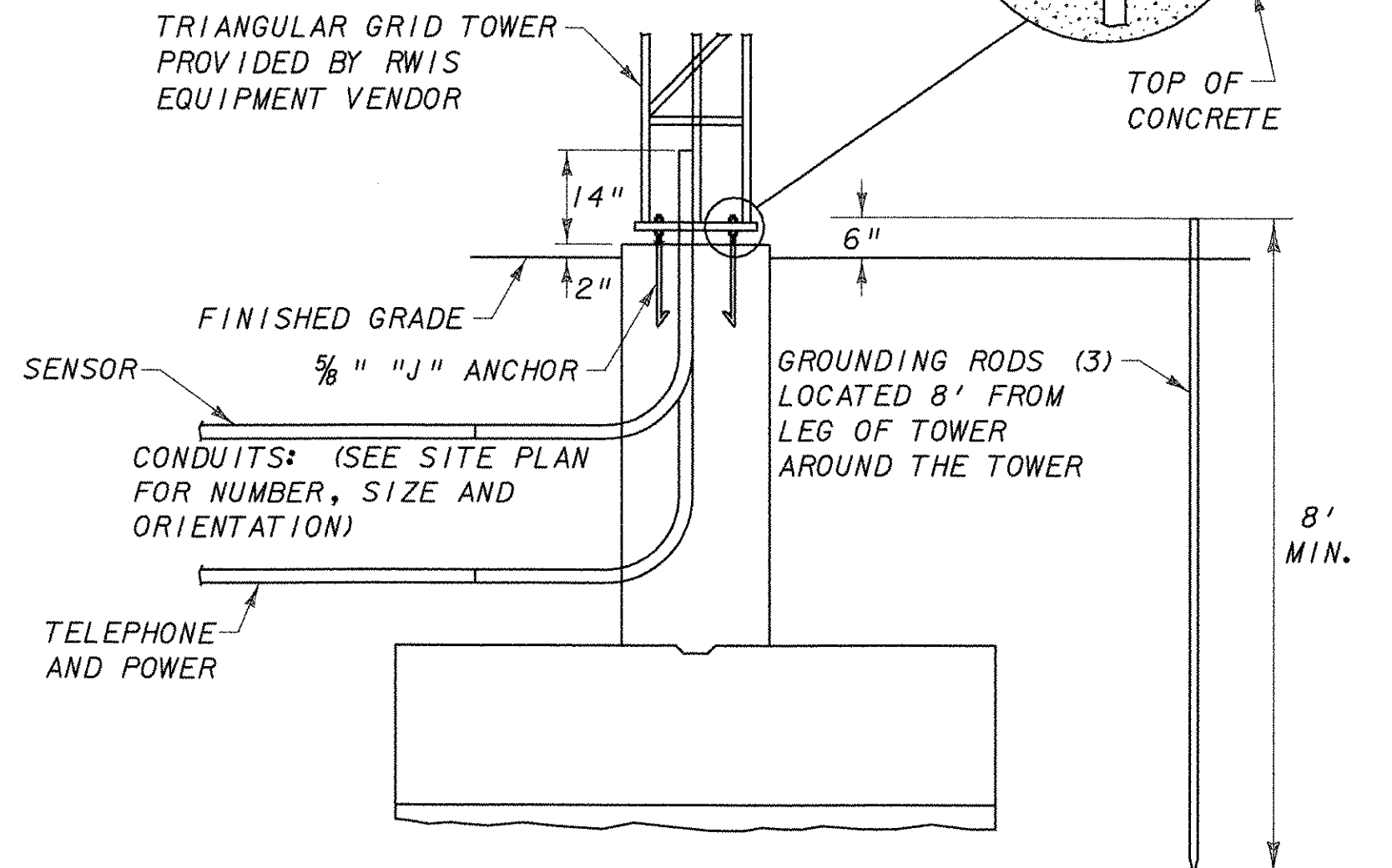
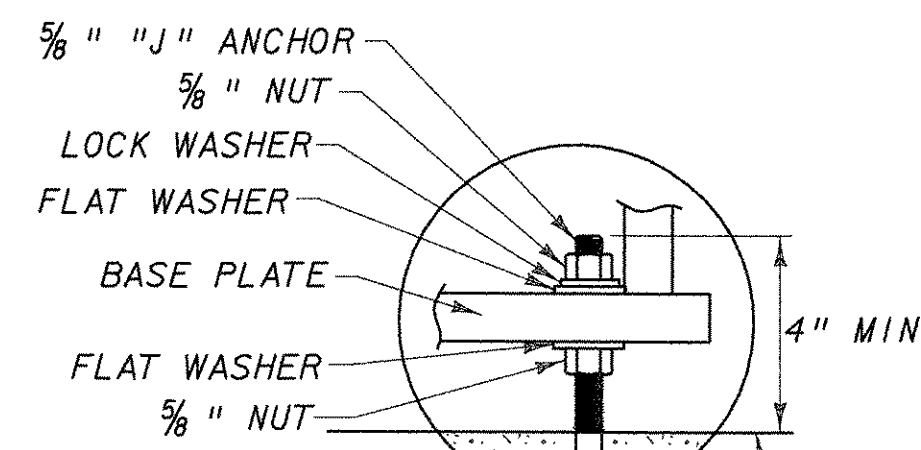
T = TELEPHONE
S = SENSOR
P = POWER

TOWER BASE PLATE ANCHOR BOLT PLACEMENT
N. T. S.

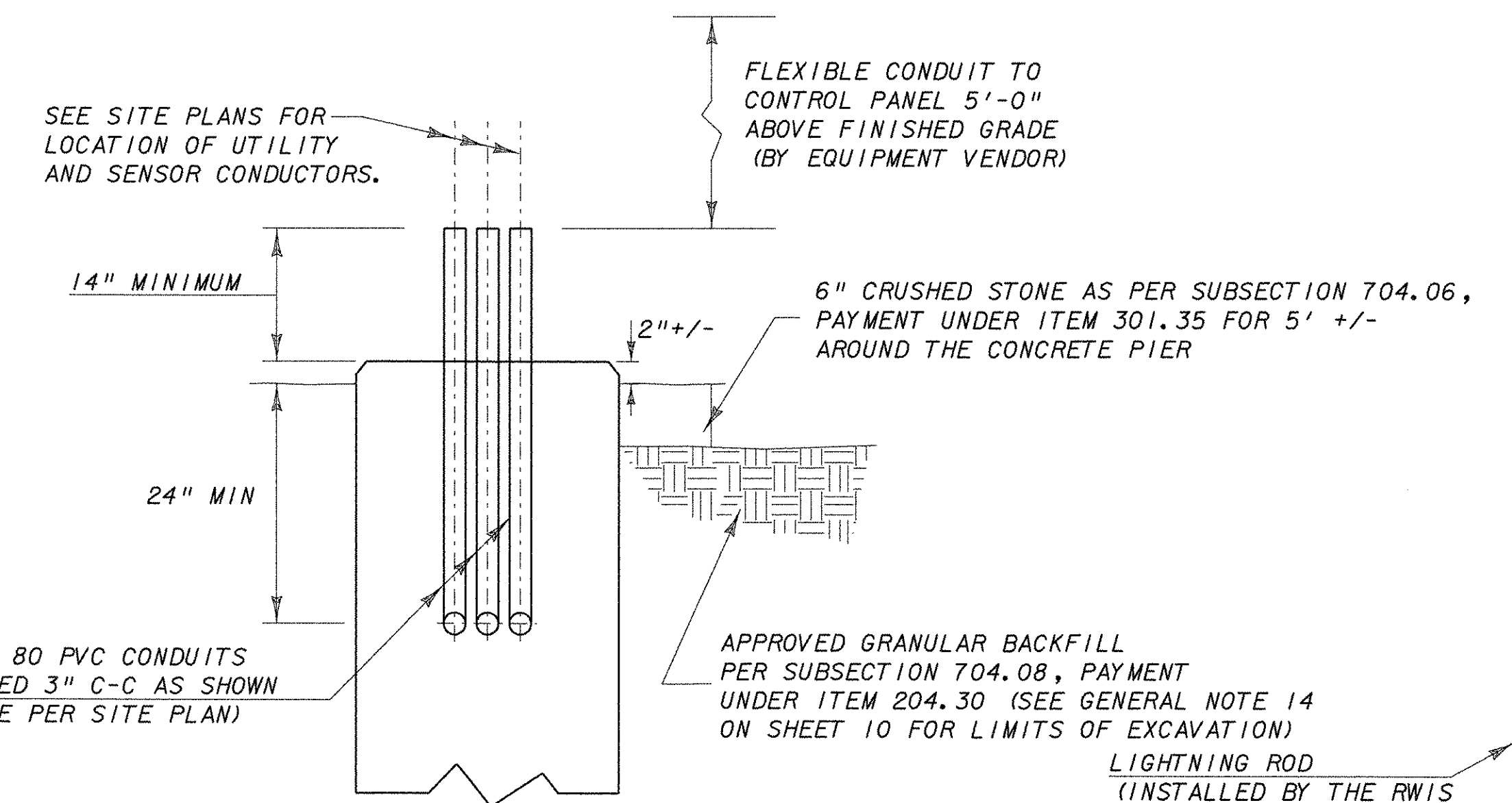


SECTION B-B
RWIS FOUNDATION PLAN - FRONT VIEW
N. T. S.

NOTE: BASE PLATE TO BE INSTALLED LEVEL TO ALLOW PROPER INSTALLATION OF TOWER.



TOWER BASE PLATE AND GROUNDING ROD INSTALLATION
N. T. S.



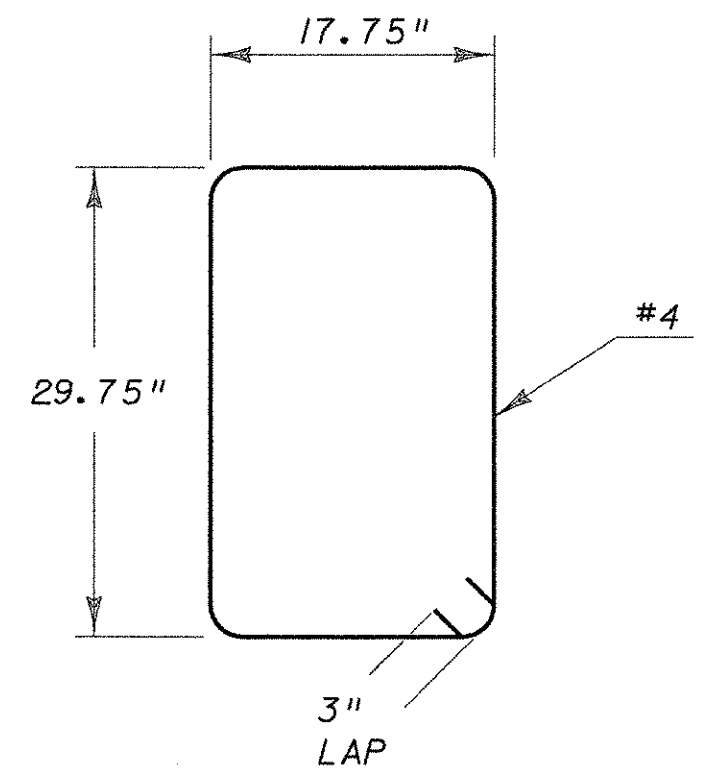
ELEVATION OF CONCRETE PIER
N. T. S.

NOTE: ANCHOR BOLTS OR TOWER BASE NOT SHOWN. SET AS REQUIRED BY POLE/TOWER MANUFACTURER. ANCHOR BOLTS OR TOWER BASE TO BE SUPPLIED BY RWIS EQUIPMENT VENDOR.

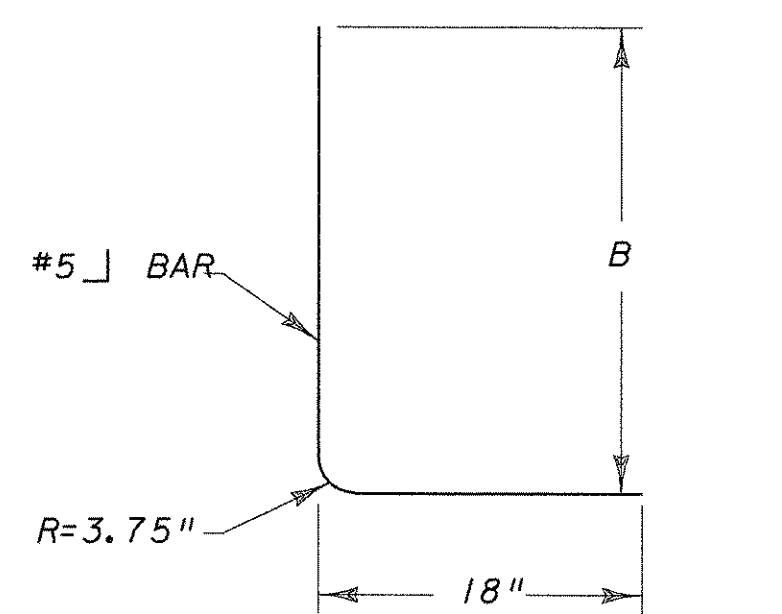
THE CONTRACTOR WILL COORDINATE WITH THE TOWER MANUFACTURER WHEN THE STEM OF THE FOUNDATION WILL BE POURED, SO THE CONTRACTOR CAN PROPERLY SET THE ANCHOR BOLTS AND BASE PLATE OF THE POLE/ TRIANGULAR TOWER BASE.

DEPTH TO LEDGE	PIER HEIGHT "A"	BAR DIMENSION "B"	# TIES @ SPACING "C"
6' OR >	4'	66"	7 @ 11" O.C.
5'	3'	54"	6 @ 10.8" O.C.
4'	2'	42"	5 @ 10.5" O.C.
3'	1'	30"	4 @ 10" O.C.

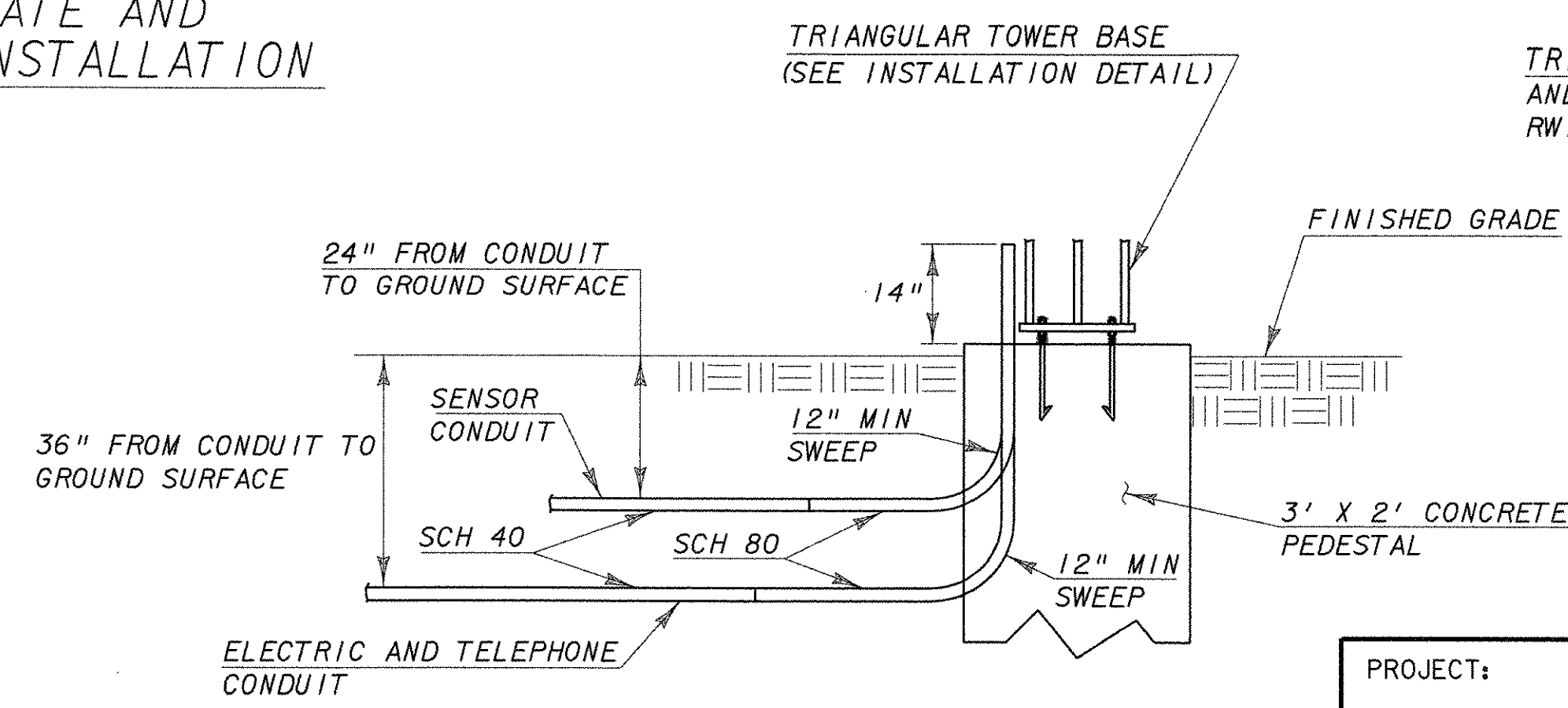
FOUNDATION REINFORCEMENT SCHEDULE
(IF LEDGE IS ENCOUNTERED)



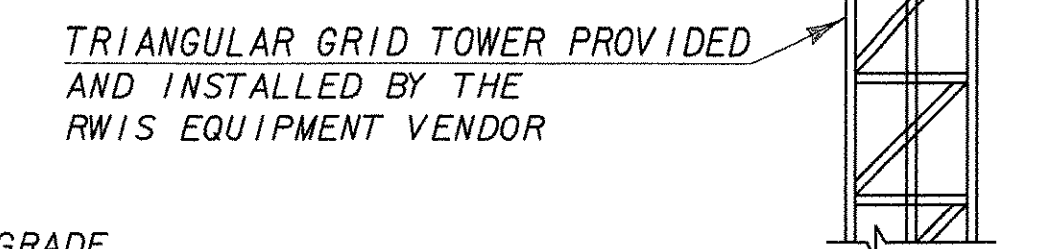
REINFORCING DETAIL PIER TIE
N. T. S.



REINFORCING DETAIL PIER STEEL
N. T. S.

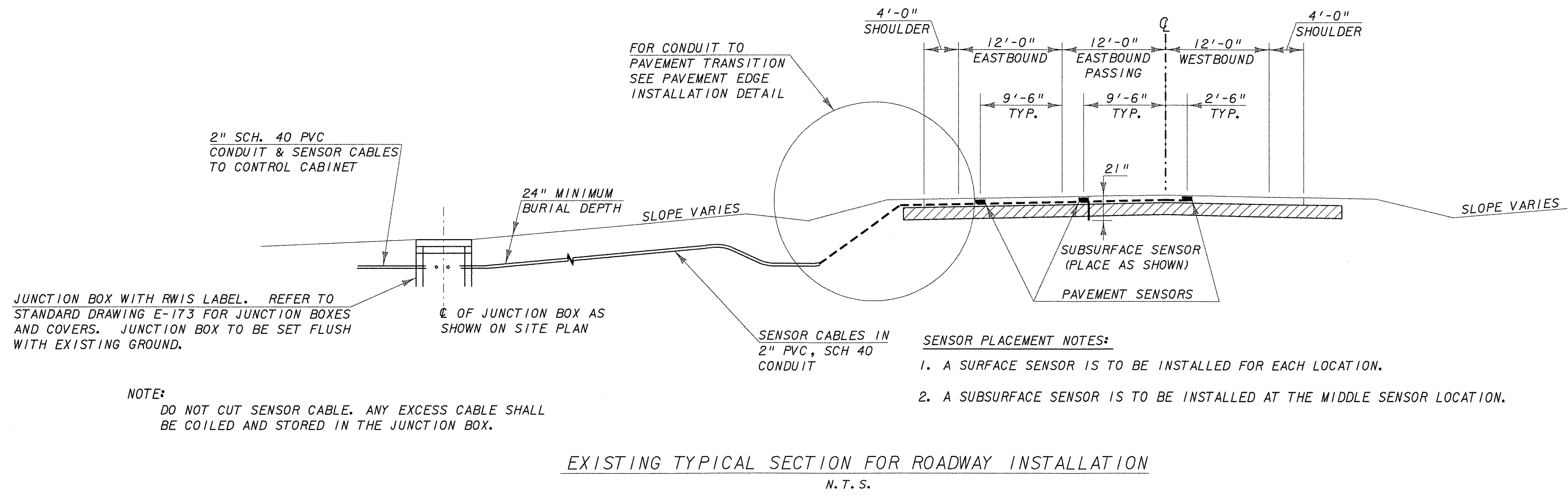
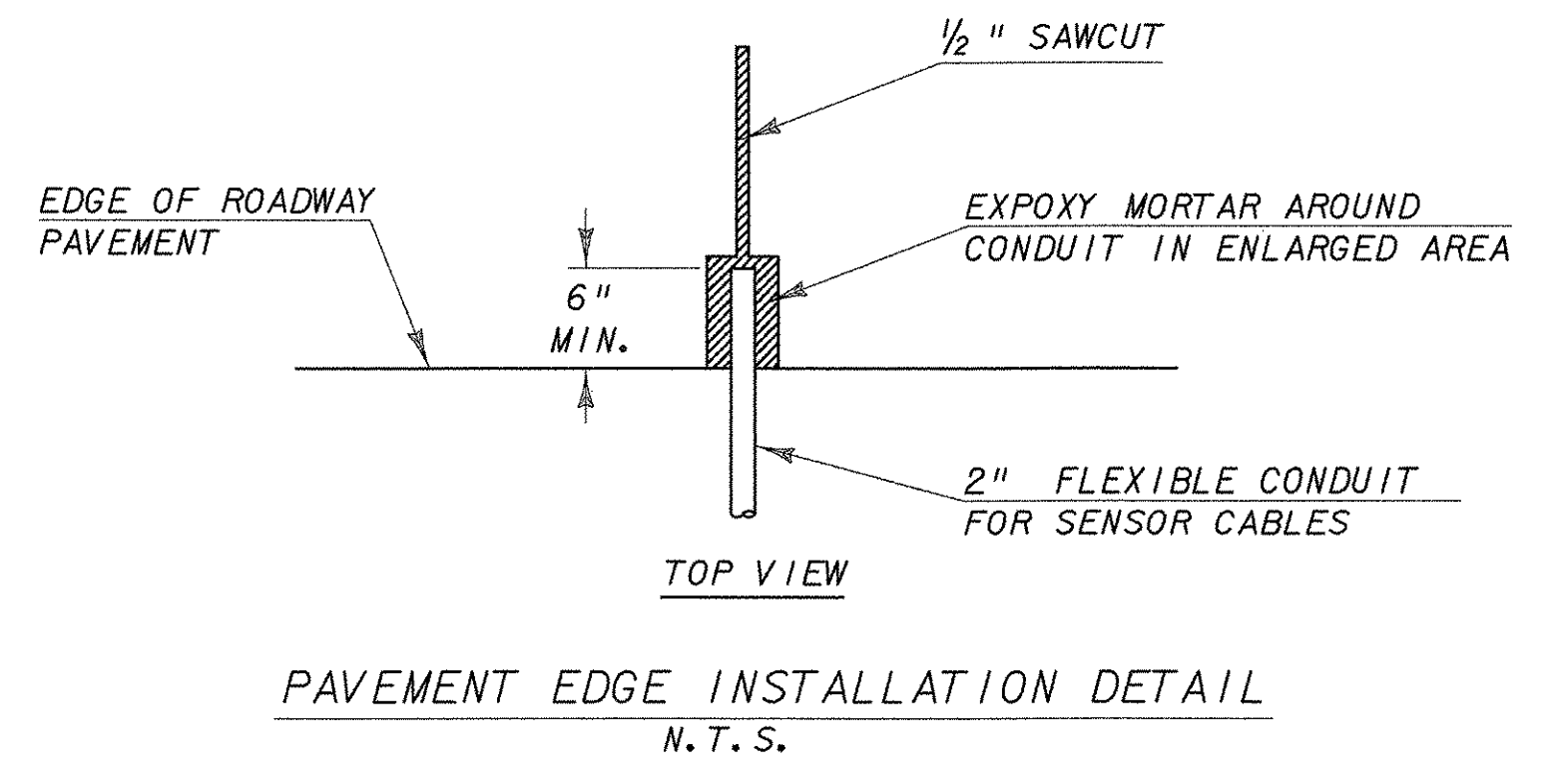
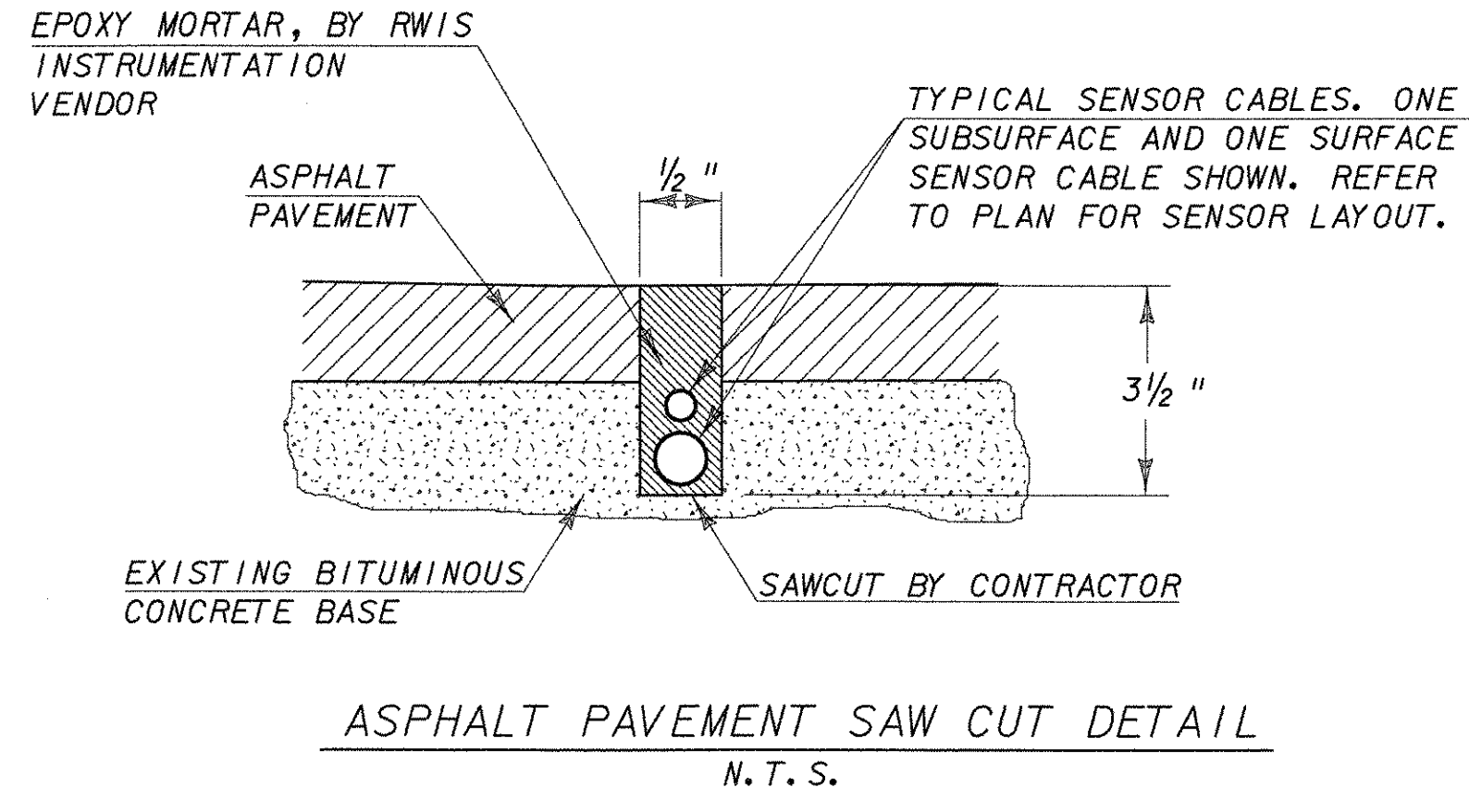
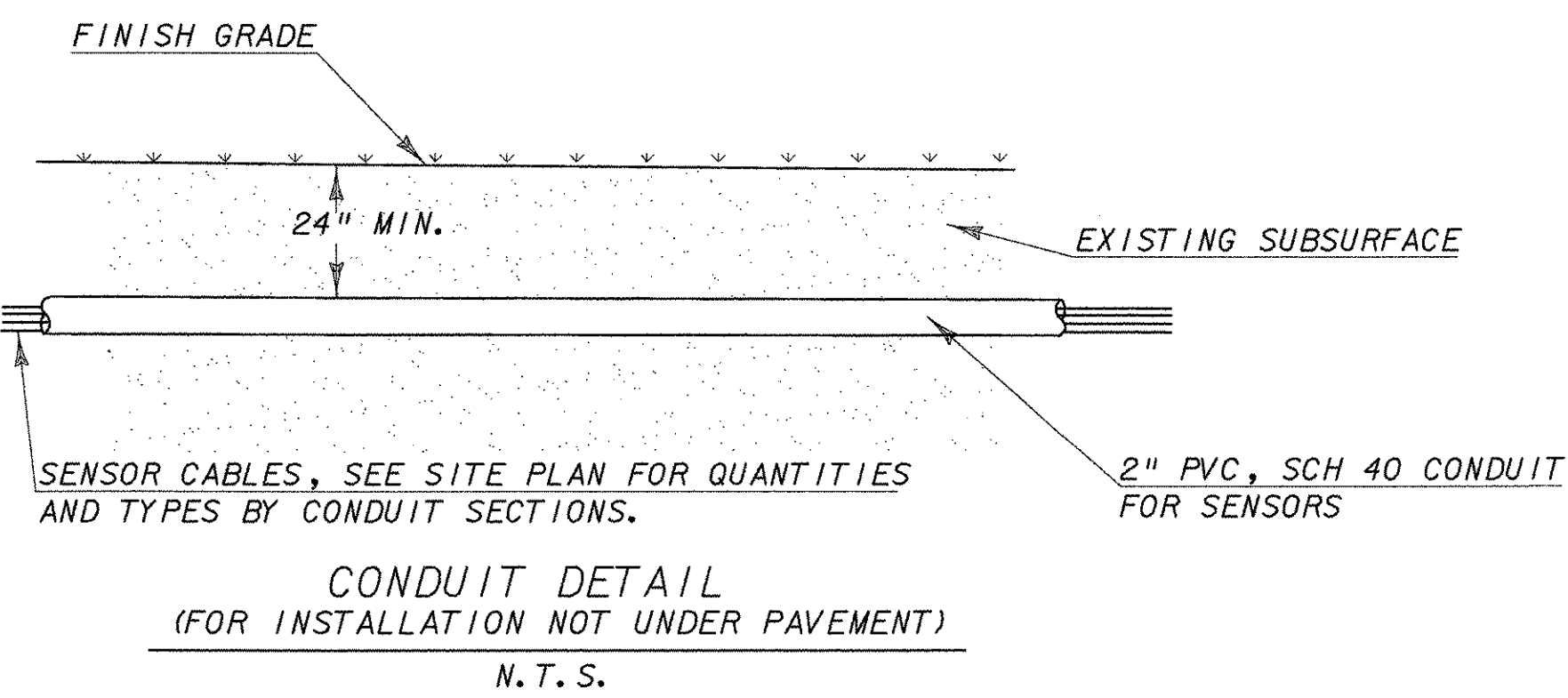
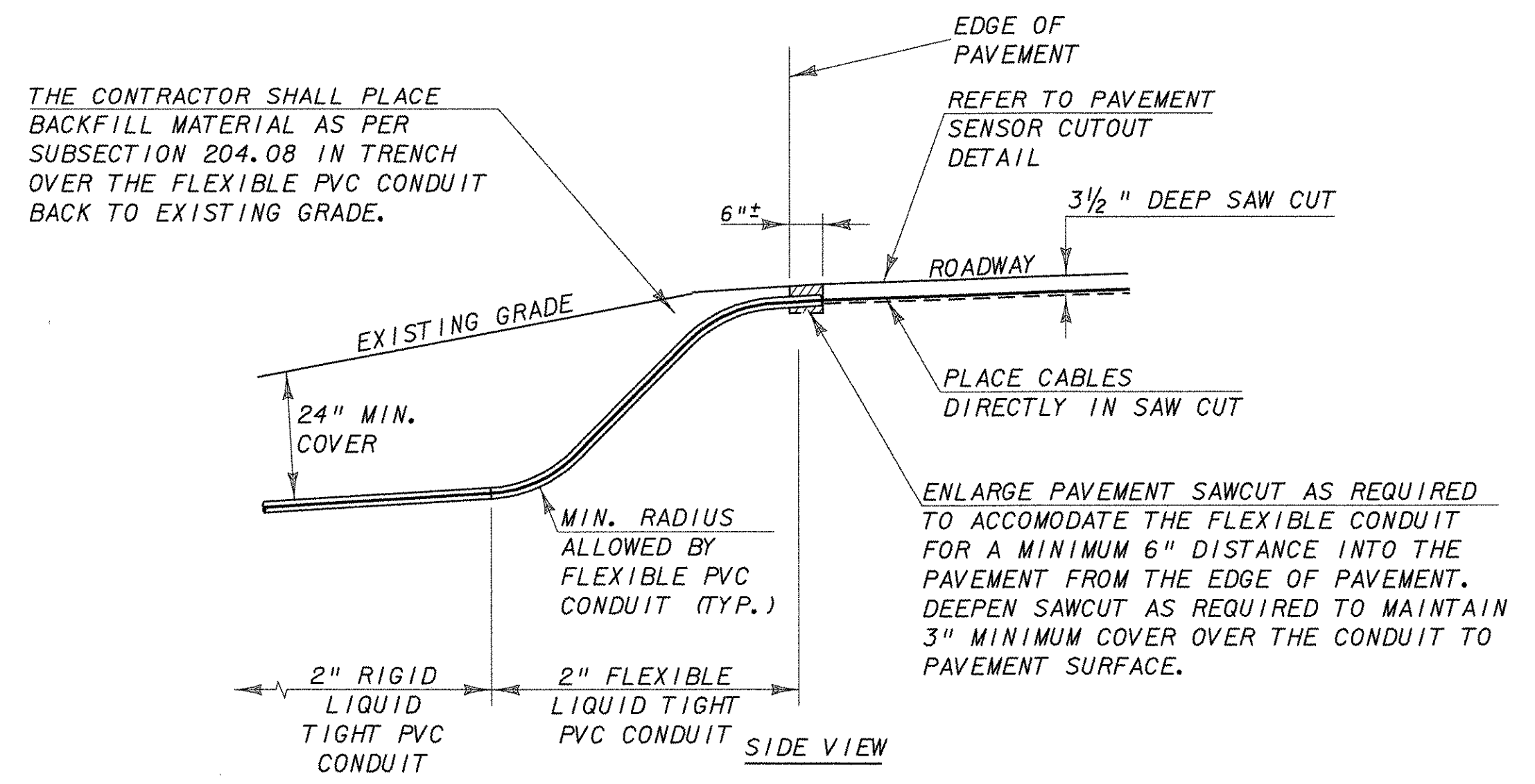
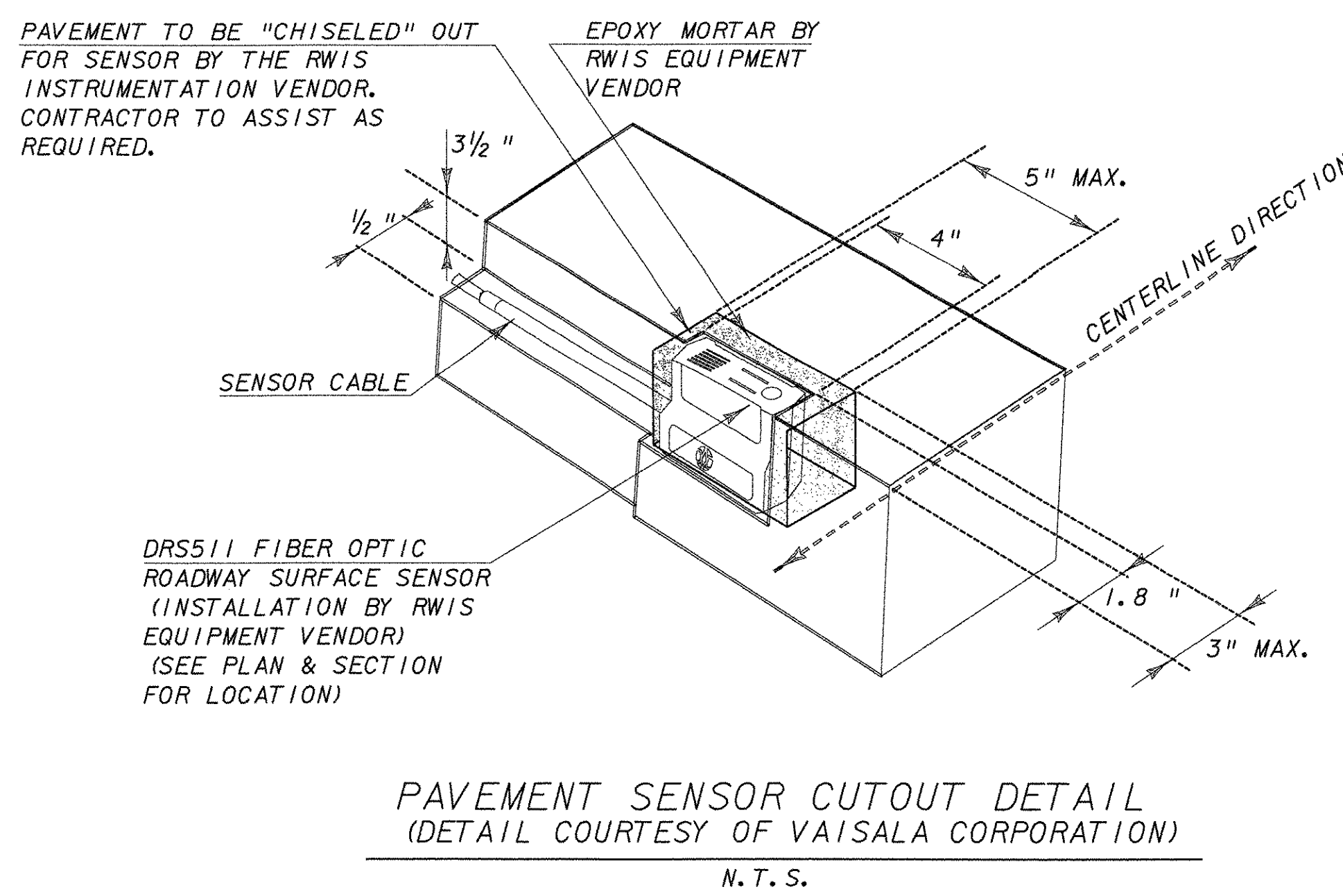
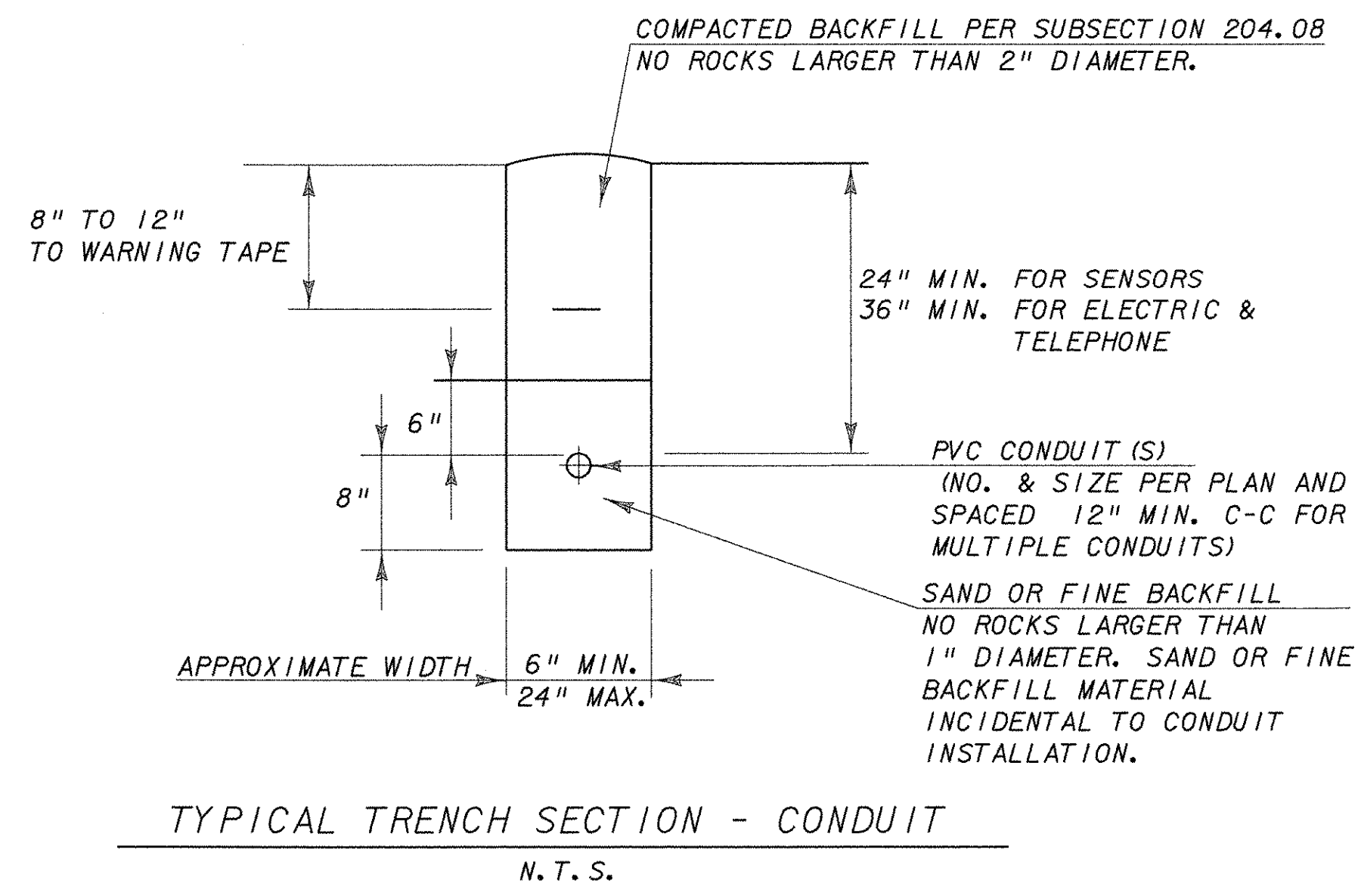


CONDUIT PENETRATION DETAIL FOUNDATION / PIER
N. T. S.



30' TOWER FIXTURES
N. T. S.

MENDON	
PROJECT:	FAIR HAVEN: RWIS MENDON: RWIS
FILE NAME:	010000ide+2.dgn
PROJECT LEADER:	R. CAMBIO
DESIGNED BY:	BMB
FOUNDATION DETAILS	
PLOT DATE:	24-AUG-2007
DRAWN BY:	MJF
CHECKED BY:	MDL
SHEET	II OF 12



- NOTE:
- ANY DETAILS FOR INSTALLATION OF THE SENSORS NOT SHOWN ON THIS DRAWING SHALL BE AS PER STANDARD DRAWING E-172.
 - CONTRACTOR TO BE RESPONSIBLE FOR SAWCUTTING FOR SENSOR PLACEMENT, AS WELL AS PROVIDING PULL STRING IN CONDUIT, CLEANING AND DRYING OF THE SAWCUT AND ASSISTANCE AS NECESSARY FOR PULLING OF SENSOR CABLES. PAVEMENT PREPARATION (I.E. "CHISELING"), RWIS SENSOR PLACEMENT, EPOXY MORTAR PLACEMENT, SENSOR CABLE PULLING AND CABLE CONNECTIONS AT THE CONTROLS TO BE PERFORMED BY THE RWIS INSTRUMENTATION VENDOR.

MENDON

PROJECT:	FAIR HAVEN: RWIS MENDON: RWIS
FILE NAME:	010001de+2.dgn
PROJECT LEADER:	D. GRAHAVOC
DESIGNED BY:	BMB
RWIS INSTALLATION DETAILS	
PLOT DATE:	10-AUG-2007
DRAWN BY:	MAL
CHECKED BY:	MDL
SHEET	12 OF 12