

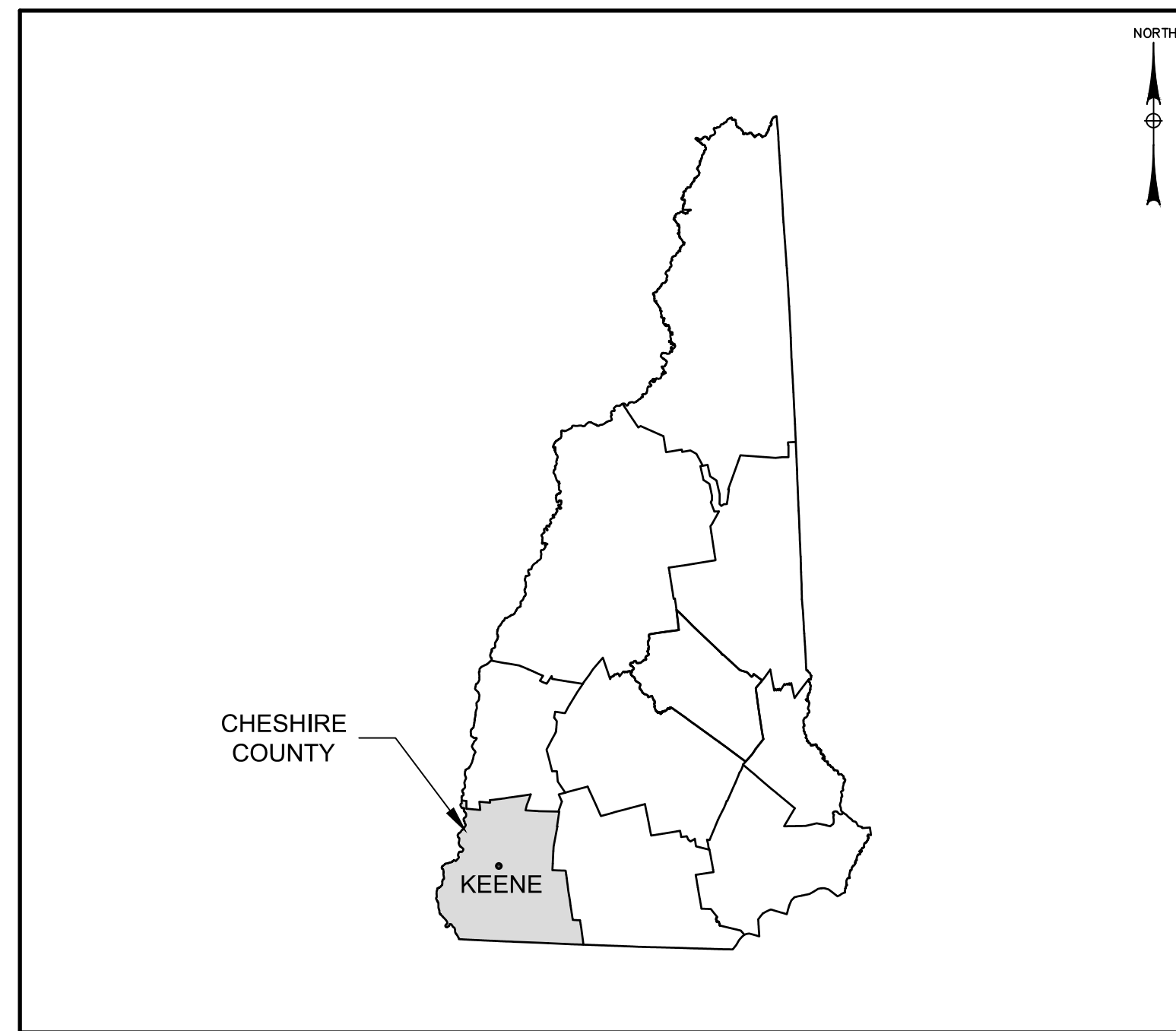
CITY OF KEENE WINCHESTER STREET RECONSTRUCTION

CONFORMED CONSTRUCTION PLANS MAY 2022

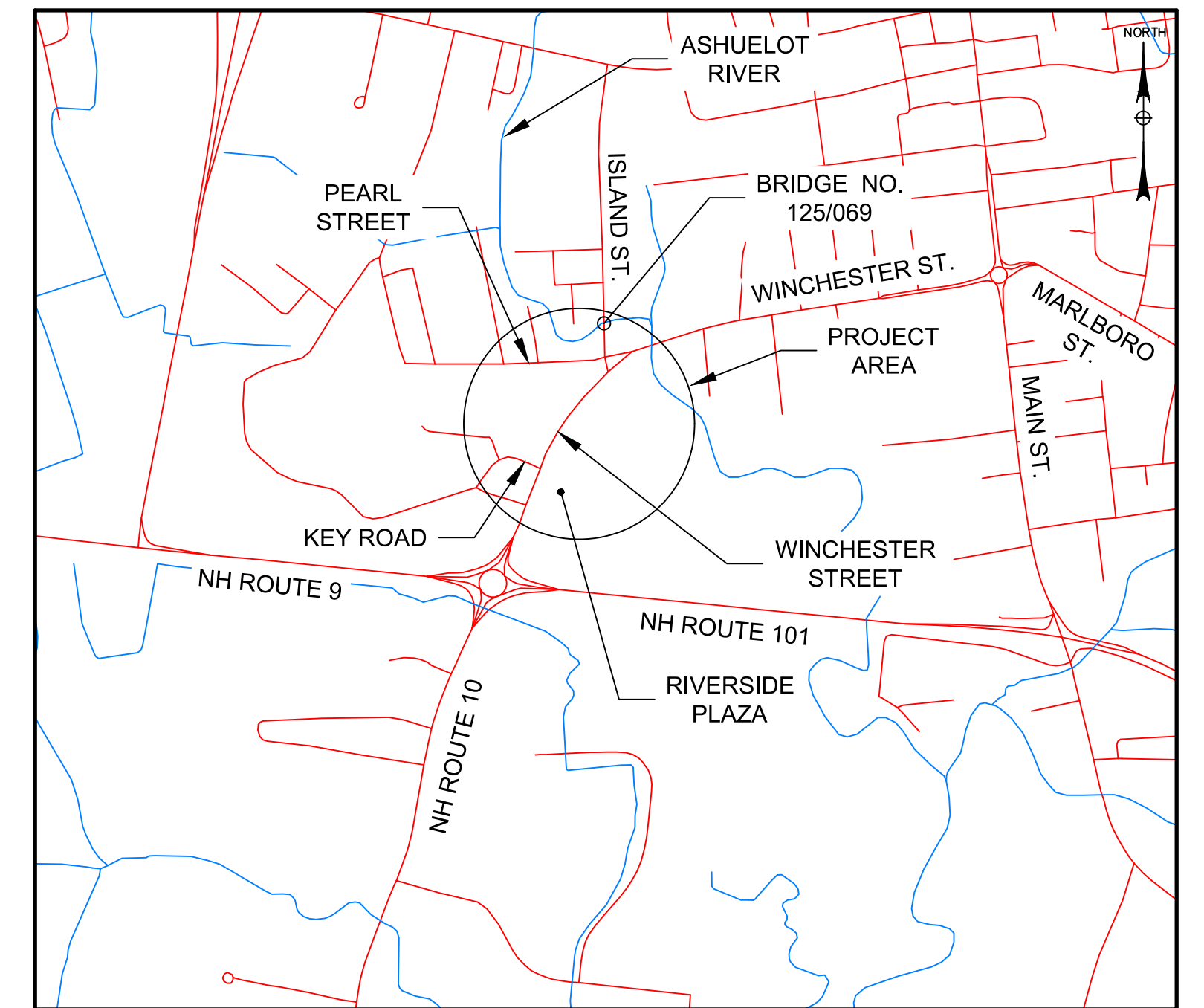
CONFORMED PLANS INCLUDE CHANGES VIA ADDENDA   AND . SEE SHEETS 2 AND SHEETS 70 - 73B FOR DETAILS

KEENE
CHESHIRE COUNTY
NEW HAMPSHIRE

DESIGN DATA	
WINCHESTER STREET	
AVERAGE DAILY TRAFFIC 2013	28,000
AVERAGE DAILY TRAFFIC 2033	34,000
PERCENT OF TRUCKS	2%
DESIGN SPEED	30 MPH
LENGTH OF PROJECT	0.33 MILES



NEW HAMPSHIRE
LOCATION MAP



KEENE, NH
VICINITY MAP

PREPARED FOR:



CITY OF KEENE
350 MARLBORO STREET
KEENE, NEW HAMPSHIRE
(603)352-6550
[HTTPS://CI.KEENE.NH.US](https://ci.keene.nh.us)

PREPARED BY:



53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

KEENE CONTRACT NUMBER: 01-22-03
NH DOT PROJECT NUMBER: 10309B
MCFARLAND JOHNSON PROJECT NUMBER: 18022.01



IT IS A VIOLATION OF THE LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

LIST

SHEET	SHEET TITLE	NUMBER
CV-01	COVER	1
IN-01	INDEX OF SHEETS, STANDARD SYMBOLS, AND GENERAL NOTES	2
TS-01 TO TS-04	TYPICAL SECTIONS	3-6
PD-01	PAVEMENT DESIGN PLAN	7
DT-01 TO DT-20	DETAILS	8-28
EX-01 TO EX-06	EXISTING CONDITIONS PLANS	29-34
GP-01 TO GP-06	GENERAL PLANS	35-40
PR-01 TO PR-07	PROFILES	41-47
PV-01 TO PV-06	PAVEMENT LAYOUT PLANS	48-53
MK-01 TO MK-08	SIGNING AND MARKING PLANS AND SIGN TEXT LAYOUT	54-61
UT-01 TO UT-06	UTILITY PLANS	62-67
GR-01 TO GR-02	GRADING PLANS	68-69
CS-01 TO CS-04	PHASING PLANS	70-73
CS-04A	TEMPORARY TRANSITION PLAN	73A
WF-01	WAYFINDING PLAN	73B
L100	ROUNDBOUT PLANTING PLAN	74
XS-01 TO XS-23	WINCHESTER STREET CROSS SECTIONS STA 100+00.00 TO STA 117+80.00	75-97
XS-24 TO XS-28	KEY ROAD CROSS SECTIONS STA 200+00.00 TO STA 203+30.00	98-102
XS-29 TO XS-32	RIVERSIDE PLAZA CROSS SECTIONS STA 300+00.00 TO STA 302+85.00	103-106
XS-33 TO XS-35	PEARL STREET CROSS SECTIONS STA 400+00.00 TO STA 402+00.00	107-109
XS-36 TO XS-42	ISLAND STREET CROSS SECTIONS STA 501+00.00 TO STA 504+25.00	110-116
BR-01 TO BR-27	BRIDGE SHEETS	117-143

GENERAL CONSTRUCTION NOTES:

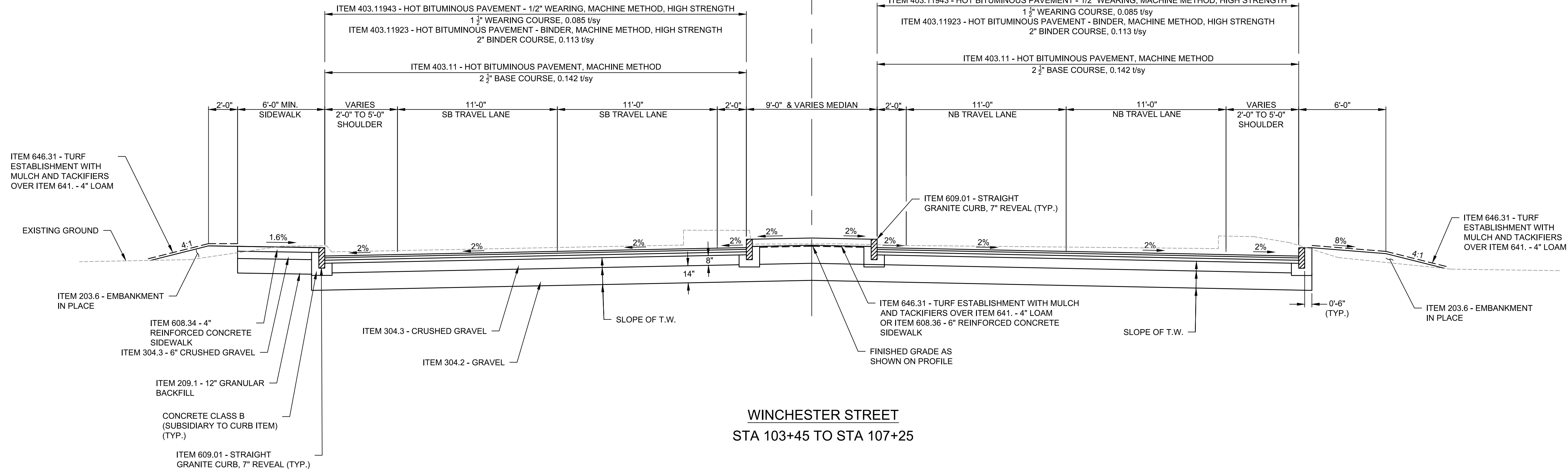
- ALL CONSTRUCTION MATERIALS AND METHODS SHALL CONFORM TO THE REQUIREMENTS IN THE LATEST EDITION OF THE FOLLOWING STANDARDS AND REGULATIONS (IF CONFLICTING REQUIREMENTS ARE FOUND, THEN THE MORE STRINGENT GOVERNS):
 - CITY OF KEENE STANDARDS AND DETAILS
 - NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (DATED 2016)
 - NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES (NHDES) ADMINISTRATIVE RULES AND STANDARDS
 - USDOT-FHWA'S "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD, LATEST EDITION)
 - ALL APPLICABLE INTERNATIONAL AND NATIONAL CODES.
- THE CONTRACTOR SHALL OBTAIN ALL APPLICABLE CONSTRUCTION PERMITS, PRIOR TO CONSTRUCTION, FROM NHDES, USEPA, UTILITY COMPANIES, AND OTHER REGULATORY AGENCIES. THE CONTRACTOR SHALL NOTIFY ALL AGENCIES PRIOR THE START OF CONSTRUCTION.
- THE CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION ACTIVITIES IN SUCH A MANNER AS TO CAUSE A MINIMUM OF INCONVENIENCE TO THE PUBLIC, AND MINIMIZE INTERFERENCE WITH NORMAL OPERATIONS OF THE ADJACENT PROPERTIES.
- THE CONTRACTOR SHALL COORDINATE AND COOPERATE WITH LOCAL AUTHORITIES, OTHER CONTRACTORS AND AGENCIES WORKING WITHIN THE PROJECT LIMITS IN ORDER TO MINIMIZE DISRUPTIONS.
- THE CONTRACTOR SHALL INSPECT THE SITE PRIOR TO CONSTRUCTION TO BE AWARE OF ALL FIELD CONDITIONS AND SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE APPROPRIATE AGENCIES. THE CONTRACTOR SHALL CONTACT "DIG SAFE" (1-888-DIG-SAFE or 1-888-344-7233) AT LEAST 3 WORKING DAYS (72 HOURS) PRIOR TO ANY CONSTRUCTION ACTIVITY FOR UTILITY MARKOUTS.
- THE INFORMATION SHOWN ON THE DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING HIS OWN DETERMINATIONS AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. DAMAGE TO EXISTING UTILITIES CAUSED BY THE CONTRACTOR'S OPERATIONS SHALL BE PROMPTLY REPAIRED BY THE CONTRACTOR WITH ALL ADDITIONAL COSTS BORNE BY THE CONTRACTOR, AND TO THE SATISFACTION OF THE ENGINEER.
- THE SUBSURFACE INFORMATION, AS PROVIDED, WAS OBTAINED FOR DESIGN PURPOSES AND MAY NOT BE A COMPLETE REPRESENTATION OF ACTUAL CONDITIONS FOR THE PROJECT CONSTRUCTION. RISKS RESULTING FROM USE OR INTERPRETATION OF THE INFORMATION RELEVANT TO UNDERGROUND UTILITIES AND SOIL ELEVATIONS SHALL BE BORNE BY THE CONTRACTOR.
- THE CONTRACTOR SHALL PERFORM ALL WORK WITHIN THE EXISTING RIGHT-OF-WAY, UNLESS OTHERWISE SHOWN ON THE PLANS OR AS ORDERED BY THE ENGINEER.
- REMOVAL OF EXISTING CONCRETE PAVEMENT SHALL BE PAID UNDER ITEM 203.2 - ROCK EXCAVATION.
- THE CONTRACTOR SHALL PROTECT ALL TRENCHES OR EXCAVATIONS AGAINST CAVING IN BY SUITABLE SHORING, CAGES/BOXES, OR PROPER SLOPING AS DESCRIBED IN ALL APPLICABLE OSHA STANDARDS. ALL SHORING DEEMED TO BE NECESSARY SHALL BE DESIGNED AND SEALED BY A REGISTERED ENGINEER AND SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL.
- THE CONTRACTOR SHALL PROVIDE FLAGGERS, WARNING SIGNS, AND BARRICADES IN COMPLIANCE WITH THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) ISSUED BY THE UNITED STATES DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION, ISSUE OF 2009 EDITION WITH REVISIONS OR ANY LATER REVISED EDITION, AND WILL FOLLOW ALL OF THE REQUIREMENTS OF NHDOT SPECIFICATION 619 - MAINTENANCE OF TRAFFIC.
- ALL SIGNS AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS" AND THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) LATEST EDITION WITH REVISIONS.
- THE CONTRACTOR SHALL MAINTAIN TRAFFIC AND PROTECT THE PUBLIC FROM DAMAGE TO PERSONS AND PROPERTY WITHIN THE CONSTRUCTION LIMITS FOR THE DURATION OF THE CONTRACT.
- BEFORE ANY REMOVALS, THE CONTRACTOR SHALL ENSURE ALL EXISTING ADJACENT COMPONENTS ARE ADEQUATELY SHORED. IF ANY UNFORESEEN CONDITIONS ARE ENCOUNTERED WHICH REQUIRE DEVIATION FROM THE CONTRACT DRAWINGS AND SPECIFICATIONS, THE CONTRACTOR SHALL CONTACT THE ENGINEER.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO REPAIR TO ORIGINAL CONDITION, ANY AND ALL DAMAGE TO BUILDINGS, PAVEMENT AREAS, EQUIPMENT AND FURNISHINGS CAUSED DURING PERFORMANCE OF WORK COVERED BY THIS CONTRACT. PROPERTY IRONS, SIGNS, MAIL BOXES, OR FENCES REMOVED OR DESTROYED BY THE CONTRACTOR DURING CONSTRUCTION SHALL BE REPLACED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.
- ALL EXCAVATED SOIL DEEMED UNSUITABLE FOR RE-USE ON SITE SHALL BECOME THE PROPERTY OF THE CONTRACTOR. THE CONTRACTOR SHALL LEGALLY DISPOSE OF MATERIAL OFF SITE. EXCAVATED MATERIALS SHALL BE GRADED AND COMPACTED IN ACCORDANCE WITH THE SPECIFICATIONS AND AS DIRECTED BY THE ENGINEER.
- ALL WASTE MATERIALS, DEBRIS, AND RUBBISH SHALL BE HAULED AND DISPOSED OF BY THE CONTRACTOR AT AN OFF-SITE LOCATION. PRIOR TO DISPOSAL ON ANY OFF-SITE AREAS, A LETTER ALLOWING SUCH DISPOSAL SHALL BE OBTAINED FROM THE PROPERTY OWNER AND THE LOCATION SHALL BE APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS FOR DISPOSAL AREAS.

- THE CONTRACTOR SHALL KEEP ALL SURFACES UTILIZED BY VEHICLES CONTINUOUSLY FREE OF DEBRIS WHERE REQUIRED. SURFACES SHALL BE WATERED TO PREVENT THE BLOWING OF DUST. STREETS SHALL BE SWEEPED WEEKLY OR AS REQUIRED BY THE CITY OR ENGINEER. COSTS SHALL BE INCLUDED IN ITEM 619.1 - MAINTENANCE OF TRAFFIC.
- THE CONTRACTOR SHALL KEEP THE PROJECT AREA CLEAN AND FREE OF DUST AND DEBRIS RESULTING FROM HIS OWN OPERATIONS. DAILY CLEANUP THROUGHOUT THE JOB SITE SHALL BE NECESSARY AS THE CONTRACTOR PROGRESSES WITH HIS WORK, BUT EXTRA PRECAUTIONS IN CLEANUP SHALL BE MADE PRIOR TO WEEKENDS AND HOLIDAYS OR STOPPAGE OF WORK.
- AT COMPLETION OF WORK, THE CONTRACTOR SHALL REMOVE ALL WASTE MATERIALS, TOOLS, EQUIPMENT, MACHINERY, AND SURPLUS MATERIALS AND CLEAN ALL EXPOSED SURFACES. PROPERTY AND ALL RIGHT-OF-WAYS SHALL BE LEFT IN A CONDITION EQUAL TO THAT AT THE BEGINNING OF WORK OR AS SPECIFIED IN THE PLANS.
- PRIOR TO BEGINNING ANY WORK ON A UTILITY LINE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING AND RENDERING THE REQUIRED NOTICE (i.e. AT LEAST 72 HOURS) TO ALL PUBLIC/PRIVATE UTILITIES (i.e. WATER, SEWER, ELECTRIC, DATA/TELEPHONE, ETC.), AND TO ALL OTHER LOCAL, STATE OR FEDERAL AGENCIES, AS WELL AS TO THE OWNER OF MUNICIPAL AND PRIVATE UTILITIES. NO WORK SHALL COMMENCE UNTIL THE PUBLIC/PRIVATE UTILITIES PROVIDE PROPER AUTHORIZATION.
- ACTIVE WATER VALVES AND HYDRANTS WILL BE OPENED/CLOSED BY ONLY MUNICIPAL UTILITY PERSONNEL, UNLESS AUTHORIZED BY THE MUNICIPAL UTILITY IN WRITING. THE CONTRACTOR SHALL CONTACT THE CITY OF KEENE WATER AND SEWER DIVISION WITH THE REQUIRED MINIMUM NOTICE (I.E. AT LEAST 48 HOURS) PRIOR TO NEEDING A WATER VALVE OPENING/CLOSURE.
- THE ENGINEER SHALL BE NOTIFIED PRIOR TO CONSTRUCTION IF THERE ARE ANY DISCREPANCIES IN PLANS OR EXISTING DATA. AFTER SUCH NOTIFICATION, WORK SHALL NOT PROCEED WITHOUT WRITTEN PERMISSION FROM THE ENGINEER.
- THE CONTRACTOR SHALL COORDINATE ALL UTILITY CONSTRUCTION WITH OTHER UTILITY COMPANIES AS REQUIRED TO ALLOW FOR A COMPLETE INSTALLATION.
- REMOVE TOPSOIL FOR ITS TOTAL DEPTH WITHIN THE LIMITS OF THE SLOPE LINES. UNLESS OTHERWISE DIRECTED, STOCKPILE TOPSOIL AND USE IT ON THE PROJECT AS NEEDED UNDER SECTION 641 - LOAM.
- NO EXISTING MONUMENTS, BOUNDS, OR BENCHMARKS SHALL BE DISTURBED WITHOUT FIRST MAKING PROVISIONS FOR RELOCATION. ANY BOUNDS THAT ARE REQUIRED TO BE RESET SHALL BE SUBSIDIARY TO THE WORK.
- EXISTING CONDITIONS SURVEY PERFORMED IN AUGUST 2018 BY GM2 ASSOCIATES. HORIZONTAL DATUM: NAD83(2011) VERTICAL DATUM: NAVD88.
- EXISTING GRANITE CURB REMOVED AND NOT RESET SHALL BE SALVAGED TO THE CITY. DELIVERY OF THE SALVAGED CURB TO CITY IS SUBSIDIARY TO THE PROJECT.
- ANY CLEARING OF BRUSH SHALL BE CONSIDERED SUBSIDIARY TO THE WORK.
- CORING INTO EXISTING DRAINAGE STRUCTURES SHALL BE SUBSIDIARY TO THE DRAINAGE PIPE.
- REMOVAL OF EXISTING DRAINAGE PIPE AND STRUCTURES SHALL BE SUBSIDIARY TO THE INSTALLATION OF THE NEW DRAINAGE PIPE AND STRUCTURES.
- COMMON STRUCTURE EXCAVATION FOR PROPOSED DRAINAGE PIPE AND STRUCTURES SHALL BE SUBSIDIARY TO THE WORK.
- THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE UTILITY COMPANIES TO HOLD ANY UTILITY POLES DURING CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE FOR THE LAYOUT OF THE PROPOSED WORK. THE OWNER WILL SUPPLY THE LOCATIONS OF CONTROL POINTS USED FOR THE EXISTING CONDITIONS SURVEY.
- THE CONTRACTOR WILL NOT BE PERMITTED TO WORK ON WEDNESDAY, AUGUST 26 OR SUNDAY, AUGUST 30 WHICH ARE PLANNED MOVE-IN DAYS FOR KEENE STATE COLLEGE.
- UNLESS SPECIFICALLY APPROVED IN ADVANCE BY THE CITY OF KEENE, THE CONTRACTOR WILL NOT BE PERMITTED TO WORK ON SATURDAYS OR SUNDAYS.
- THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PRIVATE PROPERTIES AT ALL TIMES. IF A PROPERTY OWNER HAS A SINGLE DRIVEWAY, CONSTRUCTION MUST PROCEED IN HALF WIDTHS TO ALLOW CONTINUOUS ACCESS UNLESS OTHERWISE APPROVED BY THE ENGINEER AND PROPERTY OWNER.
- THE CONTRACTOR MUST SUBMIT AN EXCAVATION PERMIT FOR ALL WORK WITHIN THE CITY RIGHT-OF-WAY. THIS PERMIT CAN BE SUBMITTED WITH NO FEE. APPROVAL OF THE EXCAVATION PERMIT INVOLVES APPROVAL OF THE TRAFFIC CONTROL PLAN AND COMPLETION OF THE DIG SAFE PROCESS. SEE https://ci.keene.nh.us/sites/default/files/2017-04/PERMIT%20-%20Excavation_0.pdf FOR THE PERMIT FORM.

SYMBOL	EXISTING
BUILDING	
CONTOUR (MAJOR)	
CONTOUR (MINOR)	
CURB	
FENCE	
GAS UTILITY	
OVERHEAD UTILITIES	
PAVEMENT MARKING / STRIPING	
RAILROAD	
RIGHT-OF-WAY	
ROADWAY CENTER LINE	
SEWER UTILITY	
STORM DRAIN	
TREE LINE	
UNDERGROUND TELEPHONE	
WALL	
POND, STREAM, WETLAND	
WATER UTILITY	
BORING	
BOUND	
CAP	
CATCH BASIN/DROP INLET	
DRILL HOLE	
GAS VALVE	
GUY WIRE	
HYDRANT	
IRON PIN	
LAMP HOLE	
STREET LIGHT	
PLUG	
REDUCER	
SANITARY SEWER MANHOLE	
SOLID SLEEVE	
STORM DRAIN MANHOLE	
TEE	
TELECOM UTILITY MANHOLE	
TEST PIT	
TRAFFIC SIGN	
UTILITY POLE	
WATER MAIN VALVES (BALL, GATE, WHEEL, OTHER)	
WELL	
DECIDUOUS TREE	
CONIFEROUS TREE	
SHRUB	
STUMP	
CROSSWALK	

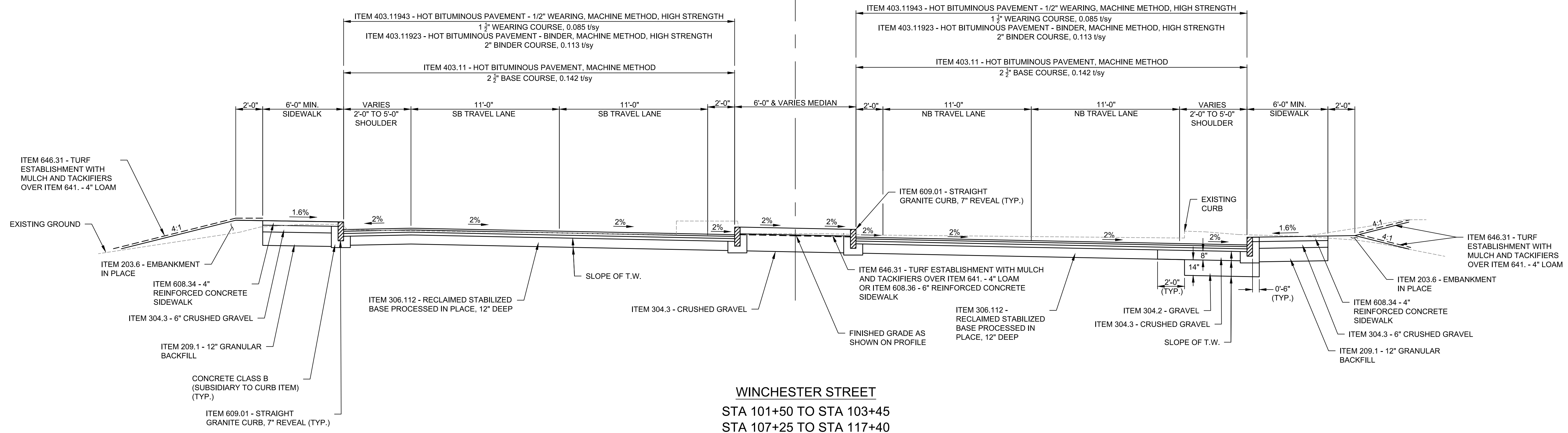
CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
INDEX OF SHEETS, STANDARD SYMBOLS, AND GENERAL NOTES			
REV	DATE	DESCRIPTION	BY
McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301			
SCALE:	DESIGN: BEP	IN-01 2 OF 143	
DRAWN: MJF	PROJECT: 18022.01		
CHECKED: EWM	DATE: SEPTEMBER 2021		

CONSTRUCTION C & GRADE LINE



WINCHESTER STREET
STA 103+45 TO STA 107+25

CONSTRUCTION C & GRADE LINE



WINCHESTER STREET
STA 101+50 TO STA 103+45
STA 107+25 TO STA 117+40

- NOTE:
- REFER TO PAVEMENT DESIGN PLAN FOR AREAS OF COLD PLANING AND OVERLAY, FULL DEPTH RECONSTRUCTION, AND RECLAIMED STABILIZED BASE.
 - PER SECTION 306, RECLAIMED MATERIAL MAY BE USED IN LIEU OF ITEM 304.3 - CRUSHED GRAVEL AND ITEM 304.2 - GRAVEL, EXCEPT WHEN UNDER CONCRETE.
 - REMOVAL OF EXCESS RECLAIM MATERIAL SHALL BE SUBSIDIARY TO ITEM 306.112 - RECLAIMED STABILIZED BASE PROCESSED IN PLACE, 12" DEEP.
 - A MINIMUM OF 6" OF COMPACTED RECLAIMED MATERIAL MUST BE PRESENT FOR THE USE OF ITEM 306.112 - RECLAIMED STABILIZED BASE PROCESSED IN PLACE, 12" DEEP.
 - REFER TO DETAIL SHEETS FOR GRANITE CURB DETAILS.

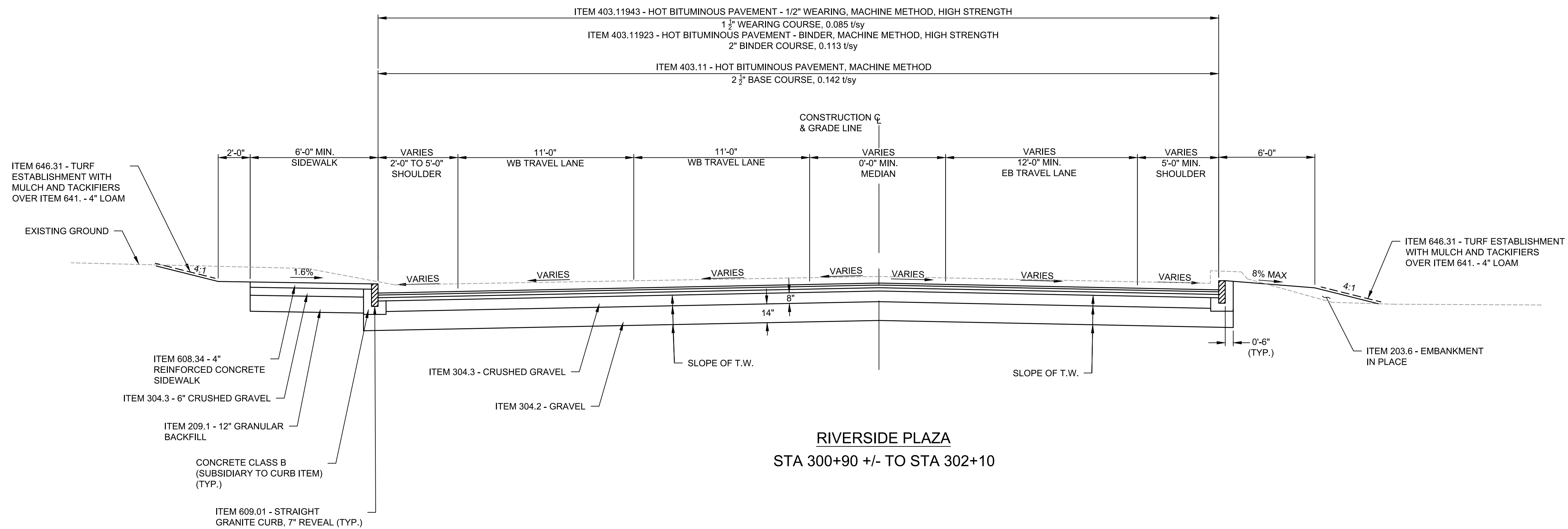
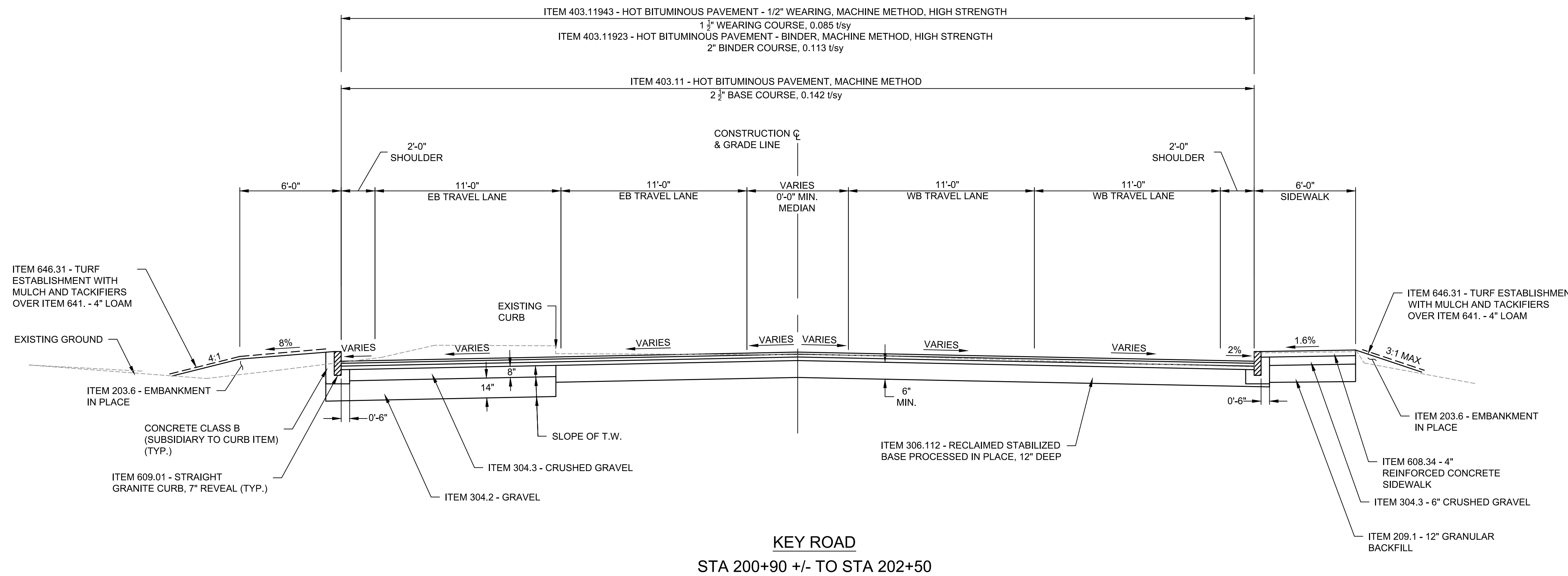
REV	DATE	DESCRIPTION	BY

McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

**CITY OF KEENE
KEENE, NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION
TYPICAL SECTIONS
(SHEET 1 OF 4)**

SCALE: 1" = 4'	DESIGN: BEP	TS-01 3 OF 143
DRAWN: MJF	PROJECT: 18022.01	
CHECKED: EWM	DATE: SEPTEMBER 2021	

M:\18022.01 KEENE WINCHESTER FINAL\DRAWINGS\SHEET FILES\18022.01-1-TSEC.DWG



NOTE:

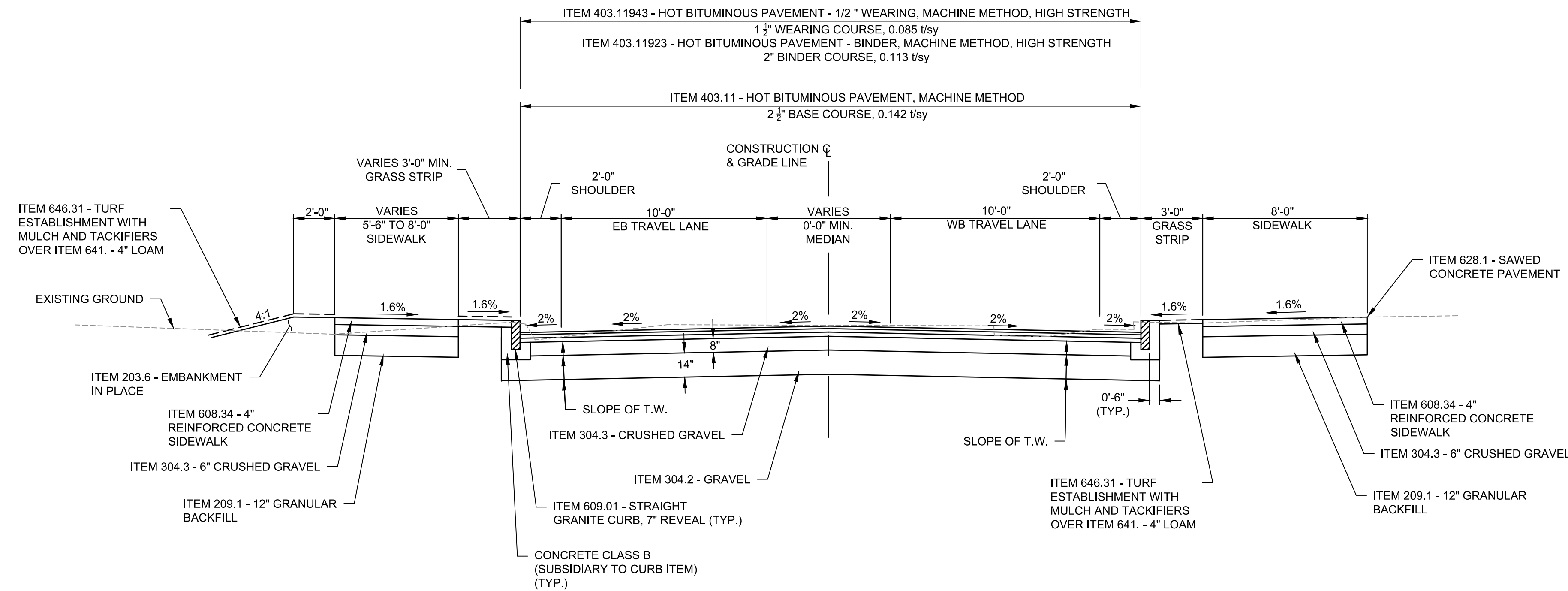
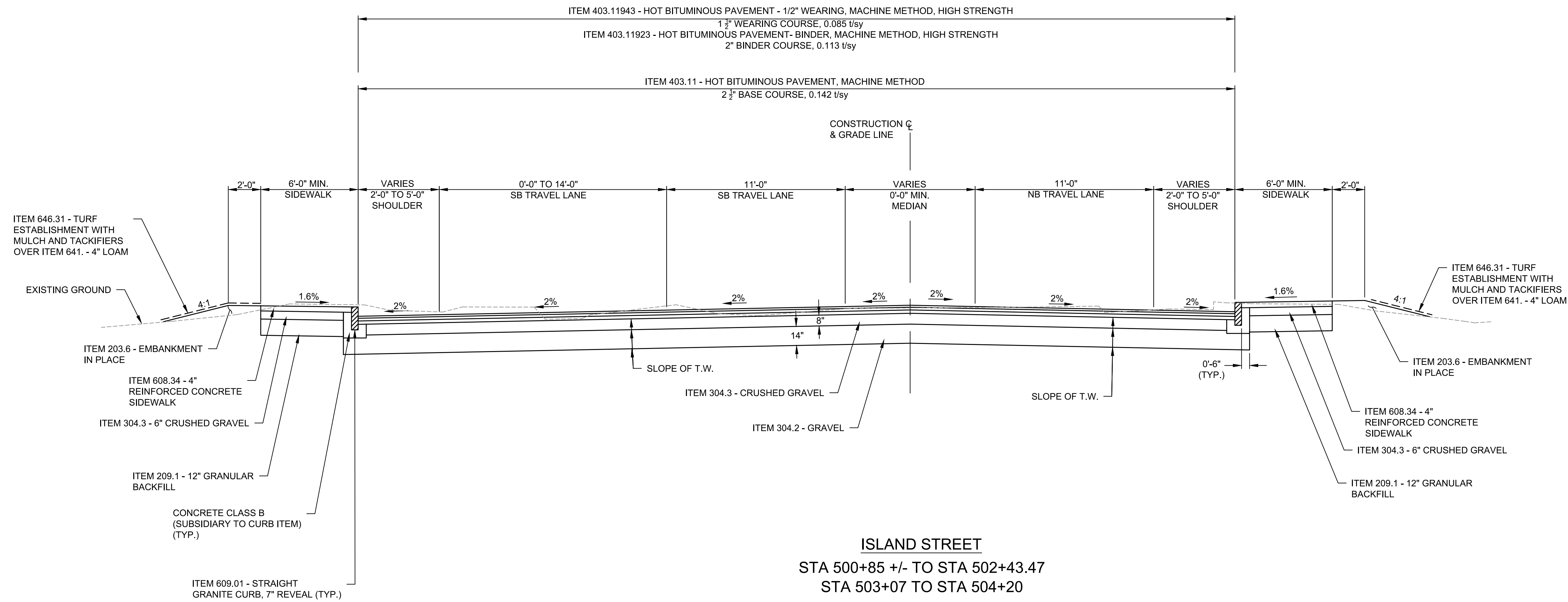
1. REFER TO PAVEMENT DESIGN PLAN FOR AREAS OF COLD PLANING AND OVERLAY, FULL DEPTH RECONSTRUCTION, AND RECLAIMED STABILIZED BASE.
2. PER SECTION 306, RECLAIMED MATERIAL MAY BE USED IN LIEU OF ITEM 304.3 - CRUSHED GRAVEL AND ITEM 304.2 - GRAVEL, EXCEPT WHEN UNDER CONCRETE.
3. REMOVAL OF EXCESS RECLAIM MATERIAL SHALL BE SUBSIDIARY TO ITEM 306.112 - RECLAIMED STABILIZED BASE PROCESSED IN PLACE, 12" DEEP.
4. SEE ISLAND DETAILS ON SHEET DT-02 AND ISLAND LAYOUT ON THE PAVEMENT LAYOUT PLANS FOR ISLAND INFORMATION ON KEY ROAD AND RIVERSIDE PLAZA.
5. A MINIMUM OF 6" OF COMPACTED RECLAIMED MATERIAL MUST BE PRESENT FOR THE USE OF ITEM 306.112 - RECLAIMED STABILIZED BASE PROCESS IN PLACE, 12" DEEP.

REV	DATE	DESCRIPTION	BY

McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

CITY OF KEENE
KEENE, NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION
TYPICAL SECTIONS
(SHEET 2 OF 4)

SCALE: 1" = 4'	DESIGN: BEP	TS-02
DRAWN: MJF	PROJECT: 18022.01	
CHECKED: EWM	DATE: SEPTEMBER 2021	



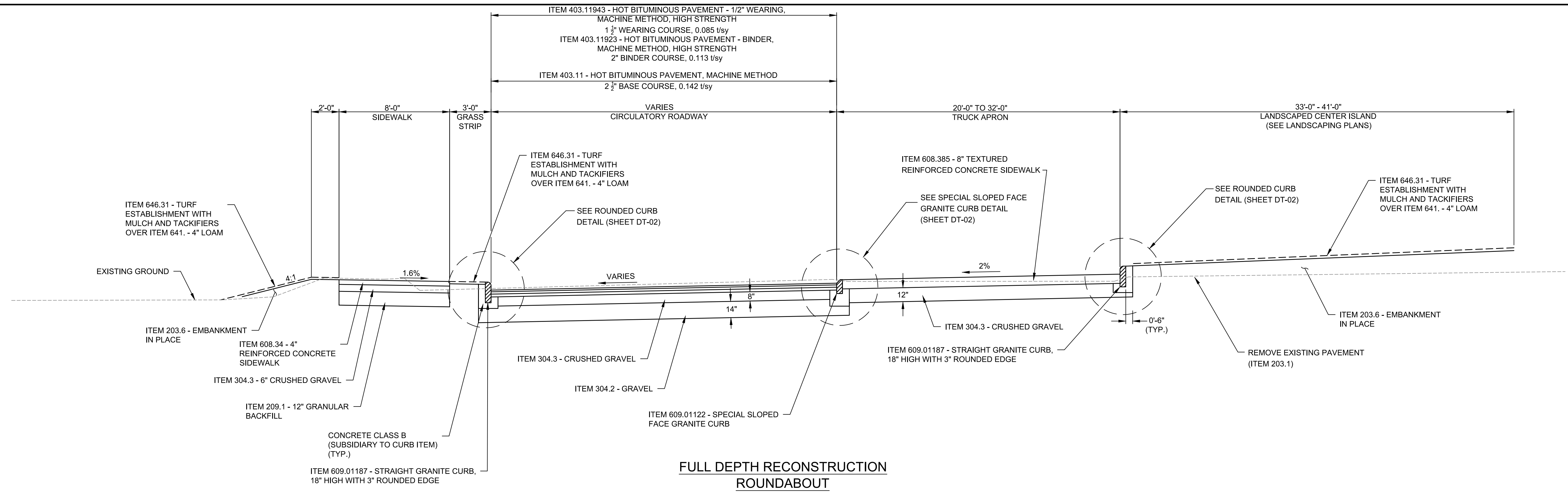
- NOTE:**
- REFER TO PAVEMENT DESIGN PLAN FOR AREAS OF COLD PLANING AND OVERLAY, FULL DEPTH RECONSTRUCTION, AND RECLAIMED STABILIZED BASE.
 - PER SECTION 306, RECLAIMED MATERIAL MAY BE USED IN LIEU OF ITEM 304.3 - CRUSHED GRAVEL AND ITEM 304.2 - GRAVEL, EXCEPT WHEN UNDER CONCRETE.
 - REMOVAL OF EXCESS RECLAIM MATERIAL SHALL BE SUBSIDIARY TO ITEM 306.112 - RECLAIMED STABILIZED BASE PROCESSED IN PLACE, 12" DEEP.
 - SEE ISLAND DETAILS ON SHEET DT-02 AND ISLAND LAYOUT ON THE PAVEMENT LAYOUT PLANS FOR ISLAND INFORMATION ON ISLAND PEARL STREET.
 - SEE DETAILS ON SHEET DT-02 FOR THE TRUCK APRON DETAILS USED FOR THE ISLAND ON PEARL STREET.

REV	DATE	DESCRIPTION	BY

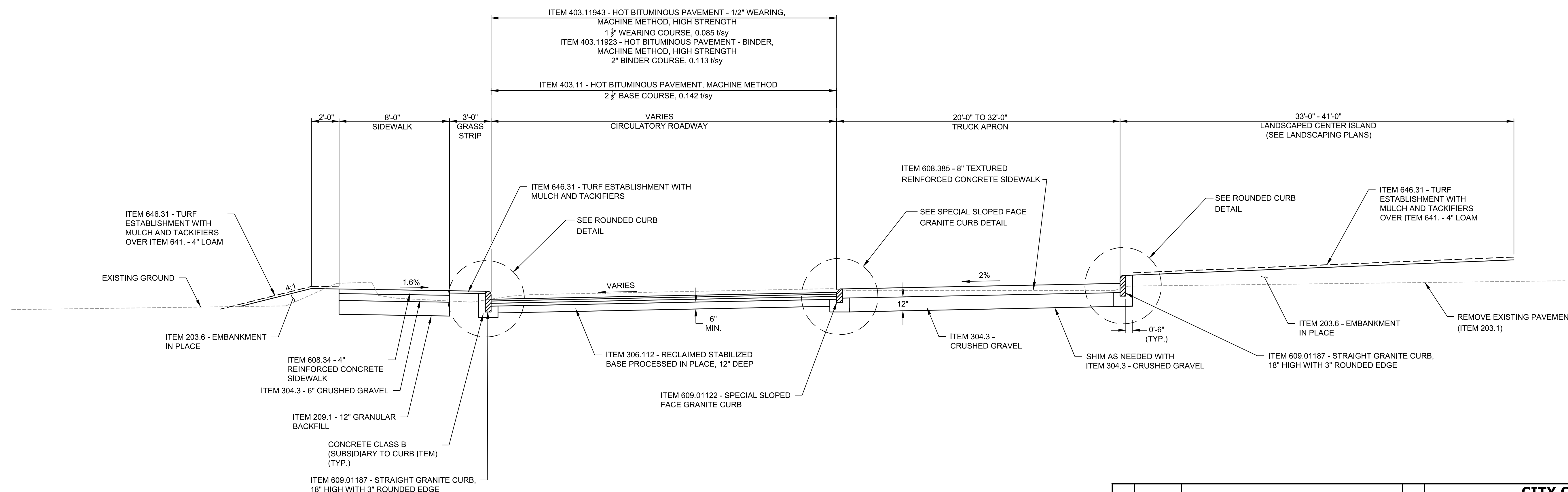
McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

CITY OF KEENE
KEENE, NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION
TYPICAL SECTIONS
(SHEET 3 OF 4)

SCALE: 1" = 4'	DESIGN: BEP	TS-03 5 OF 143
DRAWN: MJF	PROJECT: 18022.01	
CHECKED: EWM	DATE: SEPTEMBER 2021	



**FULL DEPTH RECONSTRUCTION
ROUNDBOUT**



**RECLAIMED STABILIZED BASE
ROUNDBOUT**

- NOTE:
- REFER TO PAVEMENT DESIGN PLAN FOR AREAS OF COLD PLANING AND OVERLAY, FULL DEPTH RECONSTRUCTION, AND RECLAIMED STABILIZED BASE.
 - PER SECTION 306, RECLAIMED MATERIAL MAY BE USED IN LIEU OF ITEM 304.3 - CRUSHED GRAVEL AND ITEM 304.2 - GRAVEL, EXCEPT WHEN UNDER CONCRETE.
 - REMOVAL OF EXCESS RECLAIM MATERIAL SHALL BE SUBSIDIARY TO ITEM 306.112 - RECLAIMED STABILIZED BASE PROCESSED IN PLACE, 12" DEEP.
 - A MINIMUM OF 6" OF COMPACTED RECLAIMED MATERIAL MUST BE PRESENT FOR THE USE OF ITEM 306.112 - RECLAIMED STABILIZED BASE PROCESS IN PLACE, 12" DEEP.

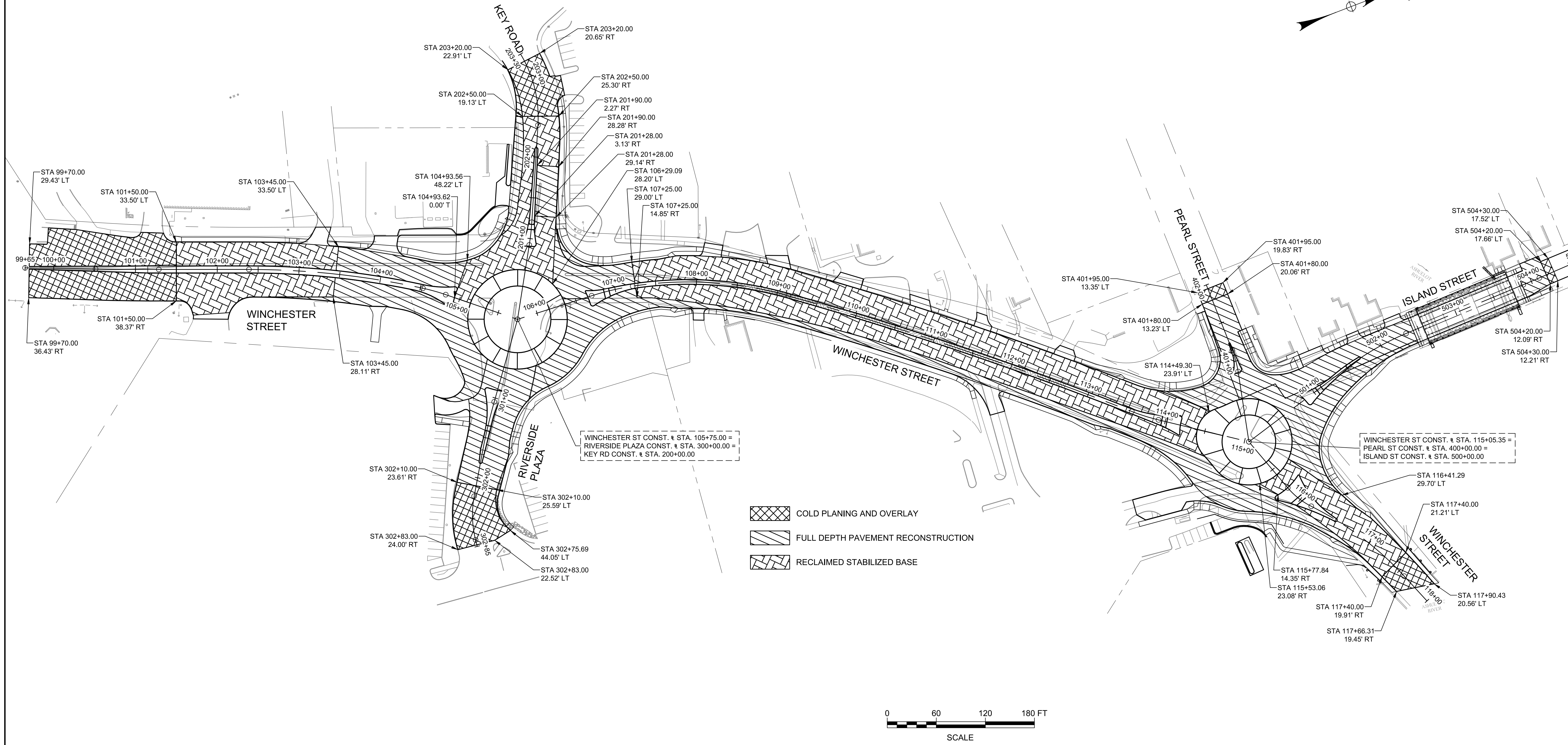
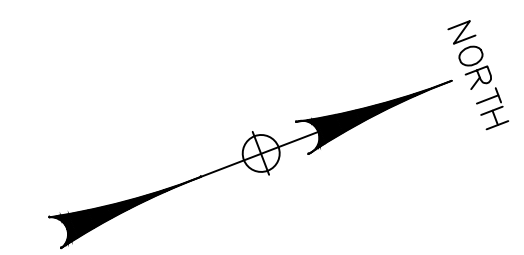
REV	DATE	DESCRIPTION	BY

McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

**CITY OF KEENE
KEENE, NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION
TYPICAL SECTIONS
(SHEET 4 OF 4)**

SCALE: 1" = 4'	DESIGN: BEP	TS-04 6 OF 143
DRAWN: MJF	PROJECT: 18022.01	
CHECKED: EWM	DATE: SEPTEMBER 2021	

M:\18022.01 KEENE WINCHESTER FINAL\DRAWINGS\SHEET FILES\18022.01-TSEC.DWG




WINCHESTER ST CONST. & STA. 105+75.00 =
RIVERSIDE PLAZA CONST. & STA. 300+00.00 =
KEY RD CONST. & STA. 200+00.00

WINCHESTER ST CONST. & STA. 115+05.35 =
PEARL ST CONST. & STA. 400+00.00 =
ISLAND ST CONST. & STA. 500+00.00

- NOTE**
1. THE AREAS SHOWN ABOVE ARE PROVIDED AS A GUIDE. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE THE PROPER BASE MATERIAL AND DEPTH ARE PROVIDED.
 2. A MINIMUM OF 6" OF COMPACTED RECLAIMED MATERIAL MUST BE PRESENT FOR THE USE OF ITEM 306.112 - RECLAIMED STABILIZED BASE PROCESS IN PLACE, 12" DEEP.

REV	DATE	DESCRIPTION	BY



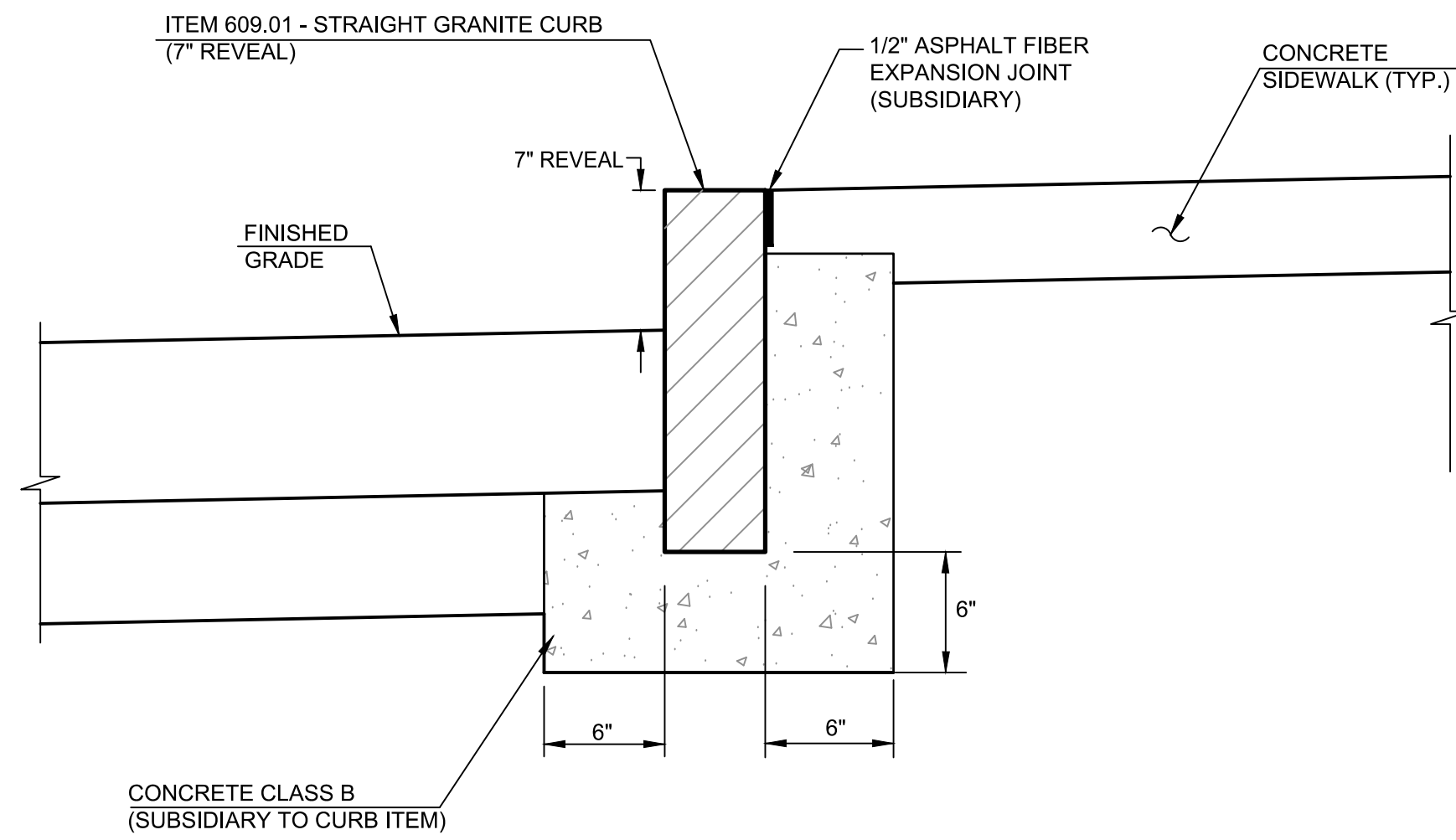
McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

**CITY OF KEENE
KEENE, NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION
PAVEMENT DESIGN
PLAN**

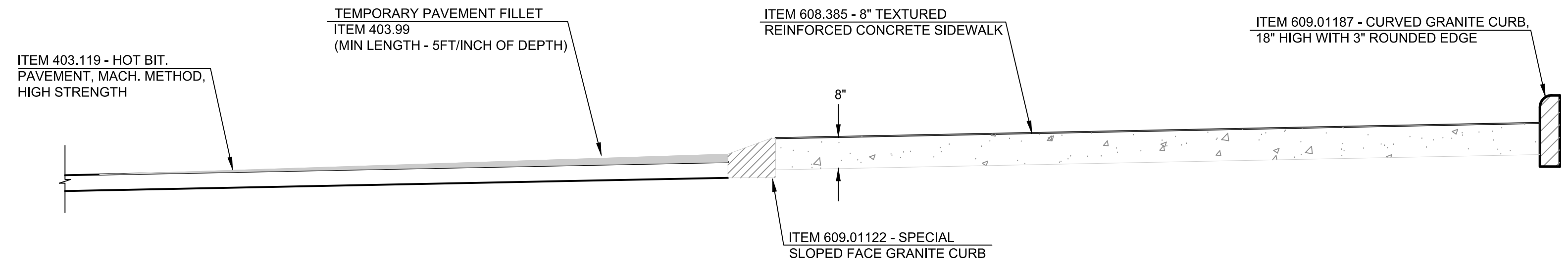
PD-01
7 OF 143

SCALE: 1"=60'	DESIGN: BEP
DRAWN: MJF	PROJECT: 18022.01
CHECKED: EWM	DATE: SEPTEMBER 2021

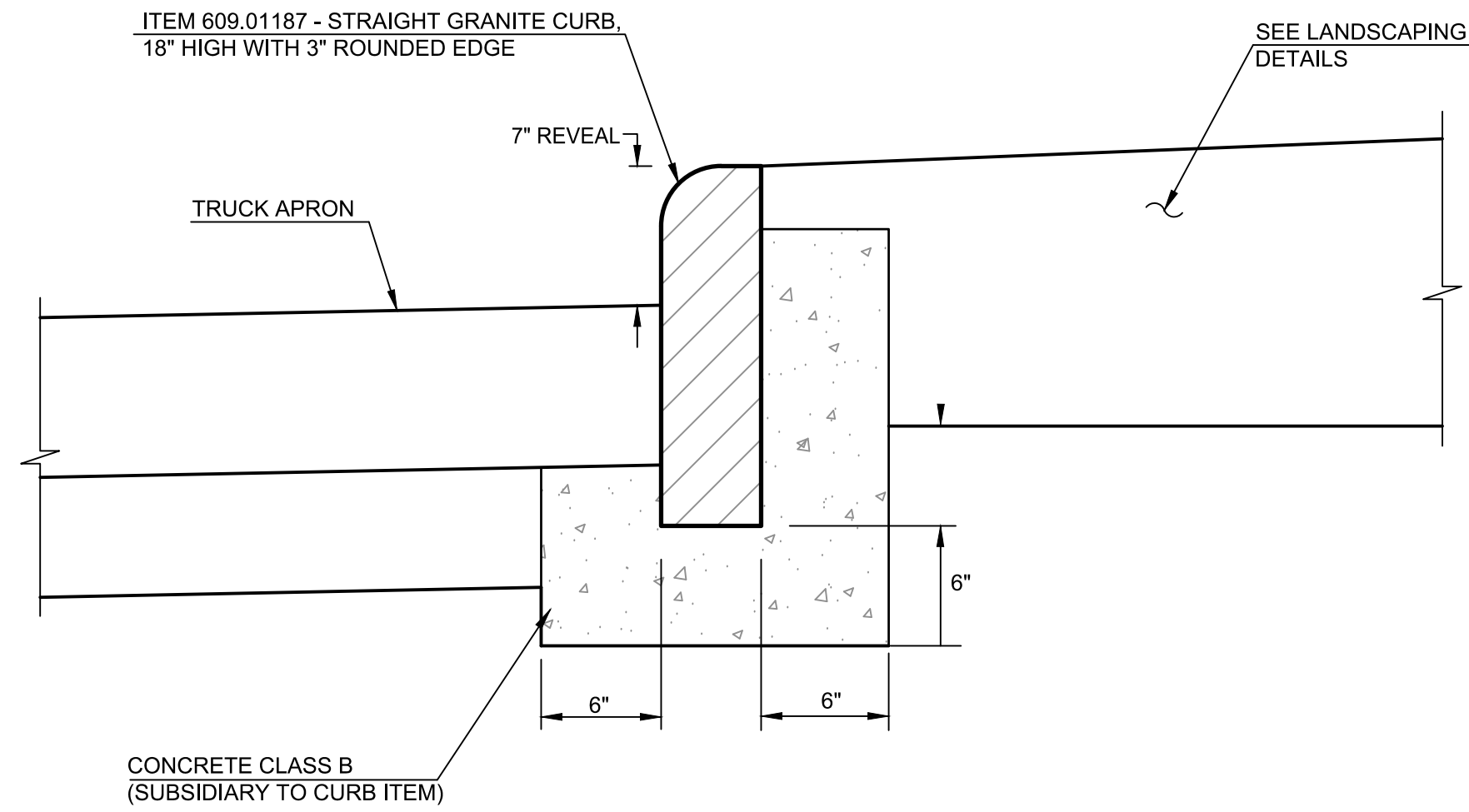
M:\18022.01 KEENE WINCHESTER FINAL\DRAWINGS\SHEET FILES\18022.01-PS&N.DWG



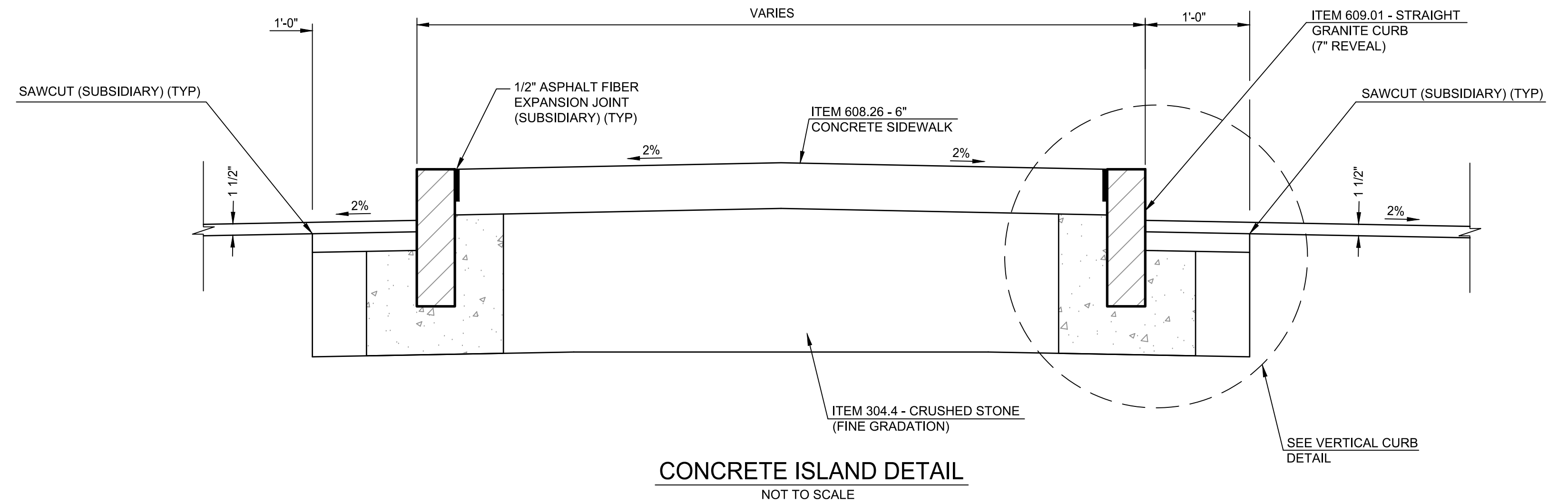
VERTICAL GRANITE CURB DETAIL
NOT TO SCALE



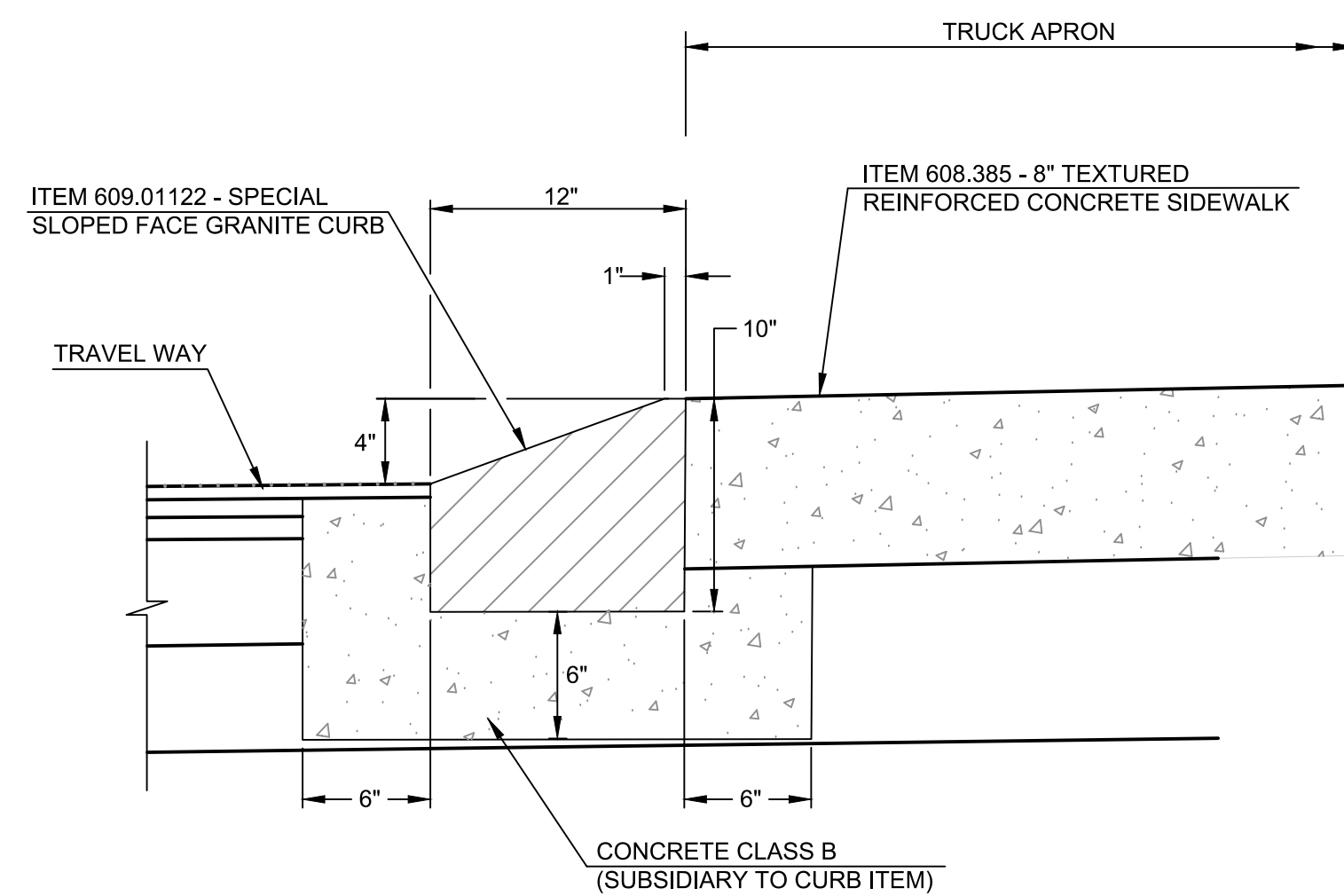
ROUNDABOUT TRUCK APRON PAVEMENT FILLET DETAIL
NOT TO SCALE



ROUNDED CURB DETAIL
NOT TO SCALE




CONCRETE ISLAND DETAIL
NOT TO SCALE



SPECIAL SLOPE FACE CURB DETAIL
NOT TO SCALE

REV	DATE	DESCRIPTION	BY



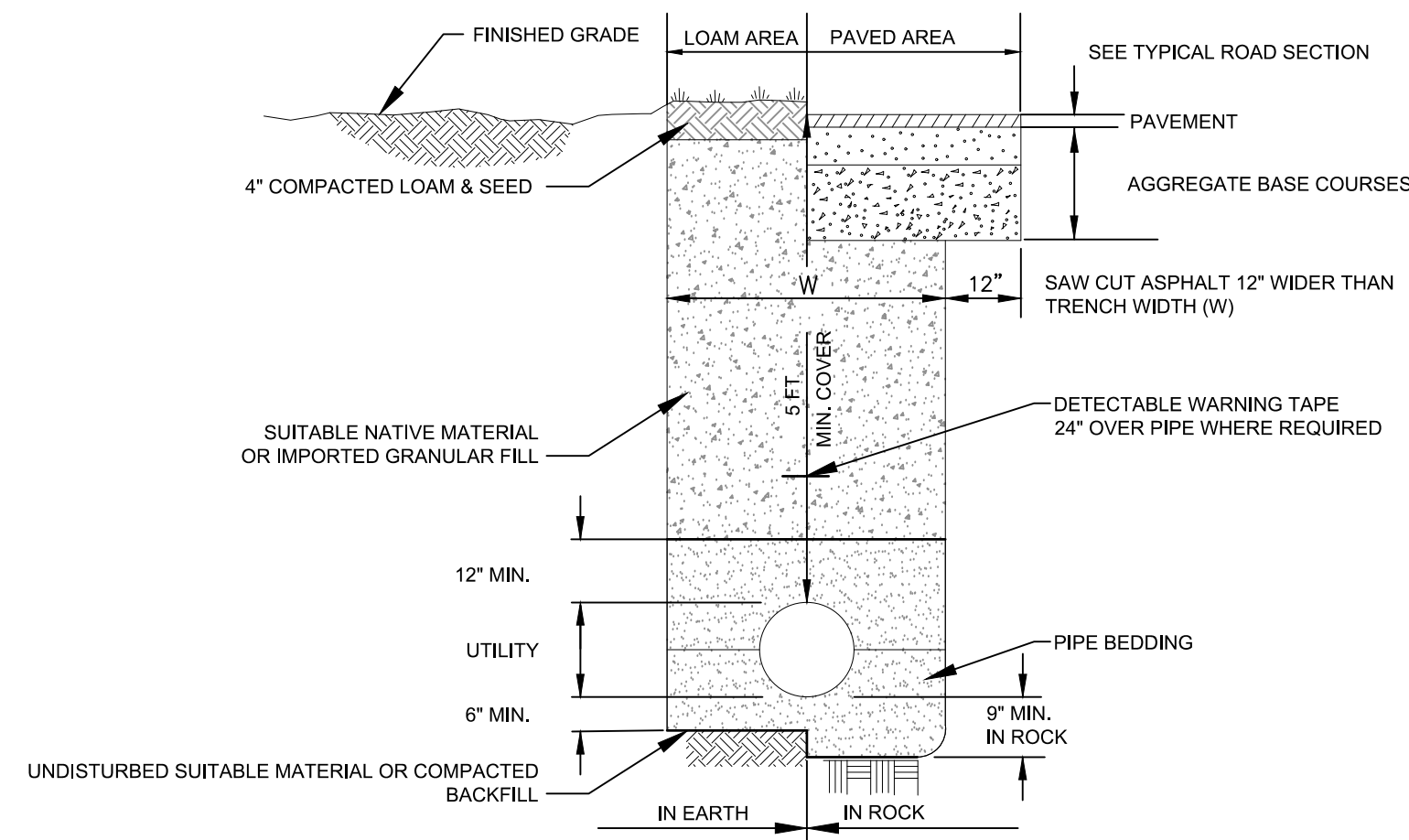
McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

**CITY OF KEENE
KEENE, NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION**

**DETAILS (SHEET 2 OF 21)
CURB AND ISLAND DETAILS**

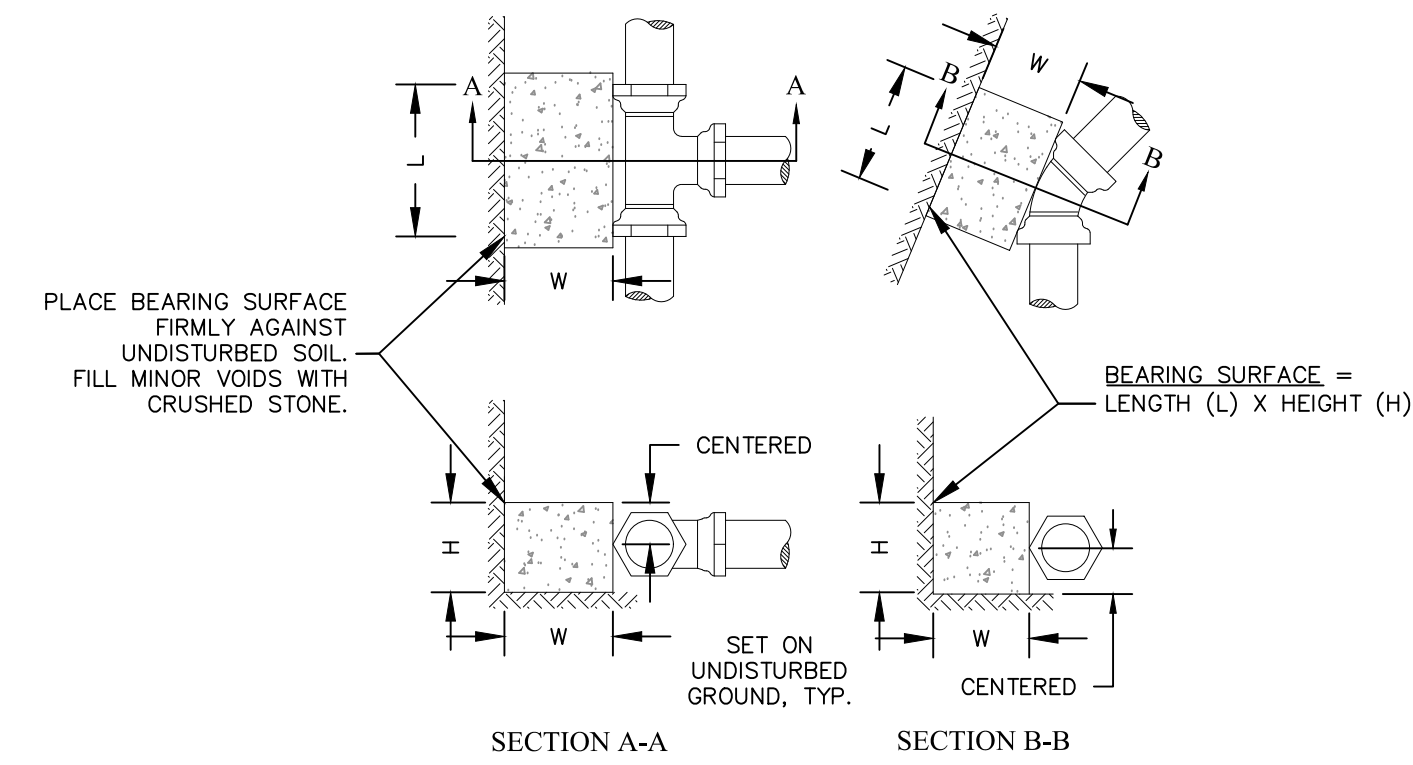
DT-02
9 OF 143

SCALE: AS SHOWN	DESIGN: BEP
DRAWN: MJF	PROJECT: 18022.01
CHECKED: EWM	DATE: SEPTEMBER 2021



- FOR PIPES LESS THAN OR EQUAL TO 15 INCHES IN DIAMETER, W SHALL BE 36 INCHES. FOR PIPES GREATER THAN 15 INCHES IN DIAMETER, W SHALL BE 24 INCHES PLUS PIPE OUTSIDE DIAMETER.
- COMMON STRUCTURE EXCAVATION FOR PROPOSED DRAINAGE PIPE SHALL BE SUBSIDIARY TO THE WORK.
- WATER PIPES WITH LESS THAN 5 FT OF COVER SHALL BE INSULATED WITH 2\"/>

UTILITY TRENCH DETAIL
NOT TO SCALE

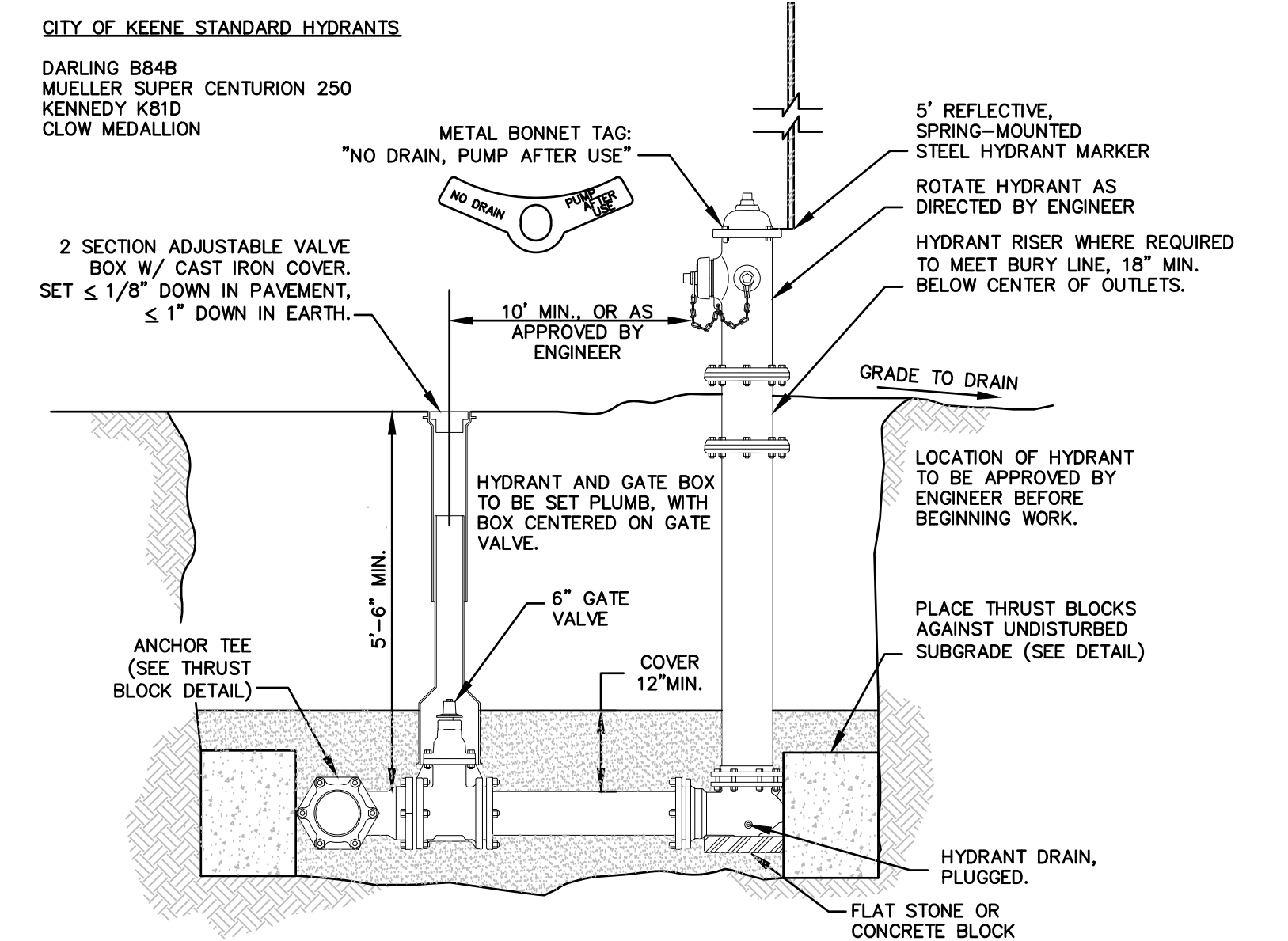


- NOTES:
- CAST IN PLACE CONCRETE NOT ALLOWED WITHOUT APPROVAL OF ENGINEER.
 - PIPE LARGER THAN 12\"/>

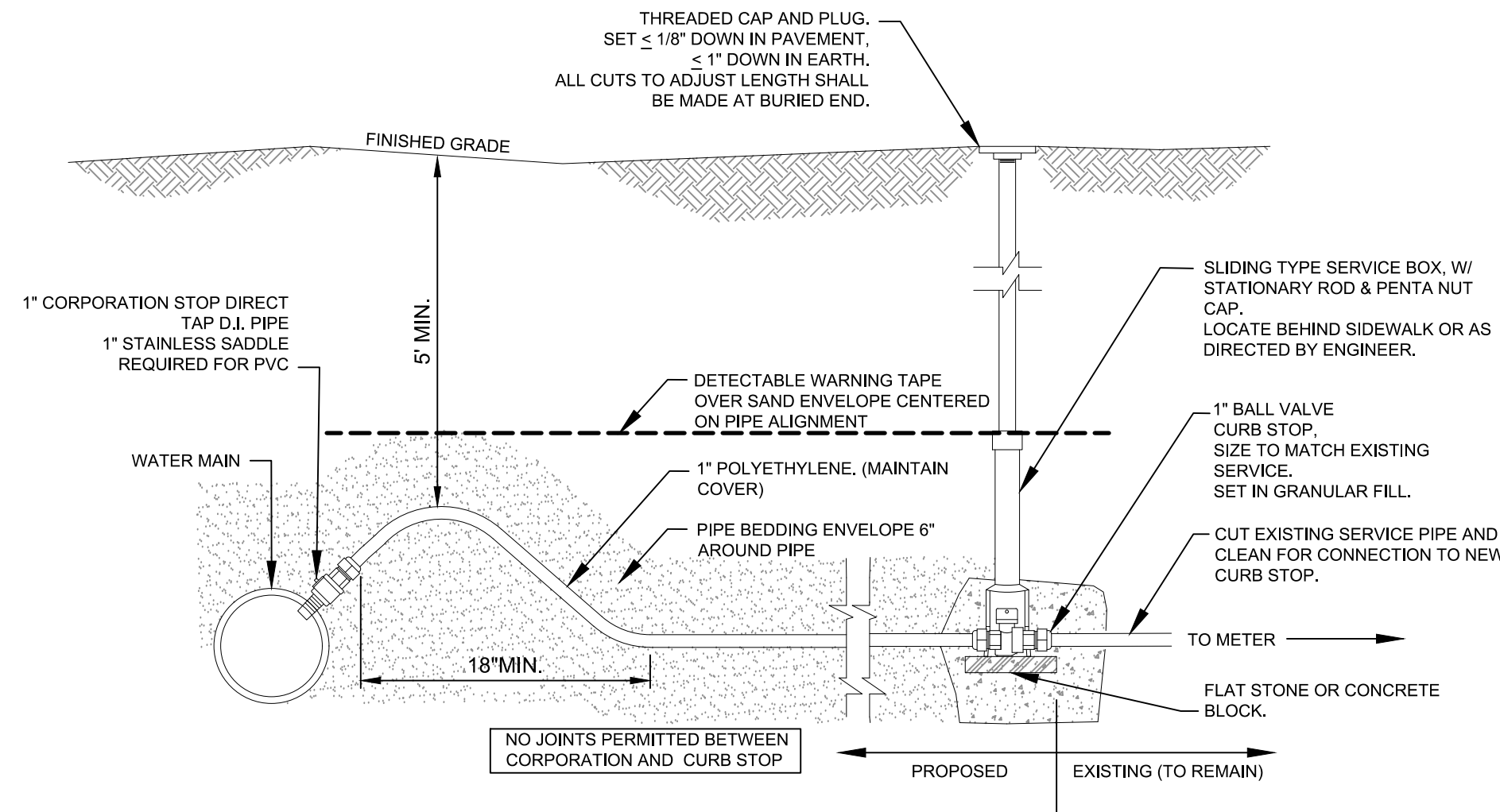
SQUARE FEET BEARING SURFACE REQUIRED (L x H)

FITTING TYPE/SIZE	6"	8"	10"	12"
90° BEND	3	6	9	12
HYDRANT, TEE, CAP	3	4	6	9
45°, 22°, 11.25° BEND	2	3	5	7

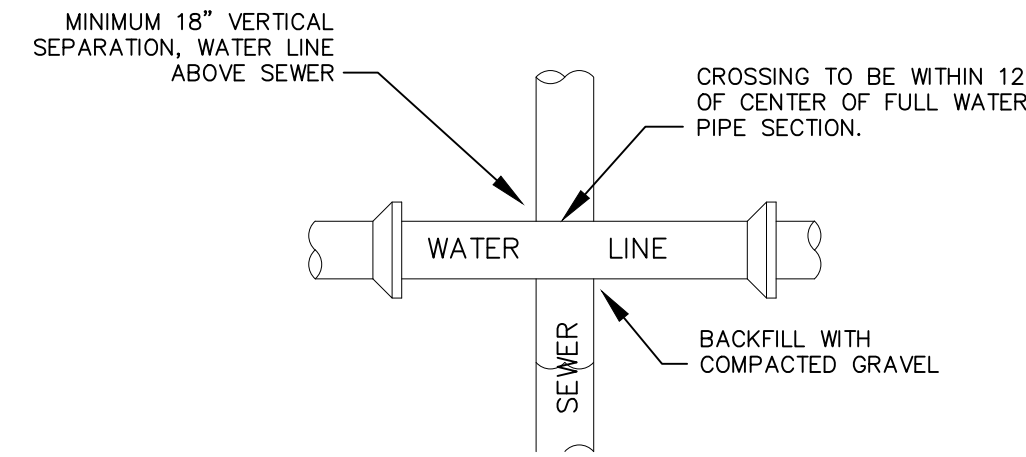
THRUST BLOCK DETAILS
NOT TO SCALE



HYDRANT DETAIL
NOT TO SCALE

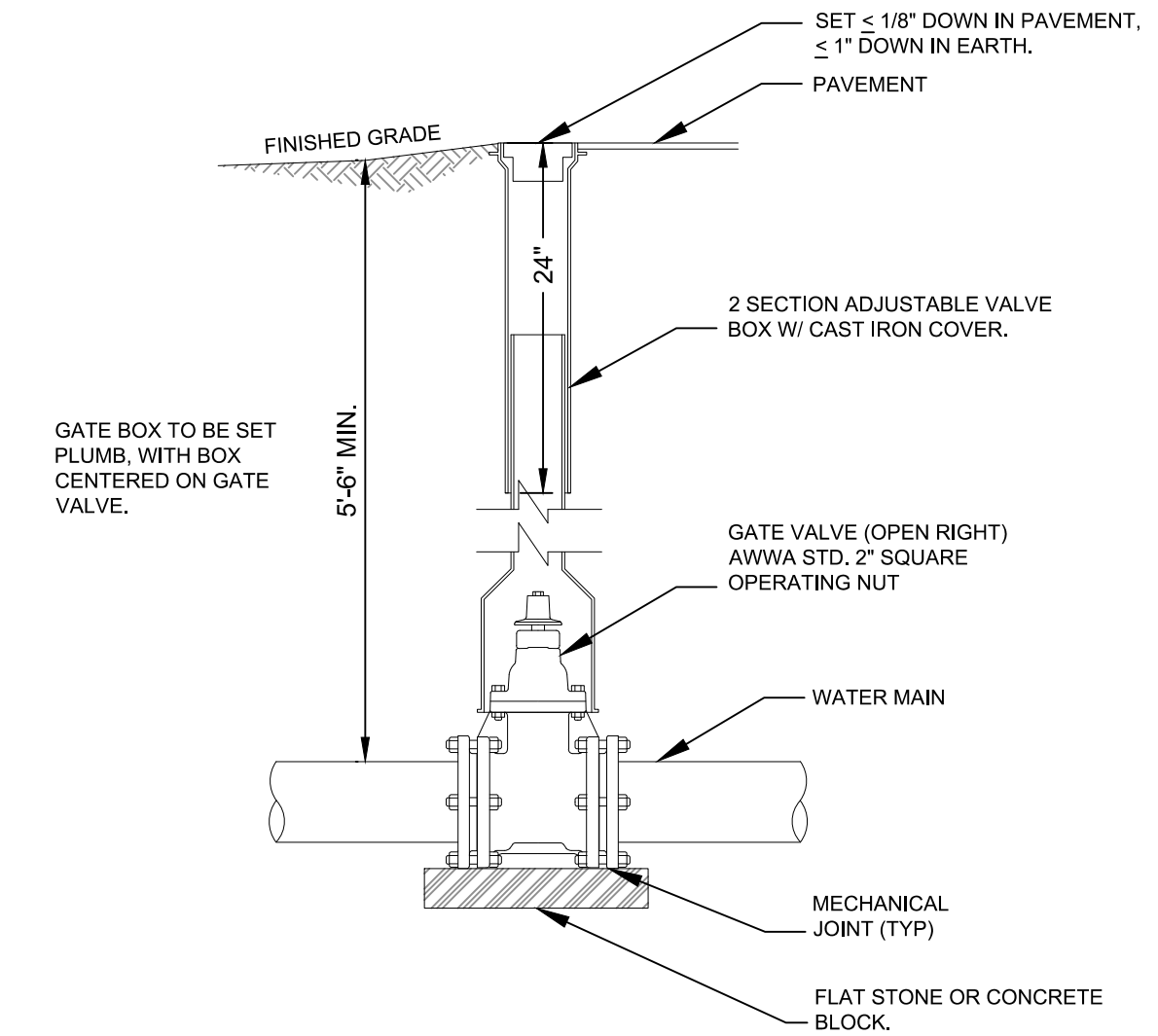


WATER SERVICE DETAIL
NOT TO SCALE



- NOTE:
- SEWERS CROSSING WATER MAINS SHALL BE LAID BENEATH THE WATER MAIN WITH AT LEAST 18 INCHES OF VERTICAL CLEARANCE BETWEEN THE OUTSIDE OF THE SEWER AND THE OUTSIDE OF THE WATER MAIN.
- WHEN IT IS IMPOSSIBLE TO MAINTAIN THE 18 INCH VERTICAL SEPARATION OR WHERE THE SEWER MUST BE LAID ABOVE THE WATER MAIN:
- THE CROSSING SHALL BE ARRANGED SO THAT ONE FULL LENGTH OF SEWER IS CENTERED ABOVE OR BELOW THE WATER LINE WITH SEWER JOINTS AS FAR AS POSSIBLE FROM THE WATER JOINTS.
 - THE SEWER PIPE MUST BE CONSTRUCTED TO WATER MAIN STANDARDS FOR A MINIMUM DISTANCE OF 20 FEET, 10 FEET EITHER SIDE OF THE CROSSING.
 - THE SECTION CONSTRUCTED TO WATER MAIN STANDARDS MUST BE PRESSURE TESTED TO MAINTAIN 150 PSI FOR 15 MINUTES WITHOUT LEAKAGE PRIOR TO BACKFILLING BEYOND MORE THAN ONE FOOT ABOVE THE PIPE.

SEWER CROSSING DETAIL
NOT TO SCALE

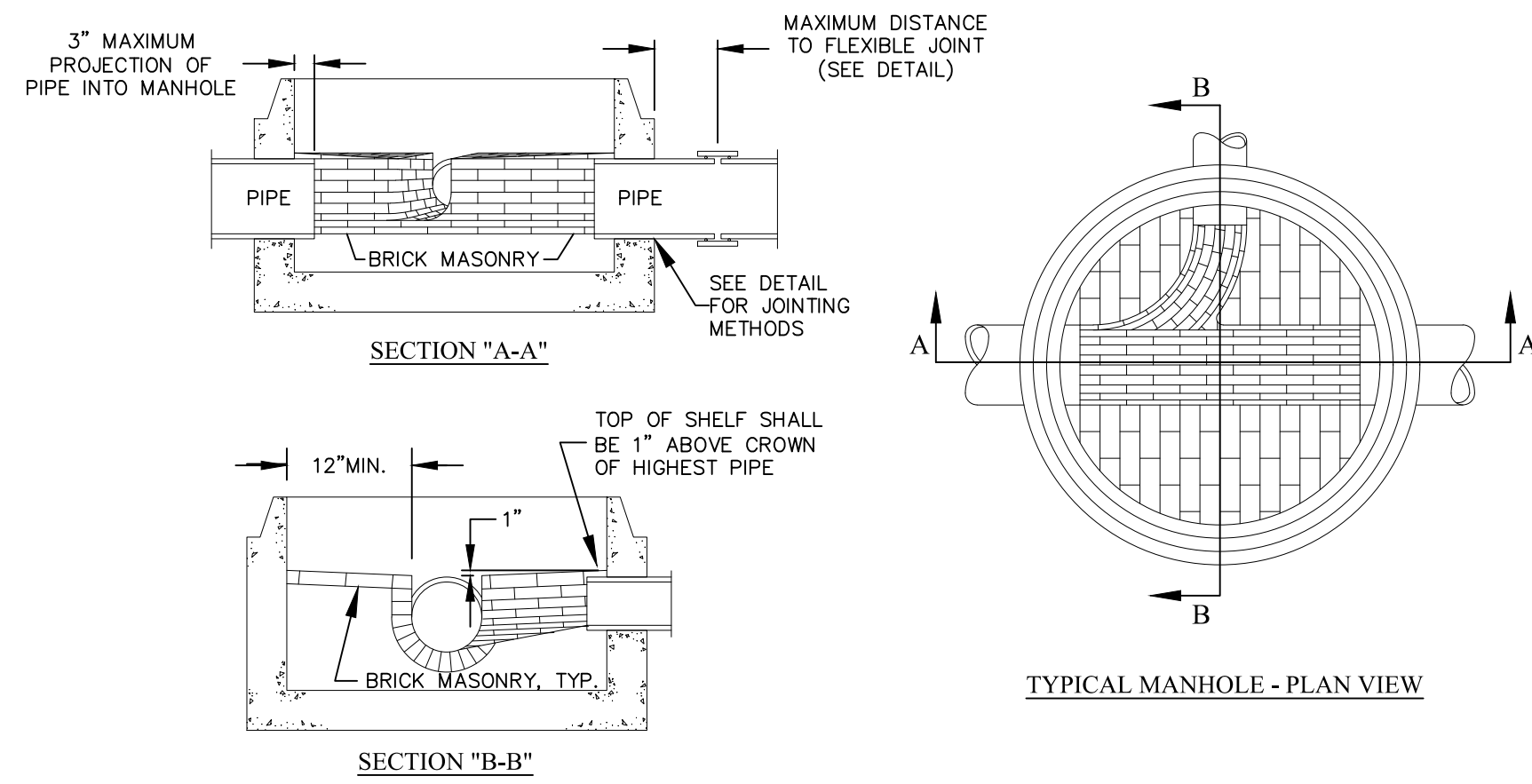


GATE VALVE DETAIL
NOT TO SCALE

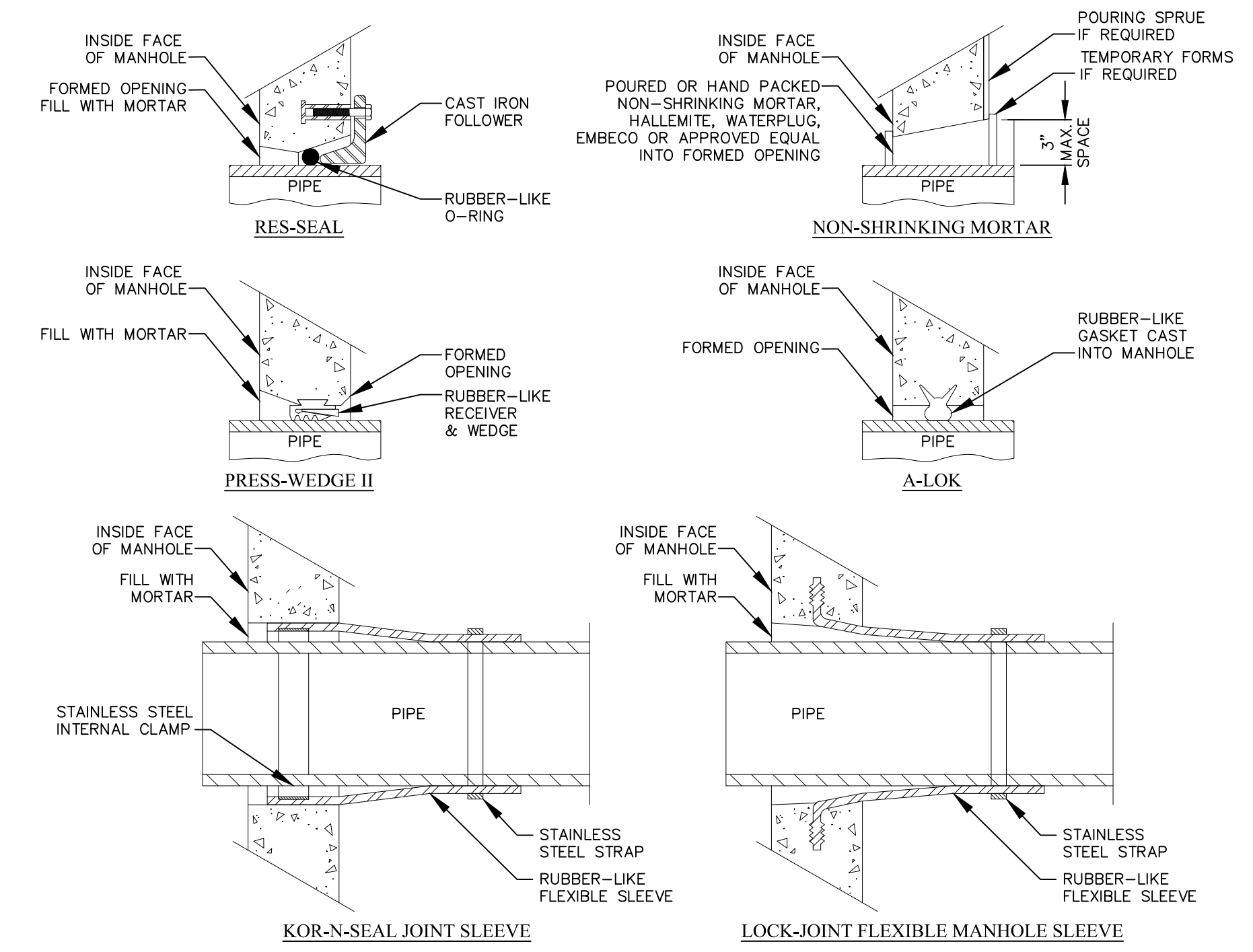
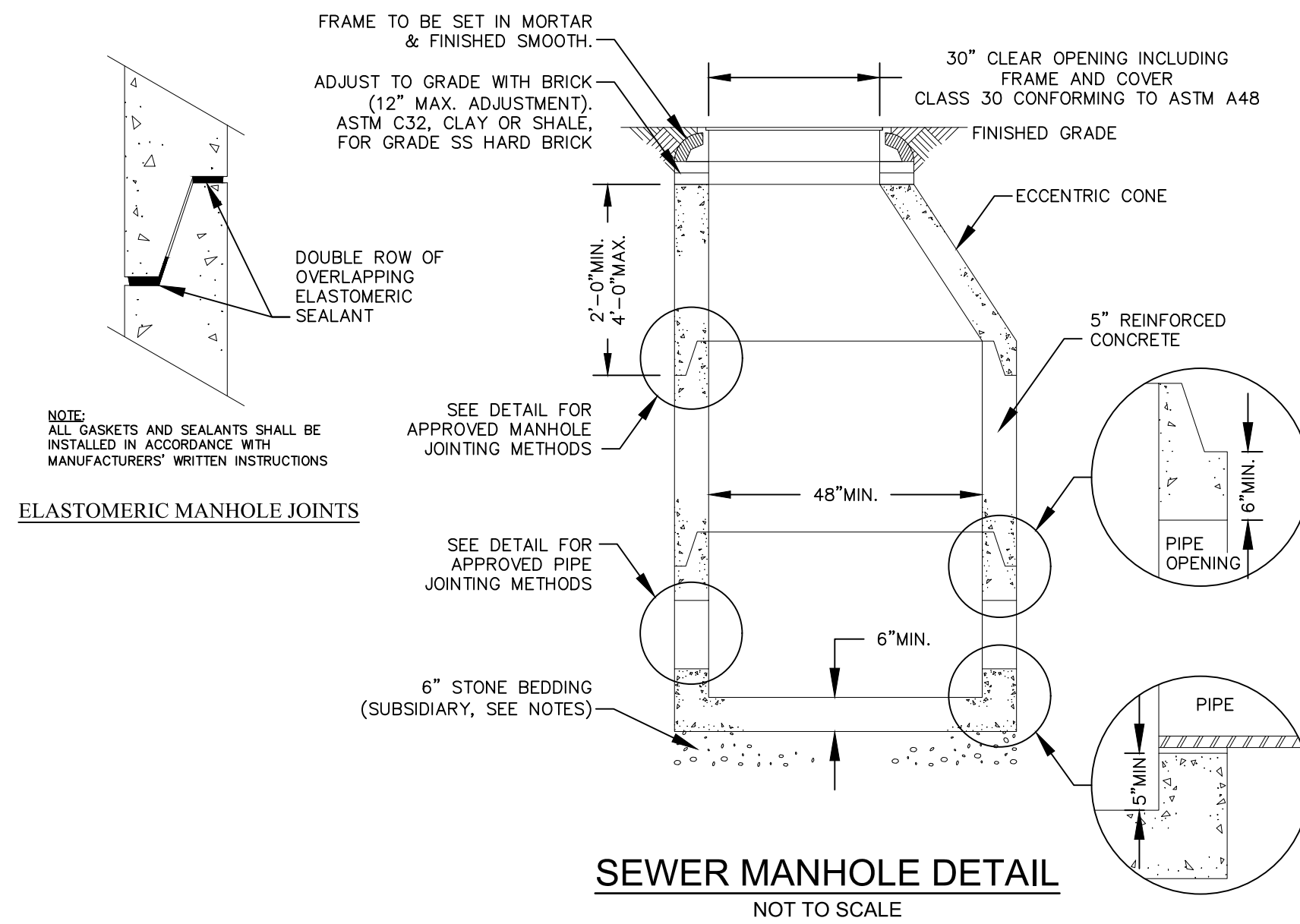
McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

**CITY OF KEENE
KEENE, NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION
DETAILS (SHEET 3 OF 21)
UTILITY DETAILS**

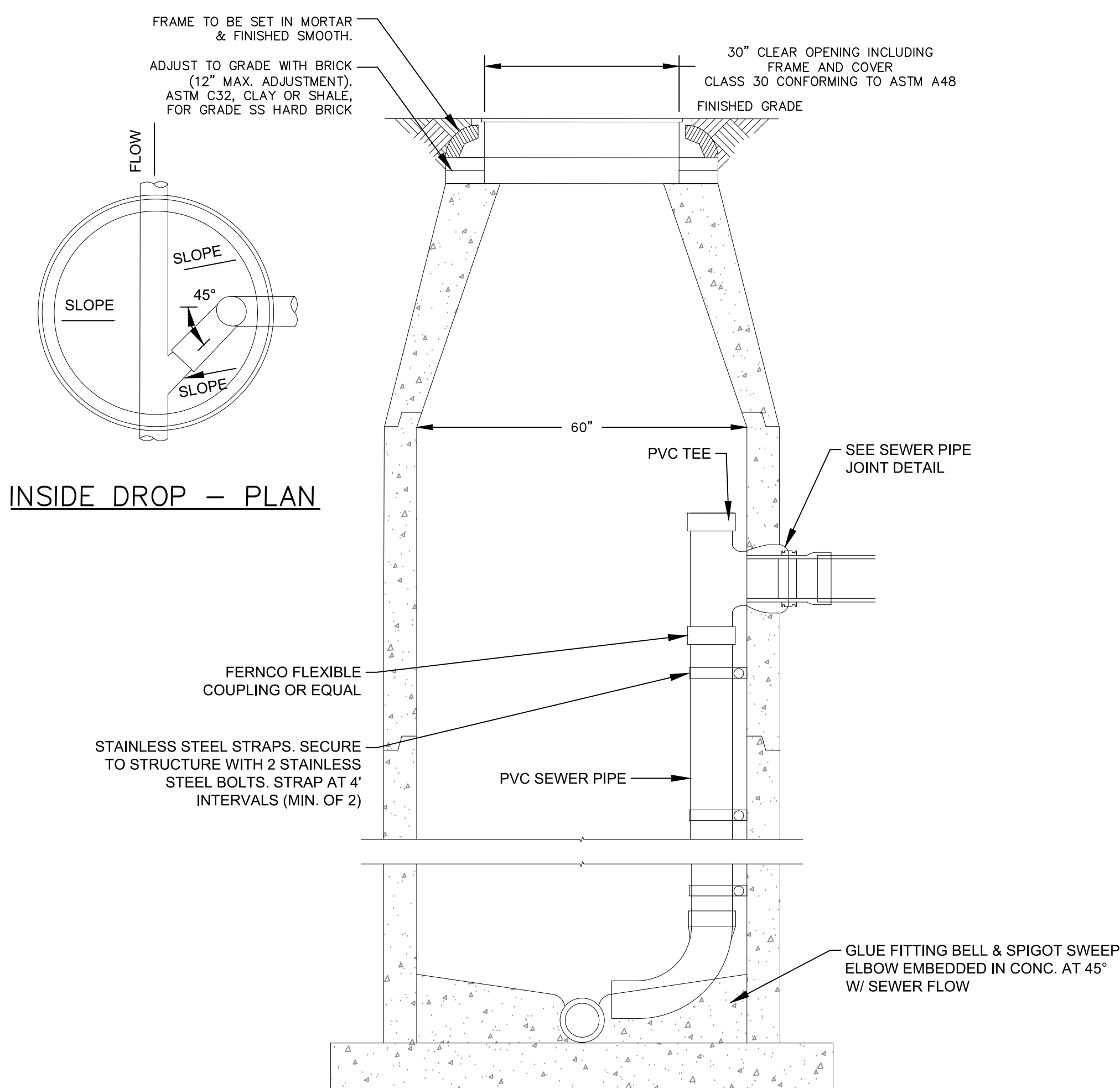
SCALE: AS SHOWN	DESIGN: BEP	DT-03 10 OF 143
DRAWN: MJF	PROJECT: 18022.01	
CHECKED: EWM	DATE: SEPTEMBER 2021	



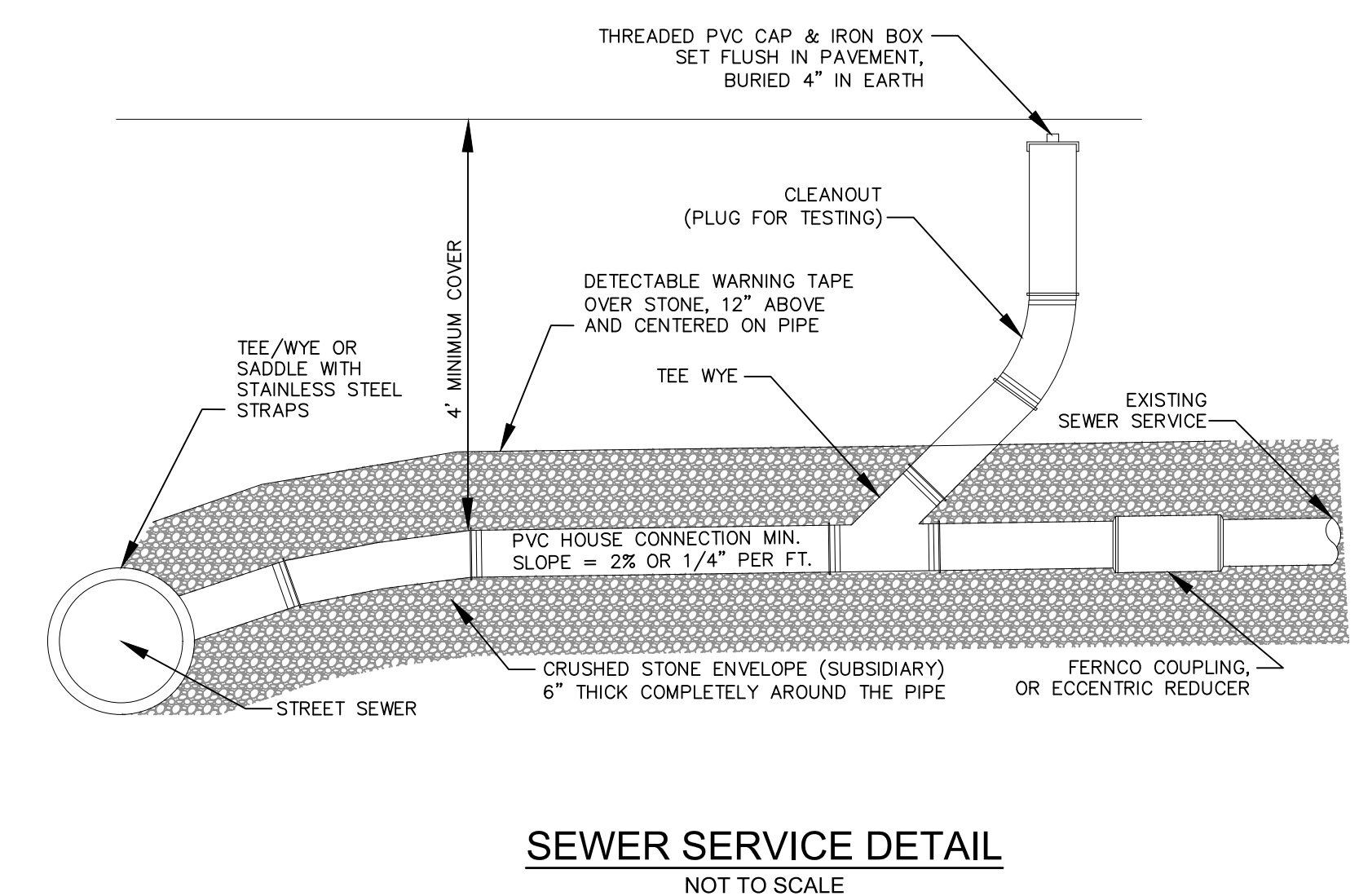
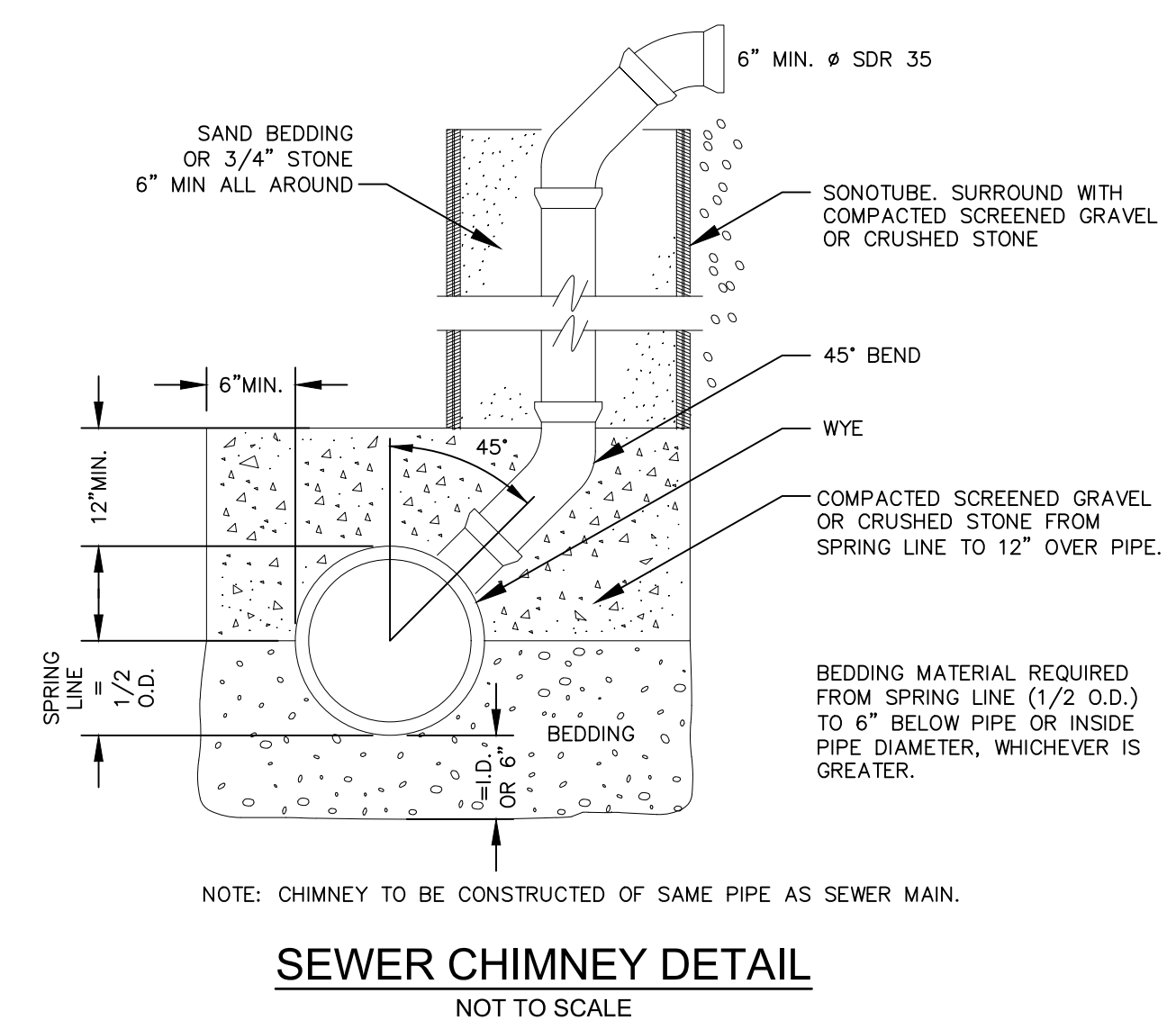
SEWER CHANNEL DETAIL
NOT TO SCALE



SEWER PIPE JOINT DETAIL
NOT TO SCALE



SANITARY SEWER MANHOLE WITH INSIDE DROP DETAIL
NOT TO SCALE



SEWER SERVICE DETAIL
NOT TO SCALE

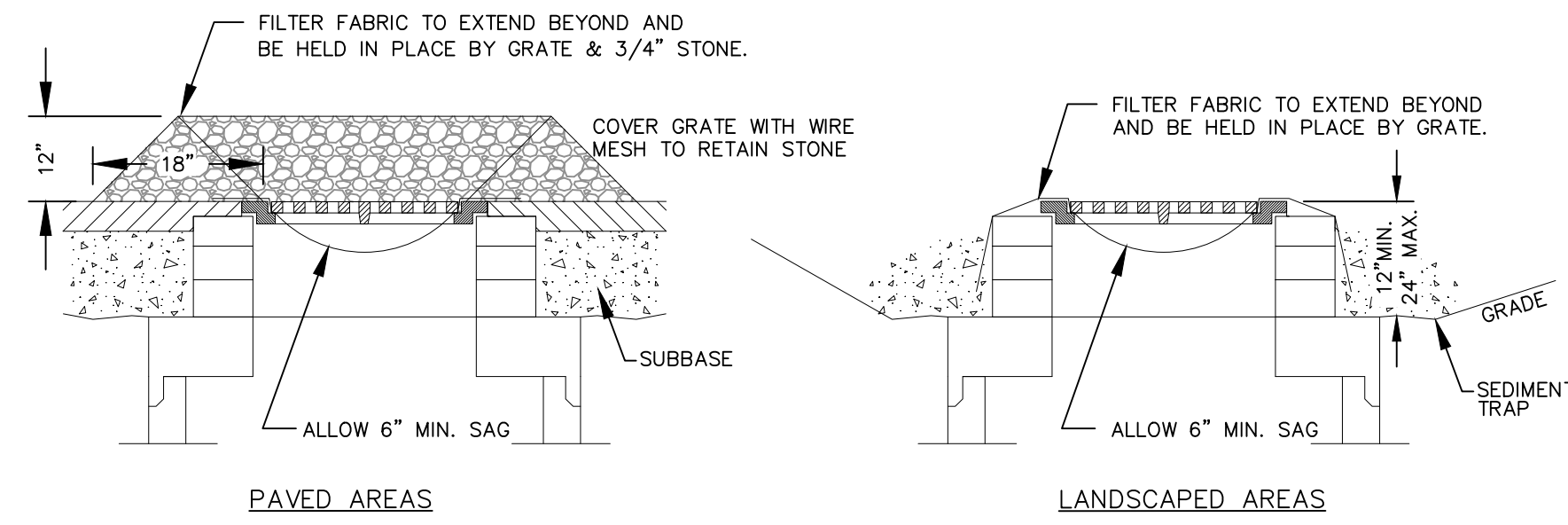
REV	DATE	DESCRIPTION	BY

McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

**CITY OF KEENE
KEENE, NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION
DETAILS (SHEET 4 OF 21)
SEWER DETAILS**

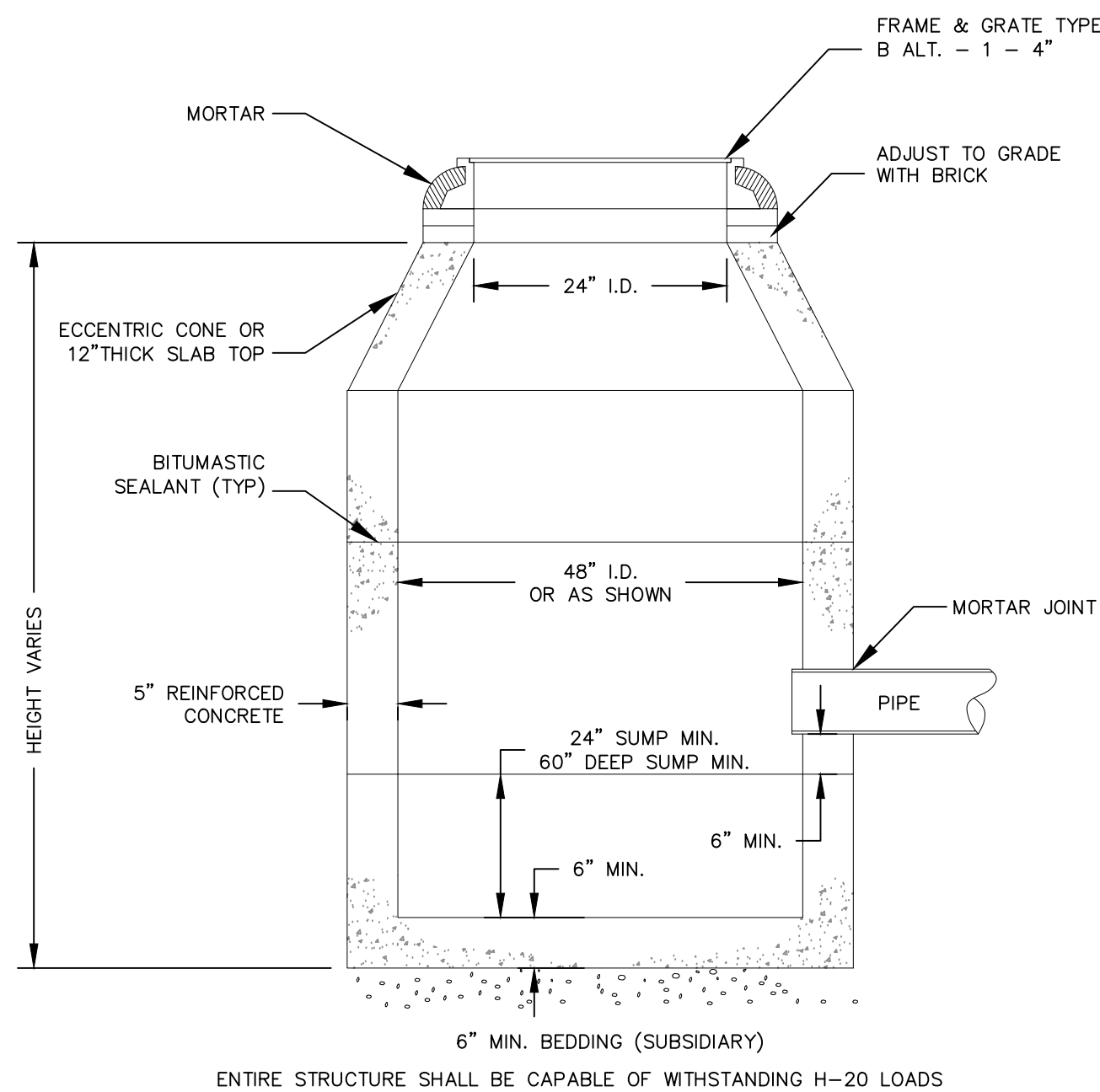
SCALE: AS SHOWN	DESIGN: BEP	DT-04 11 OF 143
DRAWN: MJF	PROJECT: 18022.01	
CHECKED: EWM	DATE: SEPTEMBER 2021	

M:\18022.01 KEENE WINCHESTER FINAL DRAWINGS\SHEET FILES\18022.01-DETS.DWG

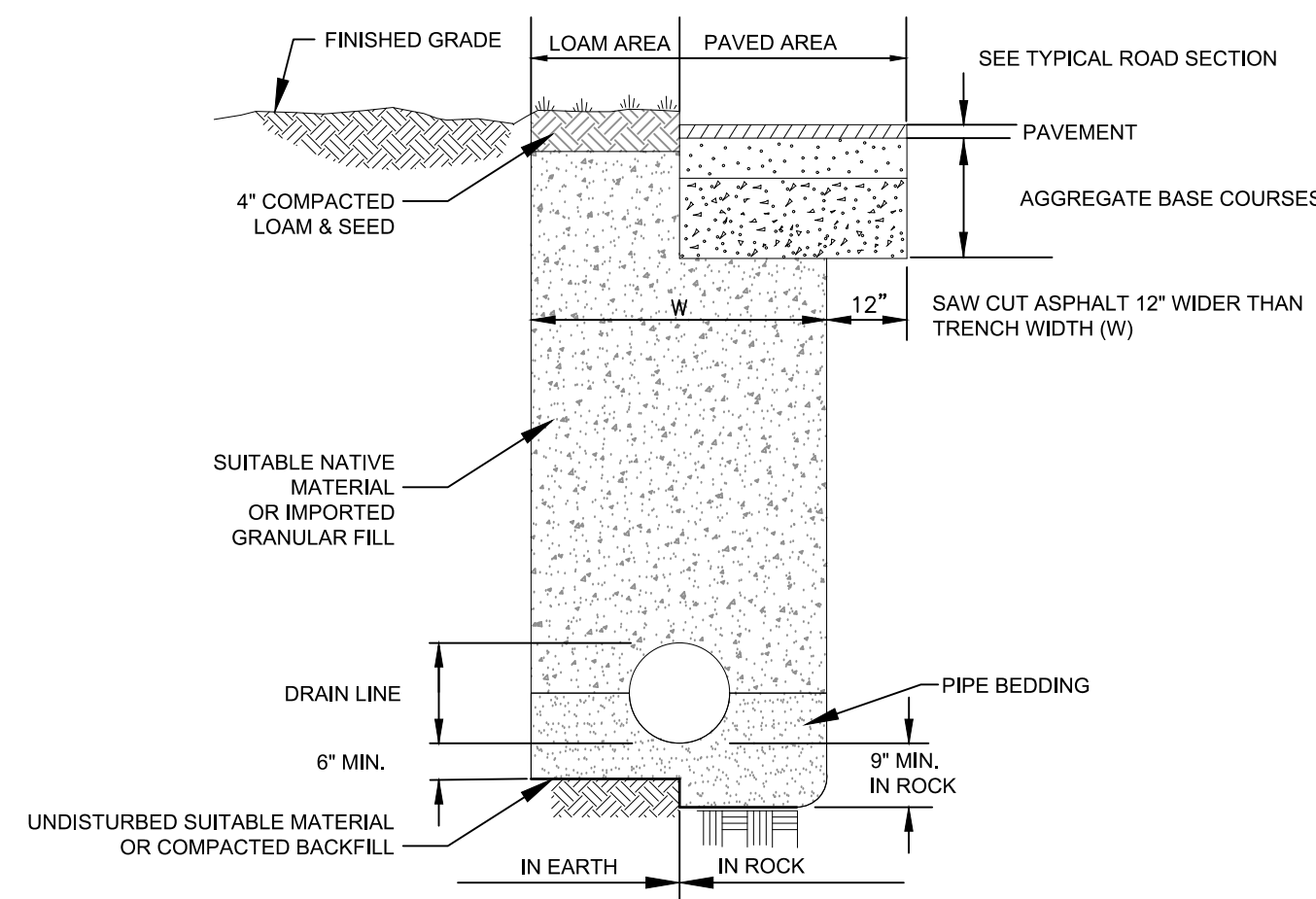


NOTE:
INLET PROTECTION IS TEMPORARY, TO BE MAINTAINED AS NEEDED DURING CONSTRUCTION AND REMOVED FOLLOWING STABILIZATION OF THE SITE.

CATCH BASIN PROTECTION DETAIL
NOT TO SCALE

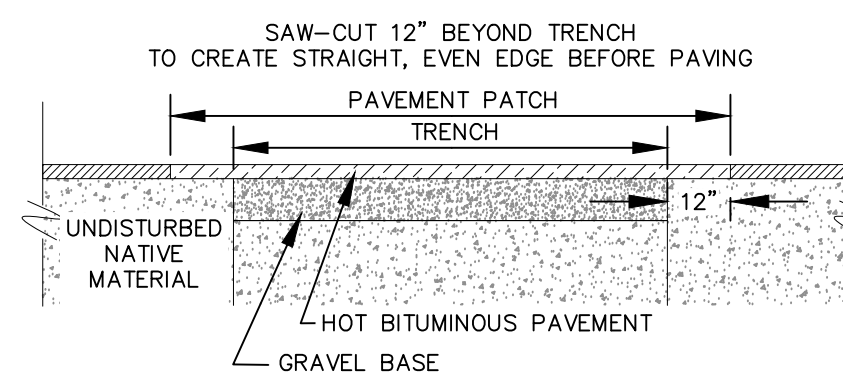


CATCH BASIN DETAIL
NOT TO SCALE



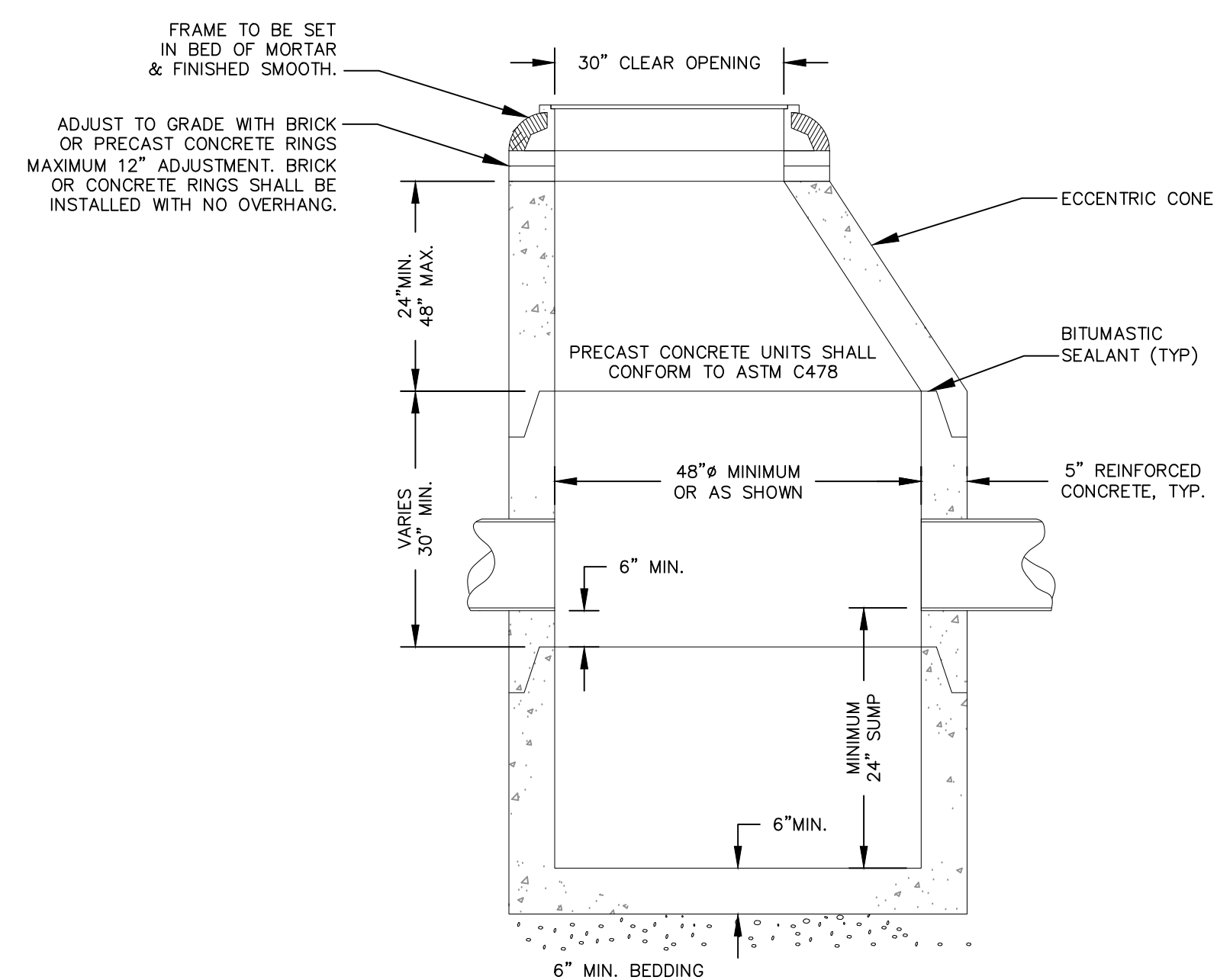
- FOR PIPES LESS THAN OR EQUAL TO 15 INCHES IN DIAMETER, W SHALL BE 36 INCHES. FOR PIPES GREATER THAN 15 INCHES IN DIAMETER, W SHALL BE 24 INCHES PLUS PIPE OUTSIDE DIAMETER.
- COMMON STRUCTURE EXCAVATION FOR UTILITY TRENCH SHALL BE SUBSIDIARY TO THE WORK.

DRAINAGE TRENCH DETAIL
NOT TO SCALE



- | | |
|--|-----------------------------------|
| GRAVEL BASE | HOT BITUMINOUS PAVEMENT |
| 8" CRUSHED GRAVEL (NHDOT ITEM 304.3) | 1-1/2" TOP (1/2" NHDOT 403.12 E) |
| (SIDEWALKS 12" NHDOT 304.3) | 2-1/2" BASE (3/4" NHDOT 403.12 B) |
| 14" BANK RUN GRAVEL (NHDOT ITEM 304.2) | |


TRENCH PATCH DETAIL
NOT TO SCALE



DRAIN MANHOLE DETAIL
NOT TO SCALE

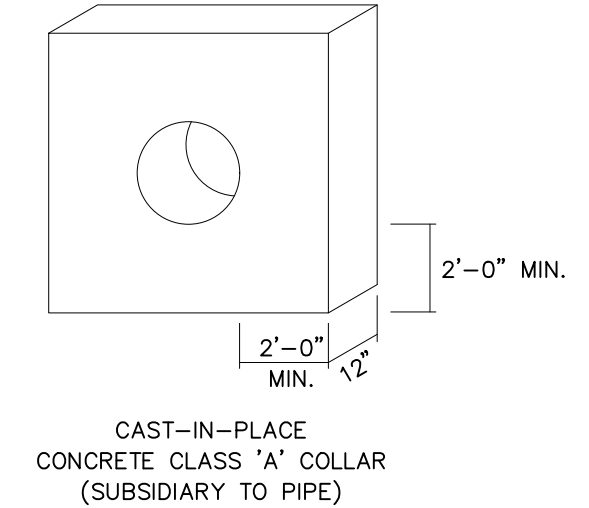
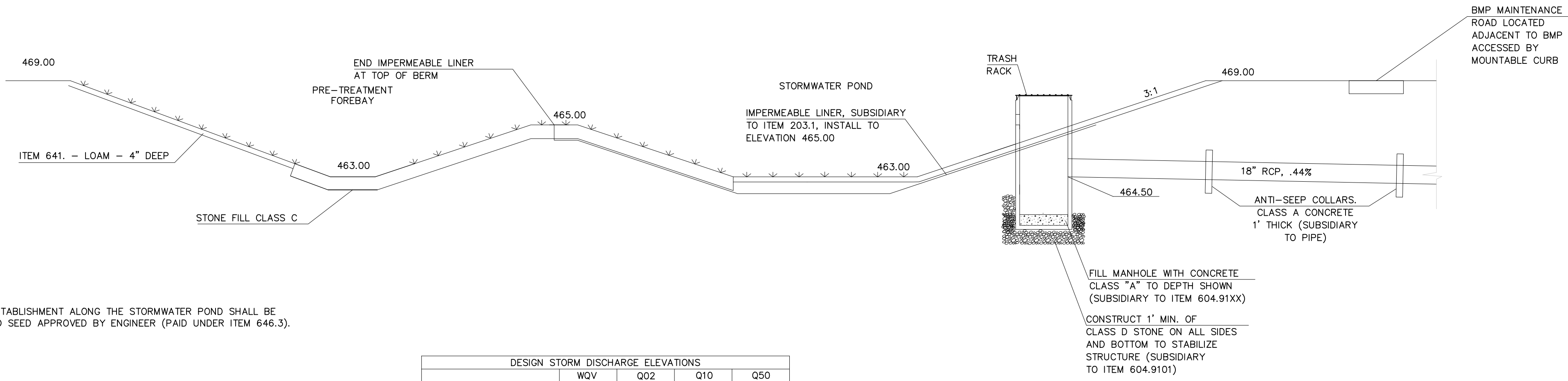
NOTES:

- CATCH BASINS AND DRAINAGE MANHOLES THAT CALL FOR A DEEP SUMP SHALL HAVE A 5-FOOT DEEP SUMP.

 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301			
REV	DATE	DESCRIPTION	BY

CITY OF KEENE
KEENE, NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION
DETAILS (SHEET 5 OF 21)
DRAINAGE DETAILS

SCALE: AS SHOWN	DESIGN: BEP	DT-05
DRAWN: MJF	PROJECT: 18022.01	
CHECKED: EWM	DATE: SEPTEMBER 2021	

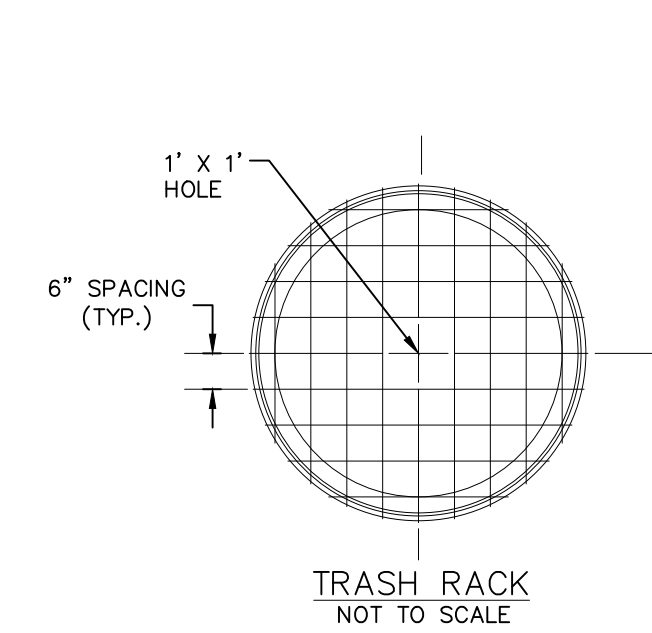


ANTI-SEEP COLLAR
NOT TO SCALE

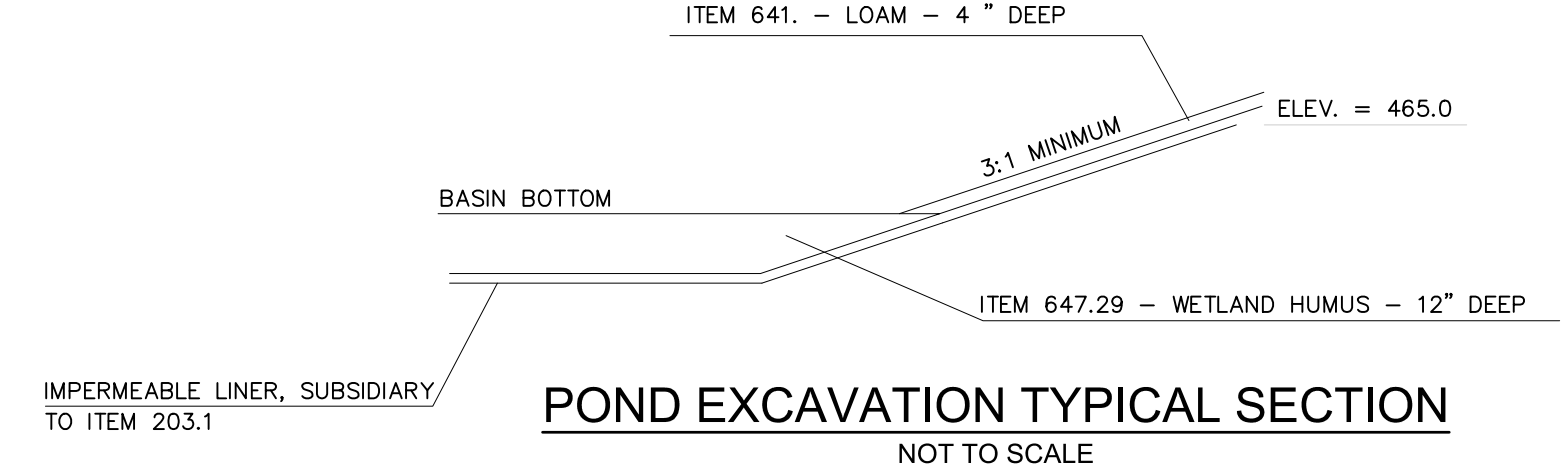
NOTES:
1. TURF ESTABLISHMENT ALONG THE STORMWATER POND SHALL BE WETLAND SEED APPROVED BY ENGINEER (PAID UNDER ITEM 646.3).

DESIGN STORM DISCHARGE ELEVATIONS				
	WQV	Q02	Q10	Q50
WET POND	465.98	466.54	467.20	467.92

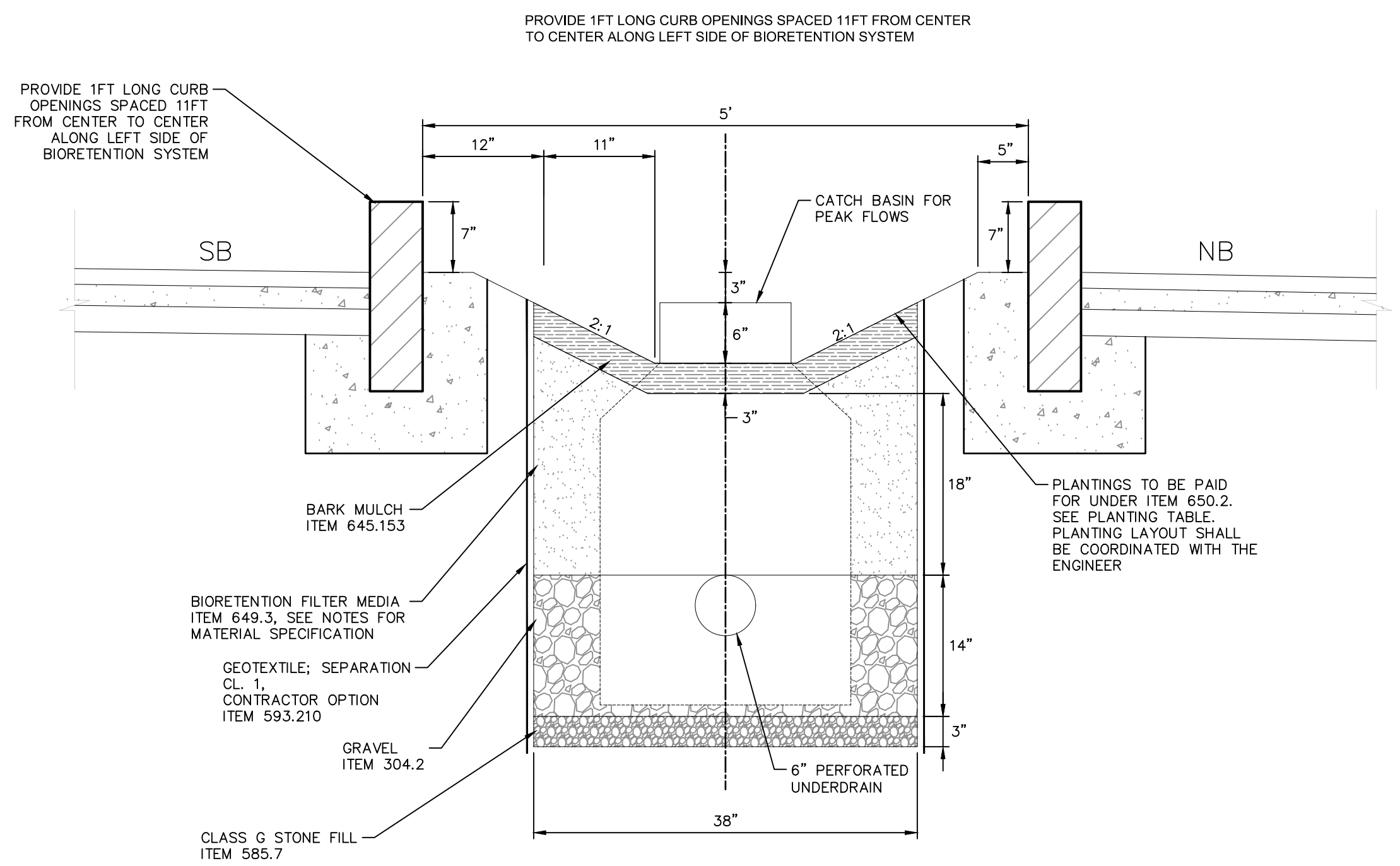
STORMWATER POND TYPICAL SECTION
NOT TO SCALE



TRASH RACK
NOT TO SCALE



POND EXCAVATION TYPICAL SECTION
NOT TO SCALE

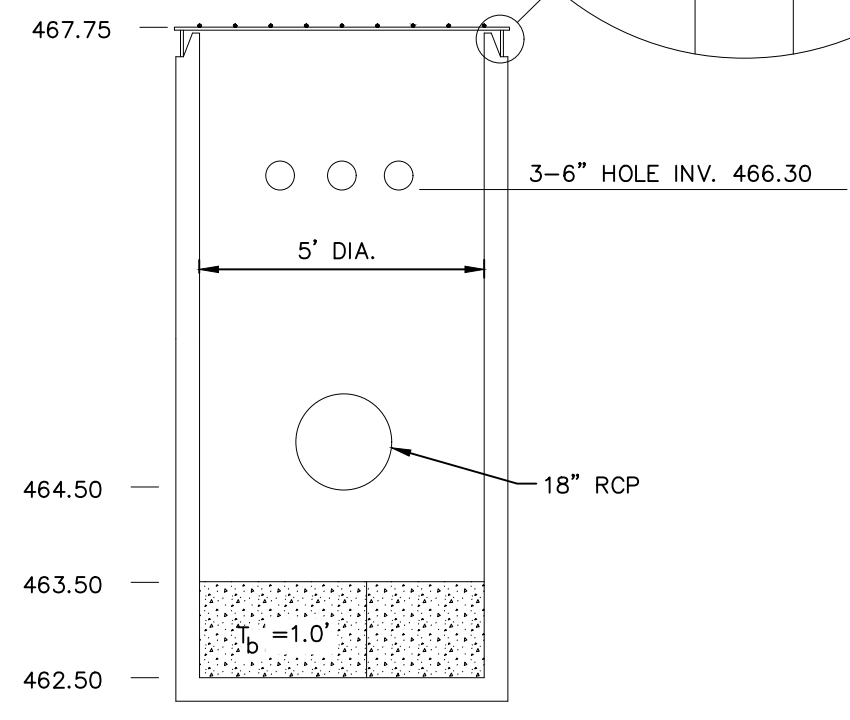


BIORETENTION PLANTING TABLE		
QTY.	BOTANICAL NAME	COMMON NAME
85	CALLUNA VULGARIS	HEATHER
85	RUDBECKIA SPECIOSA	SHOWY BLACK-EYED SUSAN
85	ECHINACEA PURPUREA	PURPLE CONEFLOWER

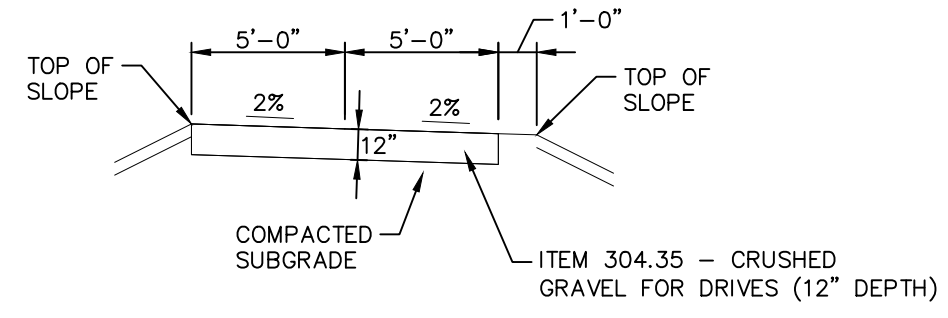
MEDIAN BIORETENTION SYSTEM
NOT TO SCALE

NOTES:

- THE FILTER MEDIA SHALL CONSIST OF ONE OF THE FOLLOWING MIXTURES VOLUME:
 - 50% TO 55% BY VOLUME SAND THAT IS CERTIFIED BY ITS PRODUCER AS MEETING THE REQUIREMENTS FOR ASTM C-33 CONCRETE SAND, 20% TO 30% BY VOLUME OF LOAMY SAND TOPSOIL WITH 15% TO 25% FINES PASSING THE NUMBER 200 SIEVE, AND 20% TO 30% BY VOLUME MODERATELY FINE SHREDDED BARK OR WOOD FIBER MULCH WITH LESS THAN 5% PASSING THE NUMBER 200 SIEVE;
 - 20% TO 30% BY VOLUME OF MODERATELY FINE SHREDDED BARK OR WOOD FIBER MULCH THAT HAS NO MORE THAN 5% FINES PASSING THE NUMBER 200 SIEVE, WITH 70 TO 80% BY VOLUME LOAMY COARSE SAND USED IN THE MIXTURE MEETING THE FOLLOWING SIEVE ANALYSIS SPECIFICATION:
 - FROM 85 TO 100 PERCENT BY WEIGHT SHALL PASS THE NUMBER 10 SIEVE;
 - FROM 70 TO 100 PERCENT BY WEIGHT SHALL PASS THE NUMBER 20 SIEVE;
 - FROM 15 TO 40 PERCENT BY WEIGHT SHALL PASS THE NUMBER 60 SIEVE; AND
 - FROM 8 TO 15 PERCENT BY WEIGHT SHALL PASS THE NUMBER 200 SIEVE;
- FRAGMENT SIZE DISTRIBUTION:
 - STICKS AND ROOTS: SHOULD BE MINIMIZED AND PREFERABLY LIMITED TO NOTHING LARGER THAN 4.76 MM
 - DEBRIS AND OTHER FOREIGN MATERIALS: SHOULD BE MINIMIZED
- SOIL REACTION: PH OF 6 TO 7.
- CEC OF TOTAL SOIL: MINIMUM 10 MEQ/100 ML AT PH OF 7.0.
- BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS INDICATED ON DRAWINGS
- BASIC PROPERTIES: MANUFACTURED SOIL SHALL NOT CONTAIN THE FOLLOWING:
 - UNACCEPTABLE MATERIALS: CONCRETE SLURRY, CONCRETE LAYERS OR CHUNKS, CEMENT, PLASTER, BUILDING DEBRIS, ASPHALT, BRICKS, OILS, GASOLINE, DIESEL FUEL, PAINT THINNER, TURPENTINE, TAR, ROOFING COMPOUND, ACID, SOLID WASTE, AND OTHER EXTRANEOUS MATERIALS THAT ARE HARMFUL TO PLANT GROWTH.
 - UNSUITABLE MATERIALS: STONES, ROOTS, PLANTS, SOD, CLAY LUMPS, AND POCKETS OF COARSE SAND THAT EXCEED A COMBINED MAXIMUM OF 5 PERCENT BY DRY WEIGHT OF THE MANUFACTURED SOIL.
 - LARGE MATERIALS: STONES, CLODS, ROOTS, CLAY LUMPS, AND POCKETS OF COARSE SAND EXCEEDING 0.187 INCHES (4.76 MM) IN ANY DIMENSION.
- ACCEPTABLE ORGANIC SOIL AMENDMENTS
 - NO COMPOST SHOULD BE USED IN THE PLANTING MIX UNLESS SPECIFIED BY THE ENGINEER.
 - SPHAGNUM PEAT: PARTIALLY DECOMPOSED SPHAGNUM PEAT MOSS, FINELY DIVIDED OR OF GRANULAR TEXTURE WITH 100 PERCENT PASSING THROUGH A 1/2-INCH (13-MM) SIEVE, A PH OF 3.4 TO 4.8.
 - WOOD DERIVATIVES: SHREDDED WOOD, WOOD CHIPS, GROUND BARK, OR WOOD WASTE; OF UNIFORM TEXTURE AND FREE OF STONES, STICKS, SOIL, OR TOXIC MATERIALS.
 - MEDIA AMENDMENTS SUCH AS ZERO-VALENT IRON AND/OR DRINKING WATER TREATMENT RESIDUALS (ALUM) TO ENHANCE PHOSPHORUS SORPTION AS SPECIFIED BY THE ENGINEER.



OUTLET CONTROL STRUCTURE
NOT TO SCALE



BMP MAINTENANCE ROAD TYPICAL SECTION
NOT TO SCALE

GENERAL NOTES:
1. AUDIT USE OF HEAVY MACHINERY IN BASIN BOTTOM TO MINIMIZE COMPACTION OF SUBSOILS. IN CASE OF OVERCOMPACTION, RAKE OR ROTOTILL SUBGRADE TO A DEPTH OF 4\"/>

McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

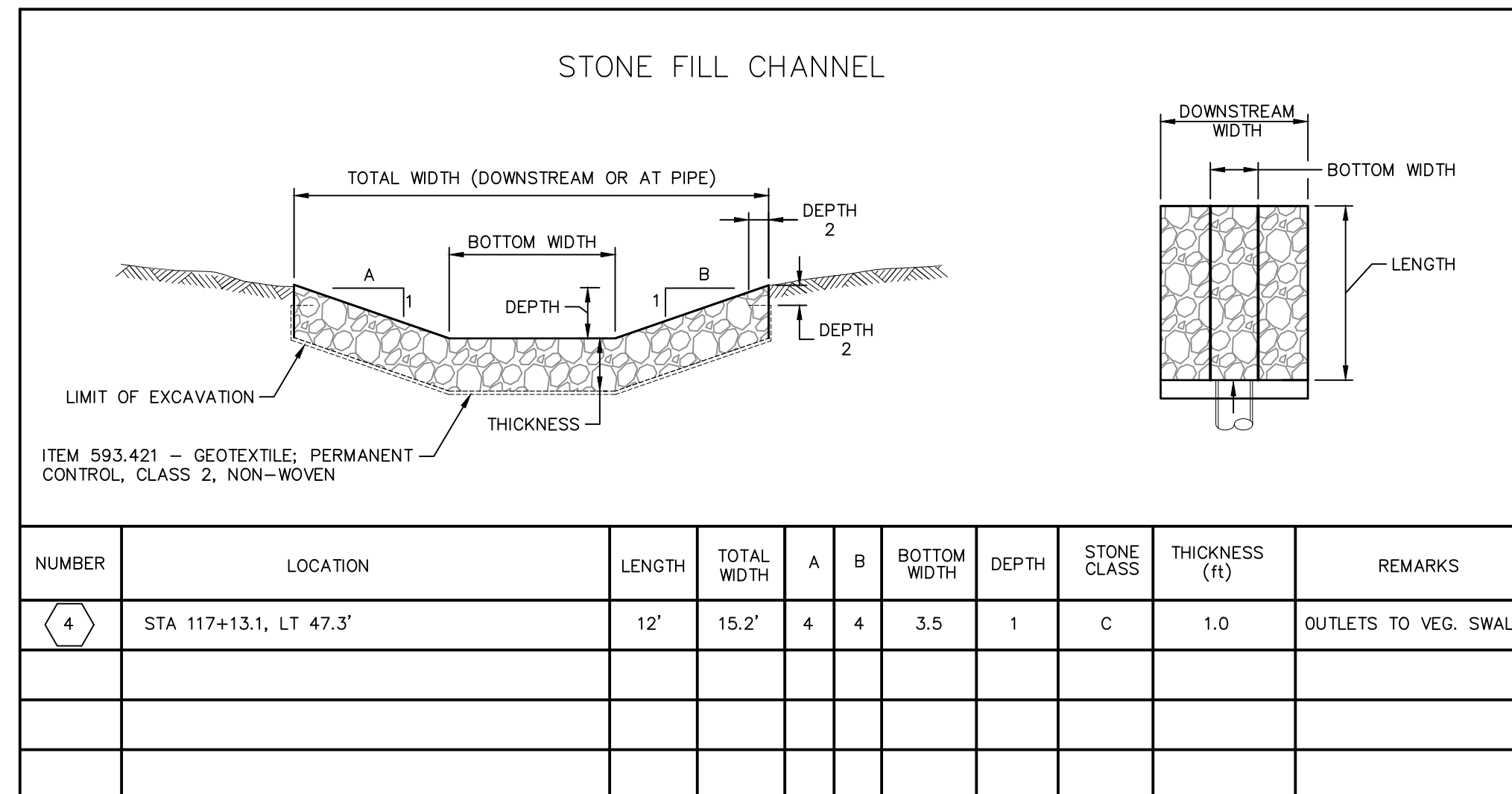
**CITY OF KEENE
KEENE, NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION**

**DETAILS (SHEET 6 OF 21)
STORMWATER DETAILS 1**

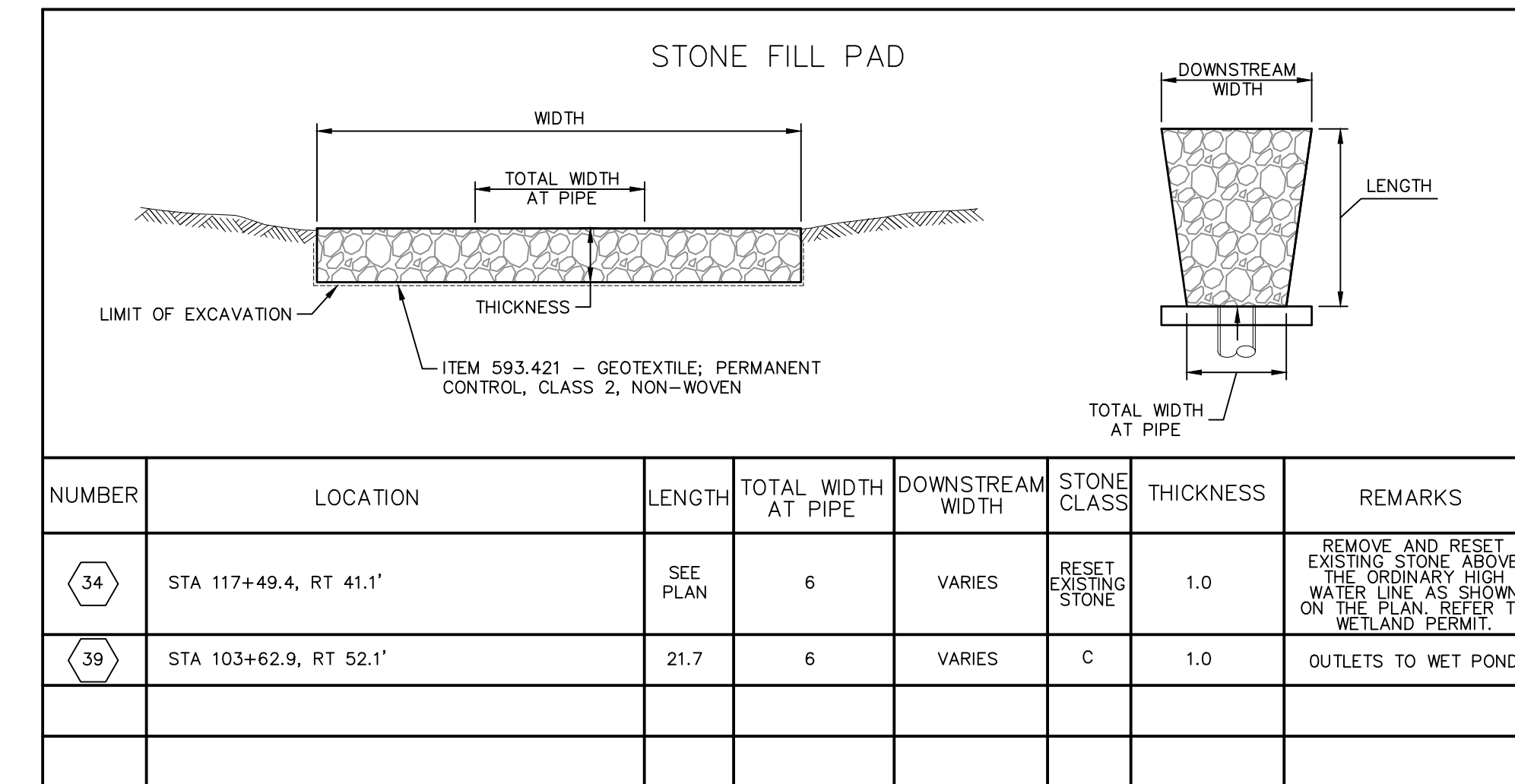
REV	DATE	DESCRIPTION	BY

SCALE: AS SHOWN	DESIGN: BEP	DT-06 13 OF 143
DRAWN: MJF	PROJECT: 18022.01	
CHECKED: EWM	DATE: SEPTEMBER 2021	

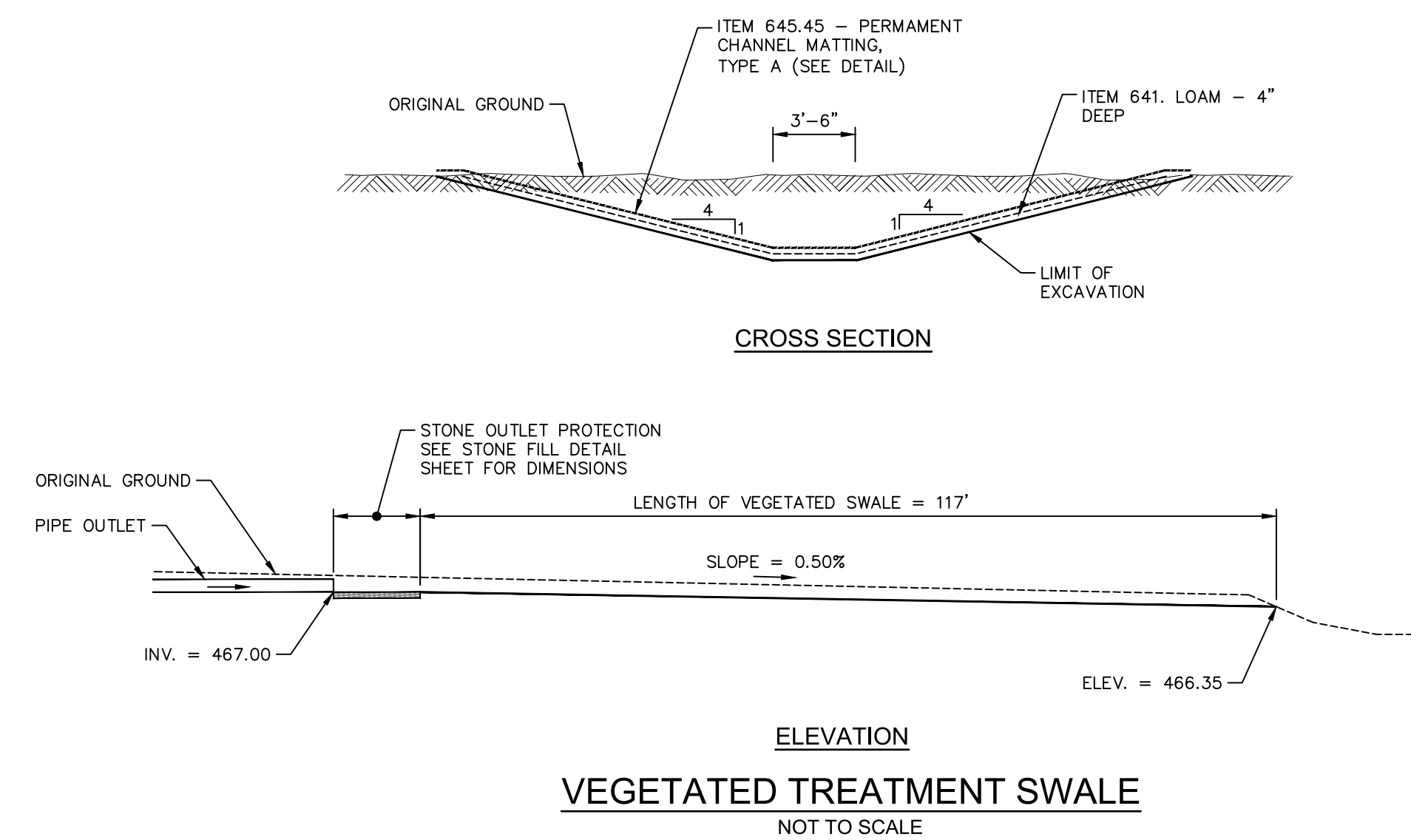
M:\18022.01 KEENE WINCHESTER FINAL\DRAWINGS\SHEET FILES\18022.01-DETS.DWG



EXCAVATION FOR STONE FILL CHANNELS SHALL BE ITEM 206.1, COMMON STRUCTURE EXCAVATION, OR AS INDICATED IN THE DRAINAGE SUMMARY SHEETS.



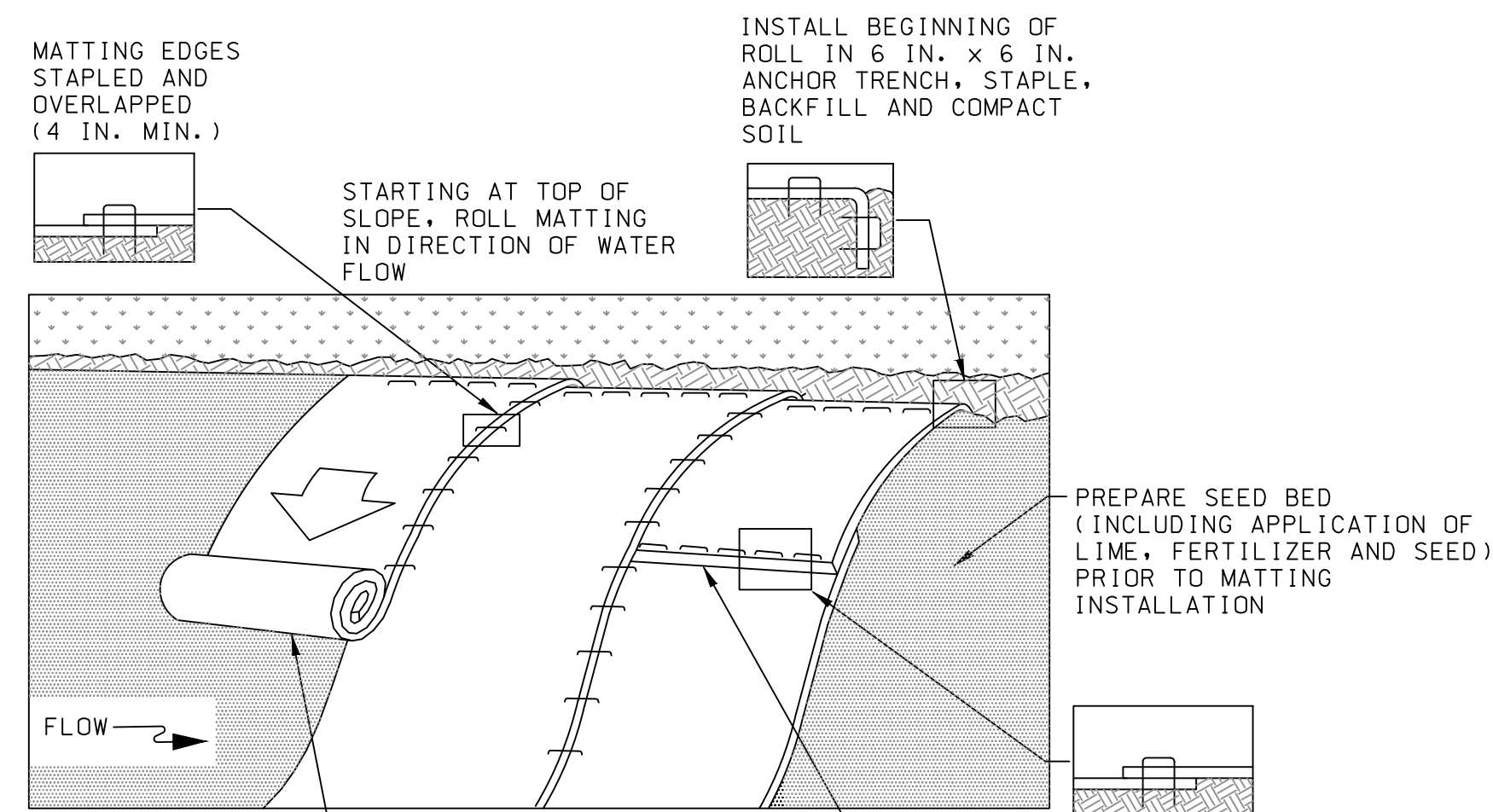
EXCAVATION FOR STONE FILL CHANNELS SHALL BE ITEM 206.1, COMMON STRUCTURE EXCAVATION, OR AS INDICATED IN THE DRAINAGE SUMMARY SHEETS.



NOTES:

1. CONTRACTOR MAY, AS REQUIRED, AND WITH APPROVAL OF ENGINEER, ADJUST THE PIPE OUTLET INVERTS AND SWALE INVERTS SHOWN ON THE PLANS TO ALLOW PROPER EROSION CONTROL PROTECTION AS SHOWN ON SHEETS.
2. TURF ESTABLISHMENT ALONG THE VEGETATED TREATMENT SWALE SHALL BE SEED MIX APPROVED BY ENGINEER (PAID UNDER ITEM 646.3).

CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
DETAILS (SHEET 7 OF 21) STORMWATER DETAILS 2			
REV	DATE	DESCRIPTION	BY
McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301			
SCALE: AS SHOWN		DESIGN: BEP	DT-07 14 OF 143
DRAWN: MJF		PROJECT: 18022.01	
CHECKED: EWM		DATE: SEPTEMBER 2021	



THE MATTING SHOULD NOT BE STRETCHED; IT MUST MAINTAIN GOOD SOIL CONTACT

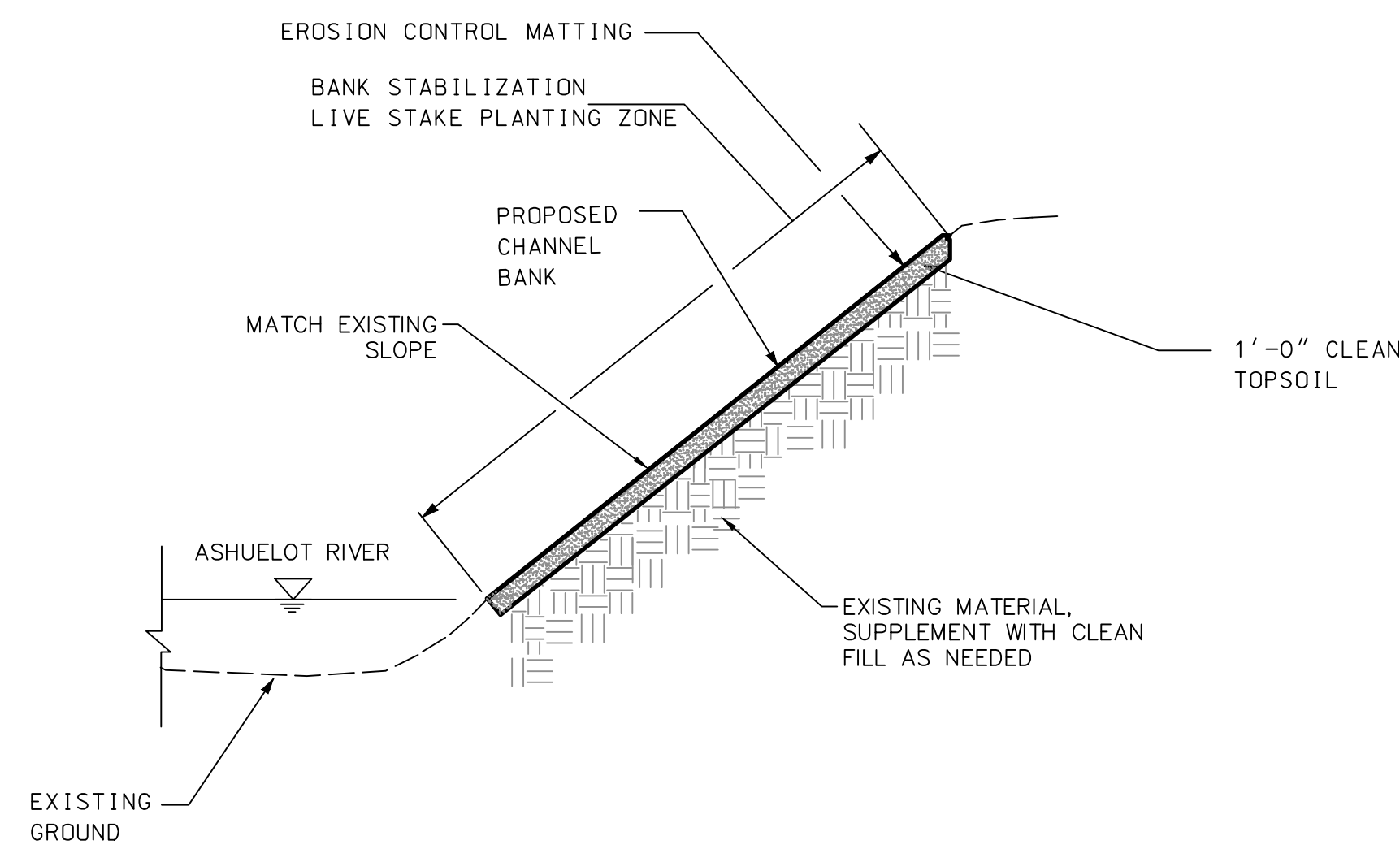
OVERLAP MATTING ENDS 6 IN. MIN. WITH THE UPSLOPE MATTING OVERLYING THE DOWNSLOPE MATTING (SHINGLE STYLE). STAPLE SECURELY.

REFER TO MANUF. RECOMMENDED STAPLING PATTERN FOR STEEPNESS AND LENGTH OF SLOPE WITH MATTING

NOTES:

- SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PRIOR TO INSTALLING THE MATTING.
- PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.
- SLOPE SURFACE SHALL BE FREE OF ROCKS, CLOUDS, STICKS, AND GRASS.
- MATTING SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY MATTING LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH MATTING.
- THE MATTING SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- AREAS WITH MATTING SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE MATTING AREA. DAMAGED OR DISPLACED MATTING SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.
- MATTING SHALL CONSIST OF "WILDLIFE FRIENDLY" OPTIONS SUCH AS NORTH AMERICAN GREEN SC150BN, AMERICAN EXCELSIOR COMPANY AEC PREMIER COCONUT FIBRENET, EAST COAST EROSION BLANKETS, LLC ECC-2B OR EQUIVALENT. WELDED PLASTIC AND PHOTO-BIODEGRADABLE PLASTIC SHALL NOT BE USED.

BANK STABILIZATION – EROSION CONTROL MATTING
N.T.S.



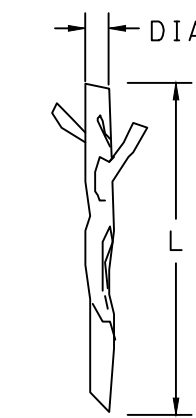
BANK STABILIZATION DETAILS

LIVE STAKE INSTALLATION:

- TAMP THE LIVE STAKE INTO THE GROUND AT RIGHT ANGLES TO THE SLOPE FACE.
- LIVE STAKES SHALL BE INSTALLED 2-3 FEET APART USING TRIANGULAR SPACING. STAKES SHOULD BE PLACED WITH 2 TO 4 STAKES PER SQUARE YARD.
- BUDS SHALL BE ORIENTED UP.
- FOUR FIFTHS OF THE LENGTH OF THE LIVE STAKE SHALL BE INSTALLED INTO THE GROUND AND SOIL FIRMLY PACKED AROUND IT AFTER INSTALLATION.
- STAKES THAT SPLIT DURING INSTALLATION SHALL BE REPLACED AT THE CONTRACTORS EXPENSE.
- AN IRON BAR CAN BE USED TO MAKE A PILOT HOLE IN FIRM SOIL. DRIVE THE LIVE STAKE INTO THE GROUND WITH A DEAD HAMMER (HAMMER HEAD FILLED WITH SHOT OR SAND).
- LIVE STAKES SHALL BE INSTALLED TO FORM A MIXED PATTERN OF SPECIES AS SPECIFIED IN THE PLANTING NOTES.

ACCEPTABLE LIVE STAKE SPECIES	SCIENTIFIC NAME
BLACK WILLOW	SALIX NIGRA
SILKY DOGWOOD	CORNUS AMOMUM
ALDER	ALNUS INCANA

NOTE: REFER TO PLANTING NOTES



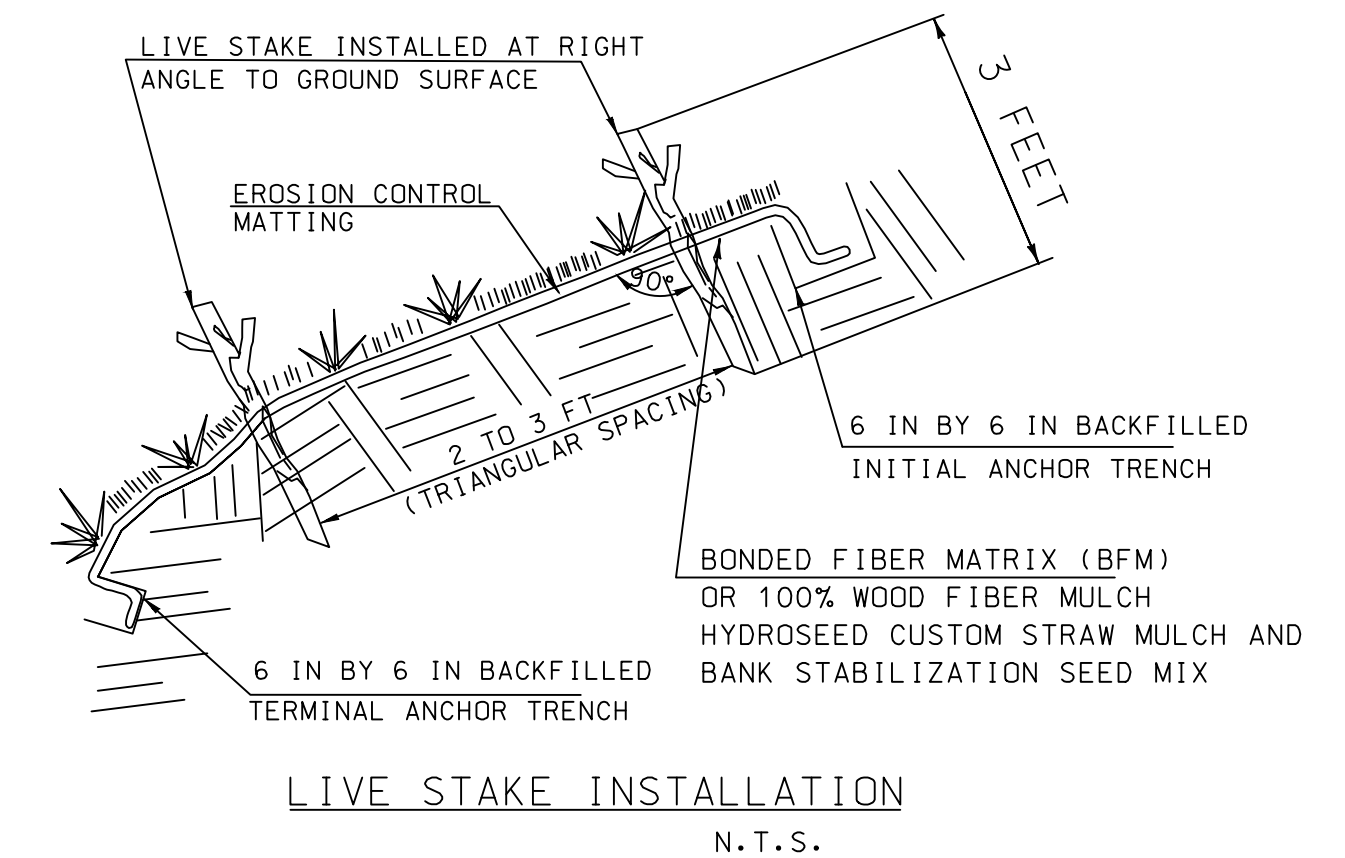
LIVE STAKE DETAIL

N.T.S.

LIVE STAKE GUIDELINES:

- LIVE STAKE CUTTINGS SHALL BE INSTALLED WITHIN THE BANK STABILIZATION PLANTING ZONE AS INDICATED ON THE PLANTING NOTES.
- LIVE STAKE CUTTINGS SHALL BE 0.5 TO 1.5 INCHES IN DIAMETER AND A MINIMUM OF THREE FEET LONG.
- CUTTINGS SHOULD BE DORMANT, UNDAMAGED, DISEASE AND INSECT FREE STOCK, AND FROM THE LIST OF ACCEPTABLE SPECIES PROVIDED ON THE PLANS.
- MATERIALS MUST HAVE SIDE BRANCHES CLEANLY REMOVED AND BARK INTACT.
- THE BASAL ENDS SHOULD BE CUT AT AN ANGLE FOR EASY INSERTION INTO THE SOIL. THE TOP SHOULD BE SQUARE. STAKES SHOULD BE PLANTED WITH BUTT-END INTO THE GROUND. BUDS SHOULD BE ORIENTED UP.
- MATERIALS SHALL BE SOAKED IN WATER A MINIMUM OF 10 DAYS IMMEDIATELY AFTER PREPARATION. MATERIALS SHOULD BE INSTALLED THE SAME DAY THAT THEY ARRIVE ON SITE. THE MATERIAL MUST NOT BE ALLOWED TO DRY OUT; KEEP MATERIALS IN WATER OR IN A COOL, SHADED, WET ENVIRONMENT PRIOR TO INSTALLATION.
- PLANTS SHALL BE BOTH CUT AND INSTALLED WHEN THEY ARE DORMANT; THAT IS, PRIOR TO BUD SWELL AND LEAF EMERGENCE IN THE SPRING AND AFTER LEAVES HAVE TURNED COLOR AND FALLEN OFF IN THE FALL. THE INSTALLATION PERIOD IN THE SPRING IS BETWEEN MARCH 1 AND APRIL 15, AND IN THE FALL BETWEEN OCTOBER 30 AND NOVEMBER 30.
- LIVE STAKES SHALL BE PAID FOR UNDER ITEM. 650.2 – LANDSCAPING

BANK STABILIZATION – LIVE STAKE INSTALLATION
N.T.S.



LIVE STAKE INSTALLATION

N.T.S.

BANK STABILIZATION PLANTING TABLE:

Zone	Location	Type	Acreage	Species	Common Name	Species Percent	Spacing	Total Quantity
Bank Stabilization	Area below top of bank	Live Stakes	0.06	Salix nigra	Black willow	33%	3 FT. On Center	200
				Cornus amomum	Silky dogwood	33%	3 FT. On Center	200
				Alnus incana	Alder	33%	3 FT. On Center	200
Totals						100%		600


BANK STABILIZATION SEED MIX:

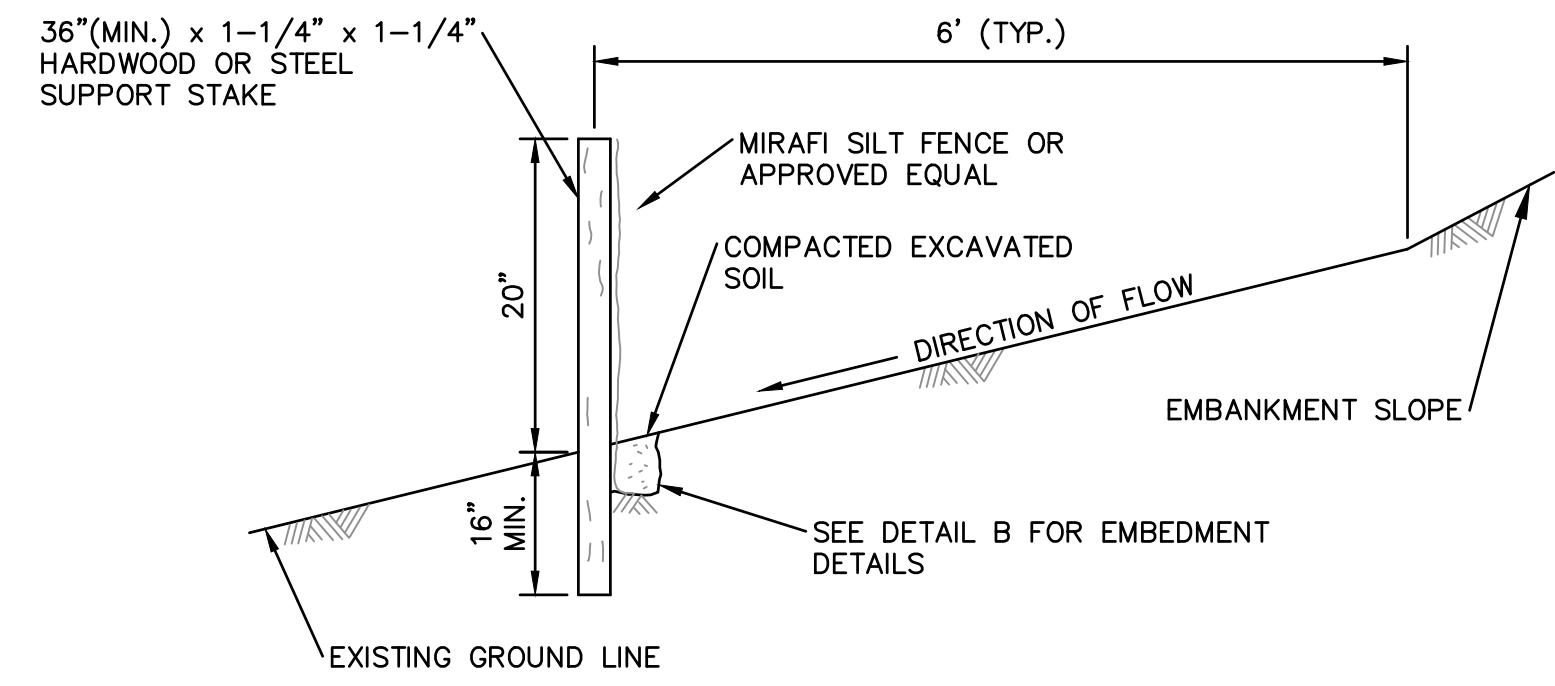
Common Name	Botanical Name	Percent (by weight)	Quantity per Acre (lbs.)
Little Bluestem	Schizachyrium scoparium	20%	8.2
Switchgrass	Panicum virgatum	33%	13.4
Wild Indigo	Baptista tinctoria	3%	1.2
Butterfly Milkweed	Asclepias tuberosa	12%	4.9
Heath Aster	Symphotrichum pilosum	15%	6.2
Round head Lespedeza	Lespedeza capitata	5%	2.1
Annual Rye	Lolium multiflorum	12%	5

SEEDING NOTES:

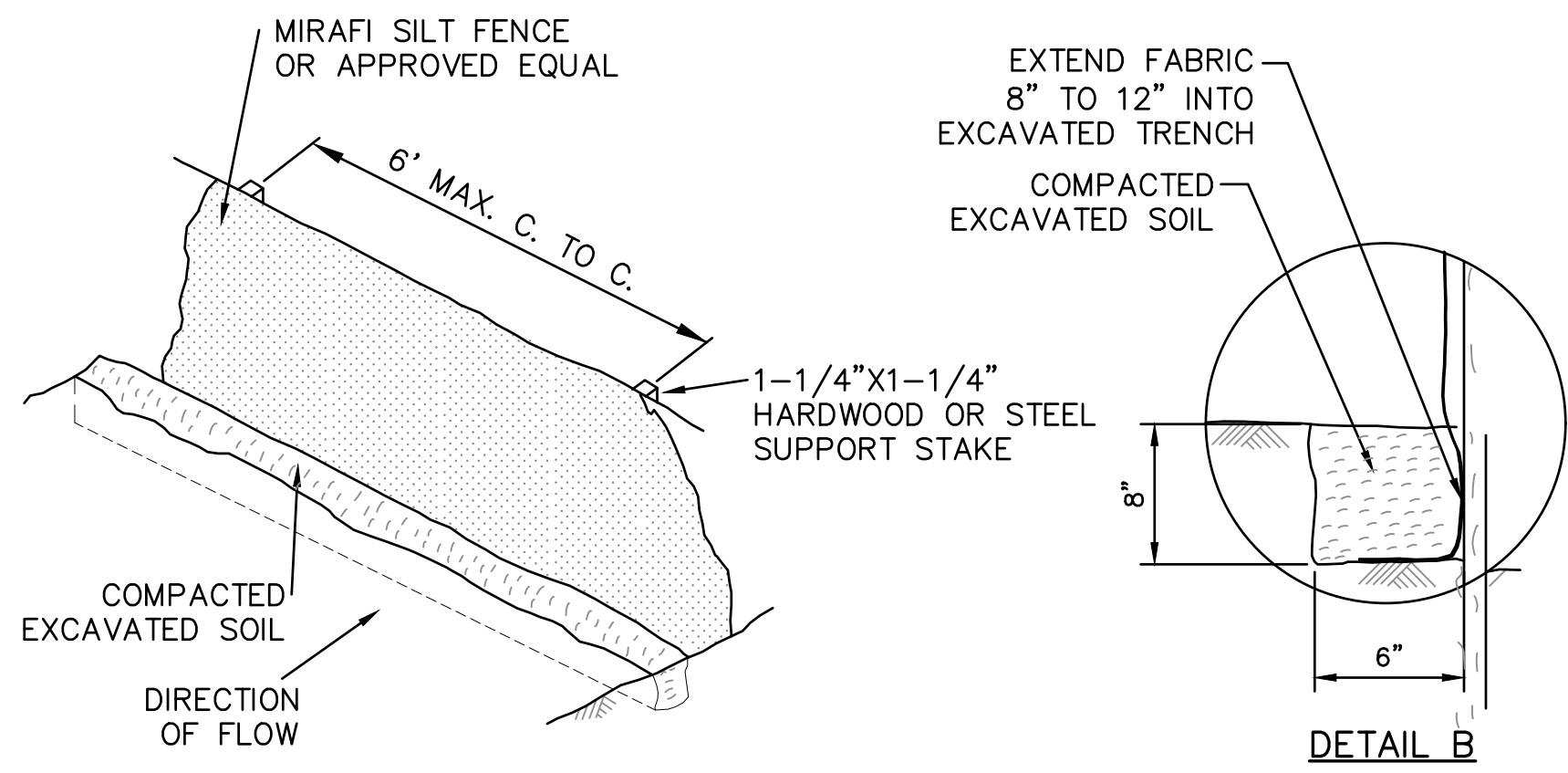
- THE PROPOSED BANK STABILIZATION AREA, AND ANY OTHER AREA OF SOIL DISTURBANCE WITHIN THE RIPARIAN BUFFER SHALL BE SEEDED WITH THE SPECIFIED BANK STABILIZATION SEED MIX.
- THE SEED BED IN RIPARIAN BUFFER AREAS SHALL BE PREPARED BY THE REMOVAL OF SOIL COMPACTION AS DIRECTED BY THE ENGINEER, FOLLOWED BY DISCING TO A MINIMUM DEPTH OF 6 INCHES.
- THE SEEDING PROGRAM SHALL INCLUDE THE APPLICATION AND INCORPORATION OF A SLOW RELEASE (NON-WATER SOLUBLE) FERTILIZER WITH A RATIO OF 0-10-20 AT A RATE OF 250 LBS/ACRE.
- SEED SHALL BE EVENLY SPREAD EITHER BY HAND OR MECHANICAL MEANS AT THE SPECIFIED RATE. THE PROPOSED METHOD OF SEEDING IS SUBJECT TO APPROVAL BY THE ENGINEER. THE SEED SHALL BE APPLIED SEPARATELY FROM THE FERTILIZER.
- IMMEDIATELY FOLLOWING SEEDING, SEED SHALL BE INCORPORATED INTO SOIL 1/4 TO 1/2 INCH USING A CHAIN OR TINE HARROW OR HAND RAKING. THE EQUIPMENT USED TO COMPLETE THIS TASK IS SUBJECT TO APPROVAL BY THE ENGINEER.
- SEEDING SHALL BE PAID FOR UNDER ITEM. 646.31 – TURF ESTABLISHMENT WITH MULCH AND TACKIFIERS.

BANK STABILIZATION PLANT NOTES

CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
DETAILS (SHEET 8 OF 21) BANK STABILIZATION DETAILS			
REV	DATE	DESCRIPTION	BY
 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301			
SCALE: AS SHOWN	DESIGN: BEP	DT-08 15 OF 143	
DRAWN: MJF	PROJECT: 18022.01		
CHECKED: EWM	DATE: SEPTEMBER 2021		

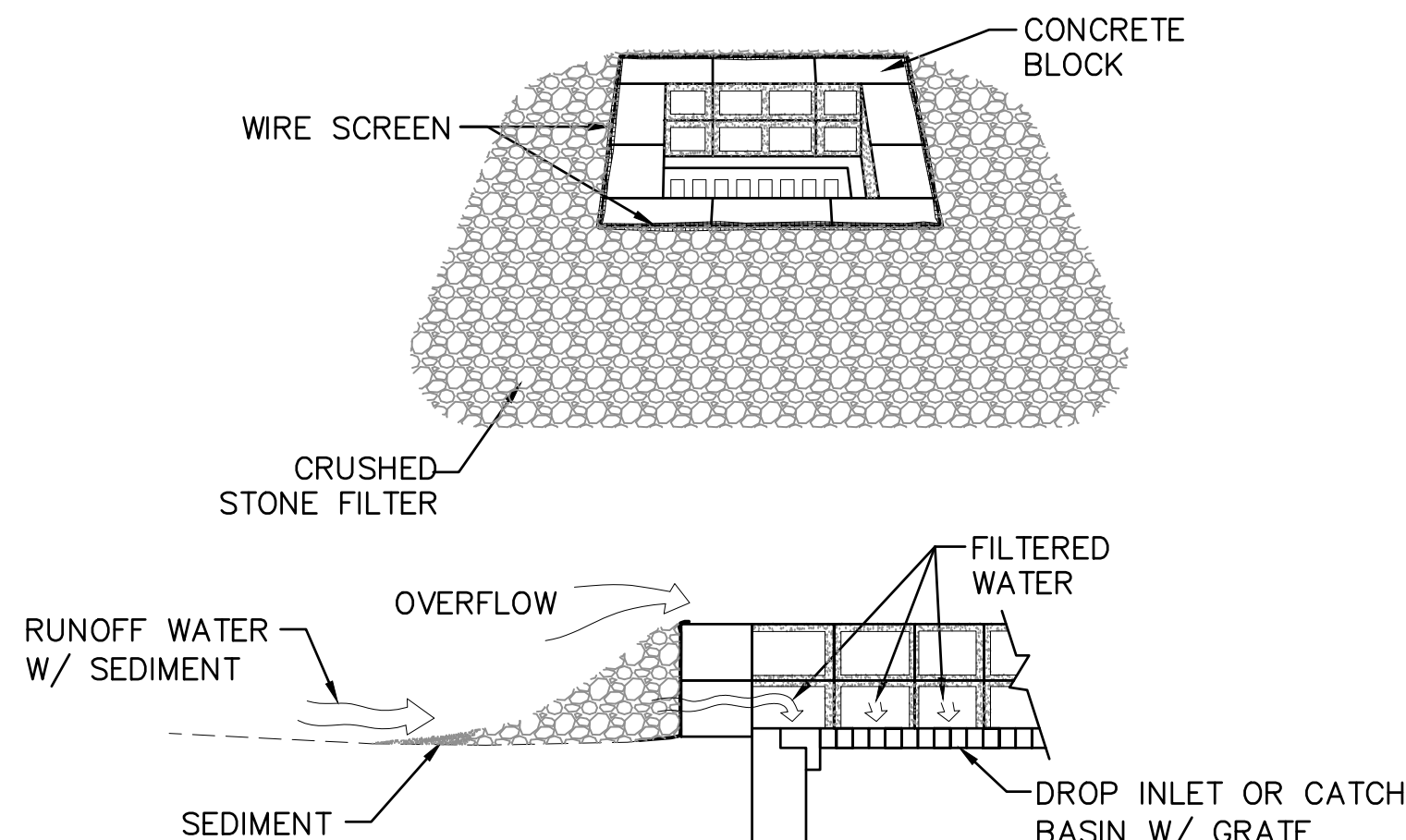


TOE OF SLOPE CONDITION

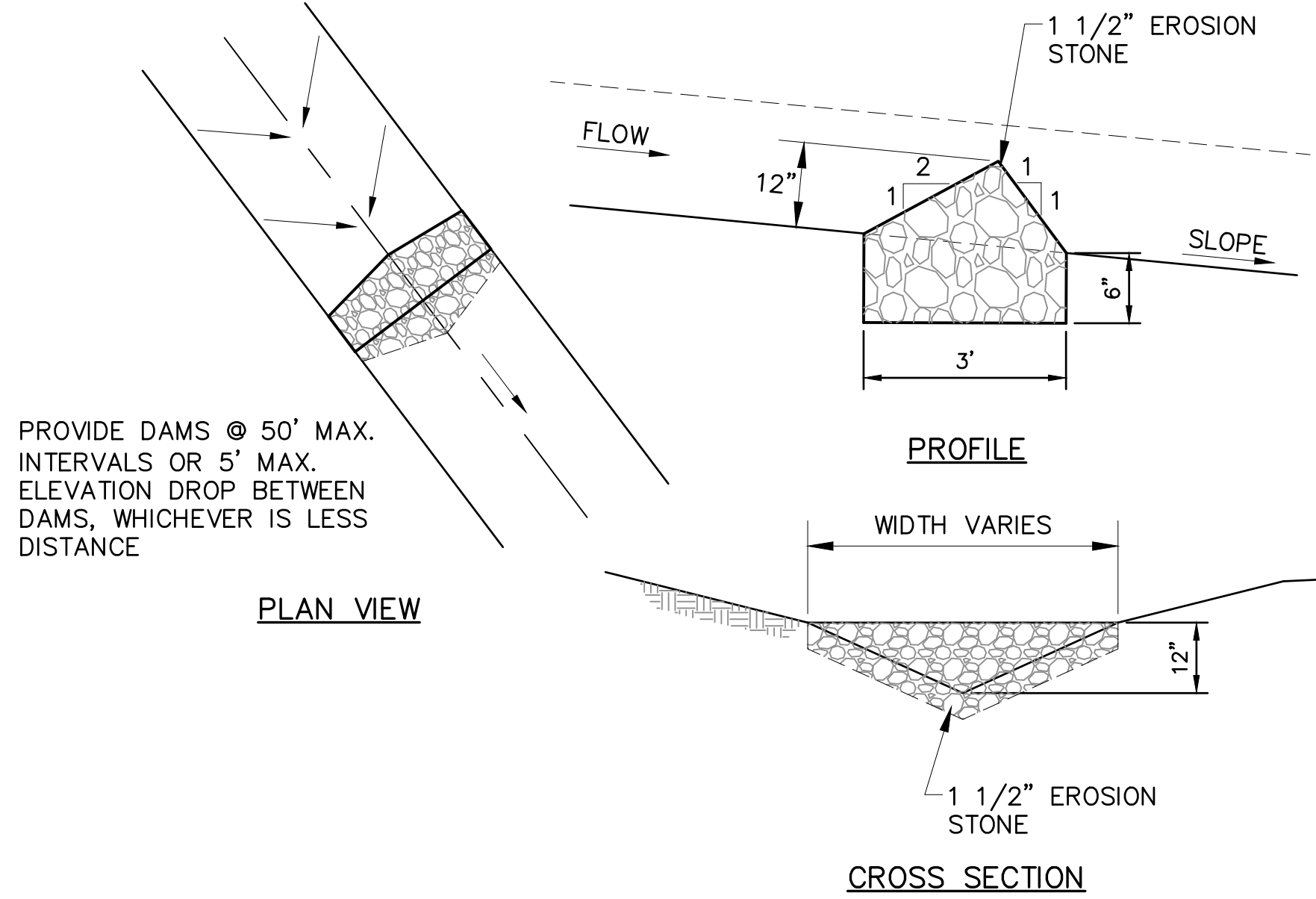


- NOTES:**
1. FILTER FABRIC SILT FENCE MUST BE INSTALLED AT LEVEL GRADE. BOTH ENDS OF EACH FENCE SECTION MUST BE EXTENDED AT LEAST 8 FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT.
 2. SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH ONE-HALF (1/2) THE ABOVE GROUND HEIGHT OF THE FENCE.
 3. ANY FENCE SECTION WHICH HAS BEEN UNDERMINED OR TOPPED MUST BE IMMEDIATELY REPLACED WITH A ROCK FILTER OUTLET.

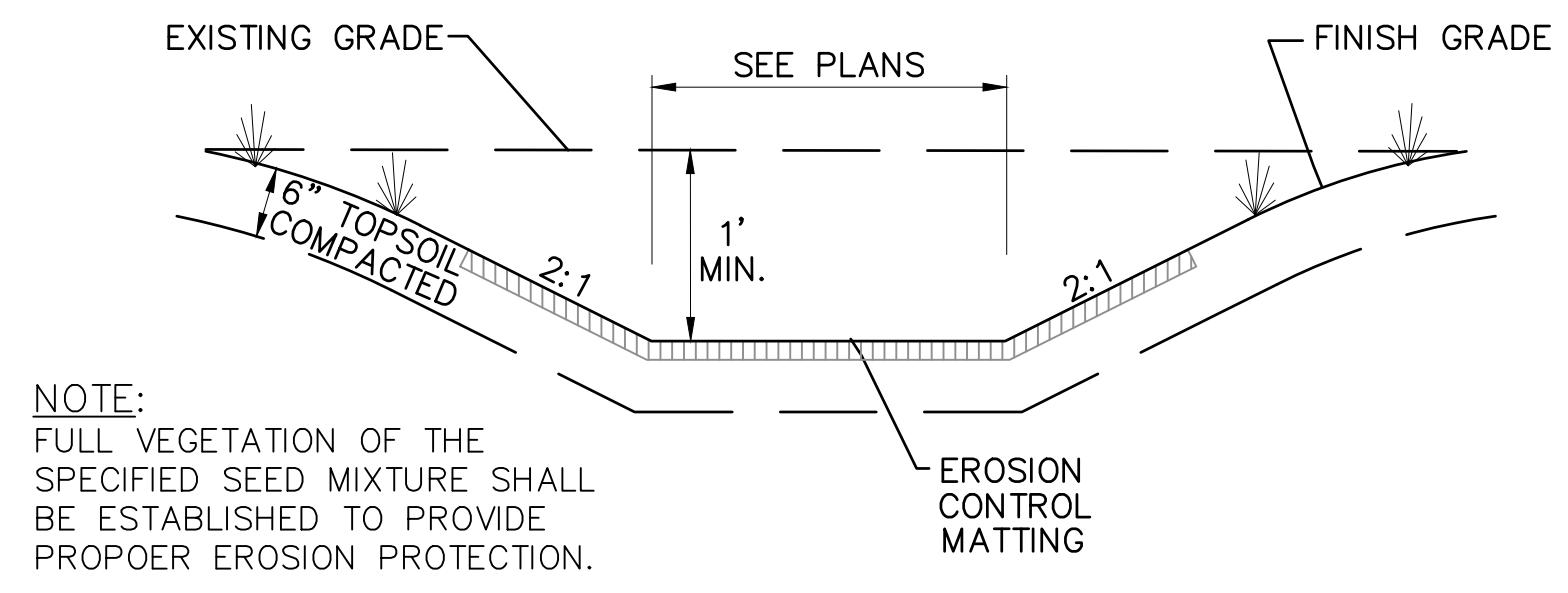
FILTER FABRIC SILT FENCE
NOT TO SCALE



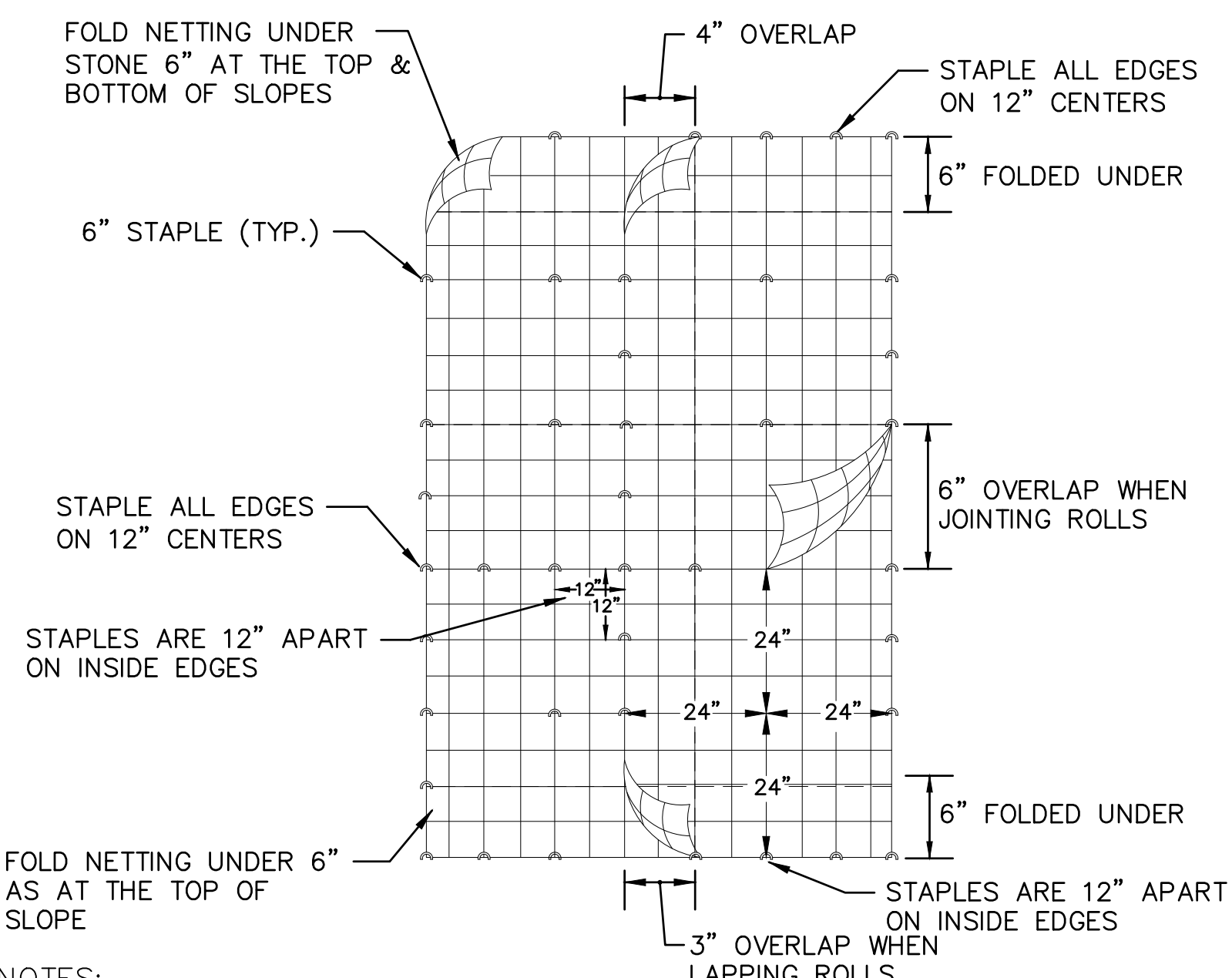
BLOCK & GRAVEL DROP INLET/CATCH BASIN (SEDIMENT FILTER) INLET PROTECTION
NOT TO SCALE



STONE GRADE STABILIZATION (CHECK DAM) STRUCTURES
NOT TO SCALE

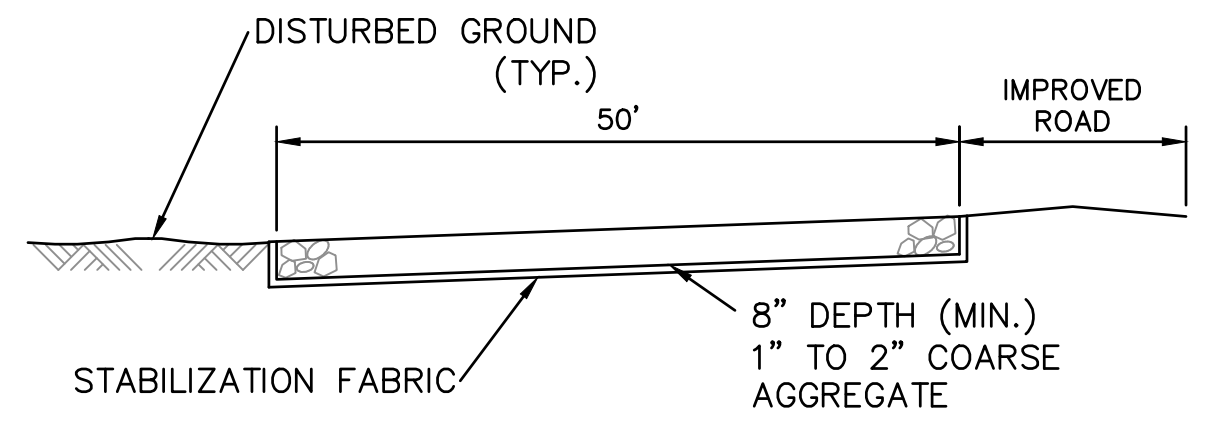


GRASS-LINED SWALE
NOT TO SCALE



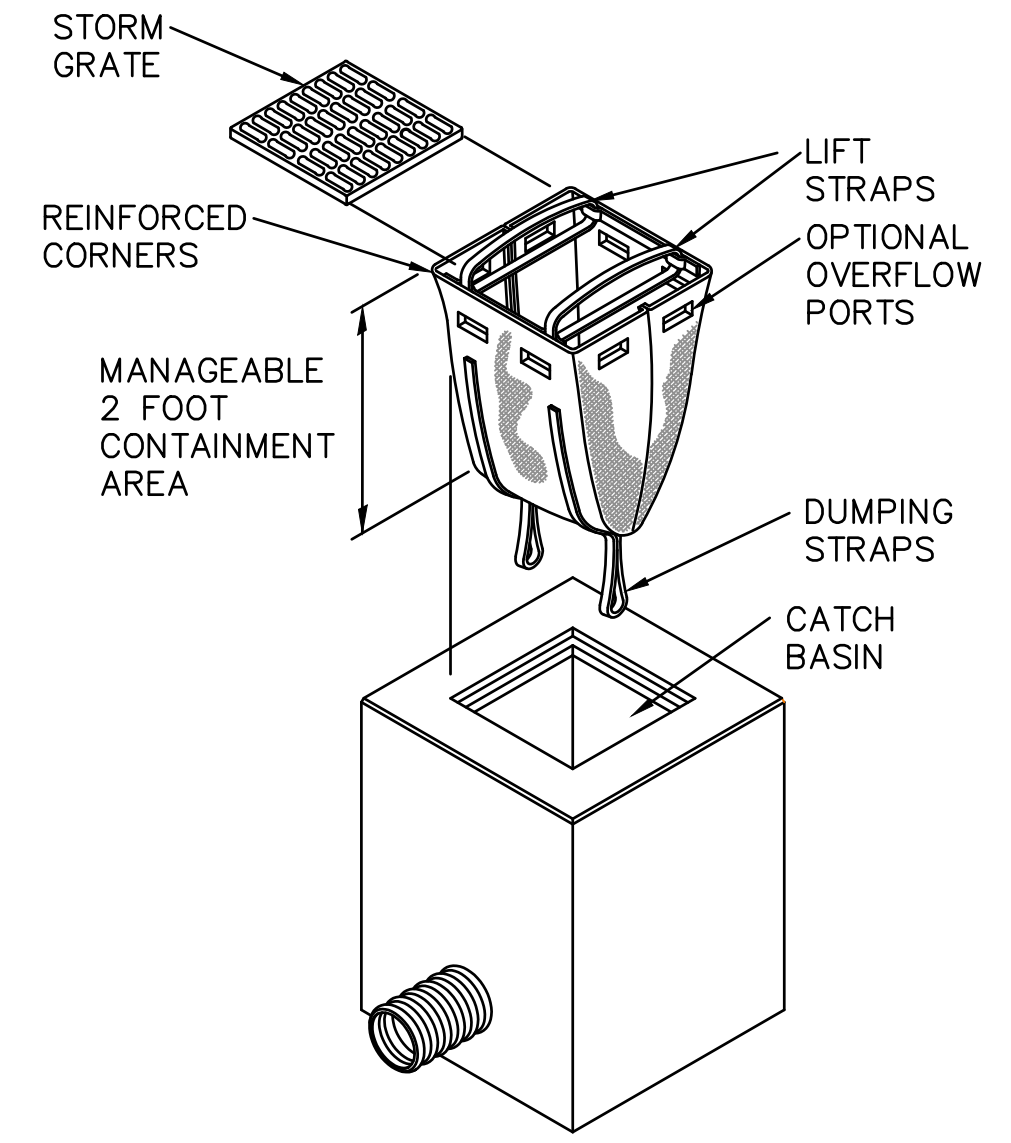
- NOTES:**
1. NO STAPLES TO BE OVER 24" APART CENTER TO CENTER
 2. MATTING SHALL CONSIST OF "WILDLIFE FRIENDLY" OPTIONS SUCH AS NORTH AMERICAN GREEN SC150BN, AMERICAN EXCELSIOR COMPANY AEC PREMIER COCONUT FIBRENET, EAST COAST EROSION BLANKETS, LLC ECC-2B OR EQUIVALENT. WELDED PLASTIC AND PHOTO-BIODEGRADABLE PLASTIC SHALL NOT BE USED.

MULCH NETTING INSTALLATION
NOT TO SCALE



STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE

- GENERAL NOTES:**
1. SILT FENCE SHALL CONSIST OF AN APPROVED PREFABRICATED SILT FENCE WITH FABRIC ATTACHED TO POSTS AND SHALL BE ASSEMBLED IN THE FIELD ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS. WIRE MESH REINFORCEMENT AND/OR CLOSER POST SPACING MAY BE ORDERED BY THE ENGINEER IN AREAS WHERE HIGH RUNOFF VOLUMES ARE ANTICIPATED, OR LOW SPOTS WHERE SEDIMENT WILL BE COLLECTED.
 2. PRIOR TO BEGINNING EARTHWORK OPERATIONS AT LOCATIONS DIRECTED BY THE ENGINEER, SILT FENCE SHALL BE CONSTRUCTED ALONG THE TOE OF PROPOSED EMBANKMENT AT THE LIMITS OF CLEARING.



CATCH BASIN FILTER
NOT TO SCALE

NOTE:
STABILIZED CONSTRUCTION ENTRANCE THICKNESS WILL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING NEW ROCK AND REMOVING "CLOGGED" ROCK AS NECESSARY. A STOCKPILE OF ROCK MATERIAL WILL BE STORED ON THE SITE FOR THIS PURPOSE. AT THE END OF EACH CONSTRUCTION DAY, ALL SEDIMENT DEPOSITED ON PUBLIC ROADWAYS WILL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE.

CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
DETAILS (SHEET 9 OF 21) EROSION CONTROL DETAILS 1			
REV	DATE	DESCRIPTION	BY
		McFarland Johnson	
53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301		SCALE: AS SHOWN	DESIGN: BEP
		DRAWN: MJF	PROJECT: 18022.01
		CHECKED: EWM	DATE: SEPTEMBER 2021
			DT-09 16 OF 143

EROSION CONTROL SPECIFICATIONS:

- SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN ACCORDANCE WITH "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3 – EROSION AND SEDIMENT CONTROL DURING CONSTRUCTION" 2008. THE CONTRACTOR SHALL HAVE REFERENCE TO THIS BOOK.
- RECOGNIZING THAT IMMEDIATE ATTENTION TO EROSION CONTROL PRACTICES DRAMATICALLY IMPROVES SOIL AND MOISTURE CONSERVATION AND REDUCES NEGATIVE IMPACTS ON WATER QUALITY. THE CONTRACTOR SHALL GIVE HIGH PRIORITY TO THE DAILY AND TIMELY INSTALLATION OF BOTH TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL MEASURES. IMMEDIATE INSTALLATION OF PRACTICES USUALLY REDUCES LONG TERM COSTS TO THE CONTRACTOR AND PROVIDES BENEFITS TO THE DEVELOPER AND THE PUBLIC GOOD.
- EROSION CONTROL PRACTICES ARE SHOWN ON THE PLANS WITH RESPECT TO LOCATION AS DETERMINED FROM EXISTING TOPOGRAPHY. CHANGES MAY BE INDICATED IN THE FIELD TO IMPROVE EROSION AND SEDIMENT CONTROL.
- CONSTRUCTION SHALL PROCEED UNIT BY UNIT TO FACILITATE INSTALLATION OF EROSION CONTROL MEASURES AND THE COMPLETION OF GRADING, SEEDING, AND LANDSCAPING AS SOON AS POSSIBLE WITHIN A UNIT. THIS PROCEDURE SHOULD RESULT IN THE EXPOSURE OF THE SMALLEST PRACTICAL LAND AREA AT ANY ONE TIME.
- AREAS ADJACENT TO STREAMS CALL FOR PARTICULAR ATTENTION WITH REGARD TO SILT INTERCEPTION. INSTALL SILT FENCES AS SHOWN ON PLAN AND IN DETAIL BEFORE EARTHWORK COMMENCES. ADDITIONAL FENCING MAY BE REQUIRED AS WORK CONTINUES.
- ALL DISTURBED AREAS AND ALL PROPOSED GRASSED AREAS SHALL HAVE TOPSOIL SPREAD (4" MINIMUM) AND BE LIMED, FERTILIZED, TILLED, SEEDED AND MULCHED. ALL SLOPES 3:1 (1 RISE ON 3 RUN) AND STEEPER SHALL HAVE MULCH HELD IN PLACE WITH NETTING (OR OTHER APPROVED BIODEGRADABLE MATTING MATERIAL), STAPLED AND STAKED. EACH AREA SHALL BE LIMED, FERTILIZED, PREPARED, SEEDED AND MULCHED (WITH ANCHORED NETTING AS REQUIRED) WITHIN 3 DAYS OF FINAL GRADING OR TEMPORARILY STABILIZED WITHIN 21 DAYS OF INITIAL DISTURBANCE. WHEN PERMANENT SEEDING CANNOT BE INSTALLED BY SEPTEMBER 15, TEMPORARY SEEDING AND MULCHING OF ALL DISTURBED AREAS SHALL BE INSTALLED IMMEDIATELY AND MAINTAINED IN THAT CONDITION UNTIL PERMANENT PRACTICES CAN BE INSTALLED IN THE FOLLOWING PLANTING SEASON.
- THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY TIME BEFORE DISTURBED AREAS ARE STABILIZED.
- ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE (SEE NOTE 10).
- TEMPORARY STABILIZATION OF DISTURBED AREAS:

SEEDBED PREPARATION: TILL THREE INCHES DEEP MIXING IN FERTILIZER. APPLY LIME 2 TONS/ACRE (100#/1,000 SQ. FT.)
FERTILIZE: UNIFORMLY APPLY NOT LESS THAN 300#/ACRE (7#/1,000 SQ. FT.) OF 10-20-20 OR EQUIVALENT.

SEEDING: SELECT APPROPRIATE SEEDING MIXTURE FROM TABLE 1 BELOW. SPREAD SEED UNIFORMLY. FIRM SOIL BY ROLLING OR PACKING; IF NOT FEASIBLE, THEN RAKE LIGHTLY TO COVER SEEDS.

MULCHING: MULCH ALL DISTURBED AREAS WITH 1-1/2 TO 2 TONS OF HAY OR STRAW PER ACRE (70-90#/1,000 SQ. FT.). ANCHOR ON ALL SLOPES 3:1 OR STEEPER AND FLATTER SLOPES SUBJECT TO WASH OR WIND BLOWN. USE JUTE (OR OTHER BIODEGRADABLE) NETTING. STAKING AND STAPLING MAY BE REQUIRED.

TABLE 1 – PLANT SELECTION AND SEEDING RATES

SPECIES	PER ACRE	PER 1000 SQ.FT.	REMARKS
WINTER RYE	2 BU OR 112 LBS.	2.5 LBS.	BEST FOR FALL SEEDING. SEED AUGUST 15 TO SEPTEMBER 15 FOR BEST COVER. SEED TO DEPTH OF ONE INCH.
OATS	2 1/2 BU OR 80 LBS.	2 LBS.	BEST FOR SPRING SEEDINGS. LATER THAN MAY 15 FOR SUMMER PROTECTION. SEED TO DEPTH OF ONE INCH.
ANNUAL RYE	40 LBS.	1 LB.	GROWS QUICKLY, BUT IS OF SHORT GRASS DURATION USE WHERE APPEARANCES ARE IMPORTANT. COVER SEED WITH NO MORE THAN 1/4 INCH OF SOIL. WITH MULCH, SEEDING MAY BE DONE THROUGHOUT GROWING SEASON. OTHERWISE SEED EARLY SPRING OR BETWEEN AUGUST 15 & SEPTEMBER 15.

10. PERMANENT STABILIZATION OF DISTURBED AREAS:

SEED BED PREPARATION: TOPSOIL (SANDY LOAM, LOAM, OR SILT LOAM), FRIABLE, FREE OF TREE ROOTS, WEEDS, STONES MORE THAN 1-1/2 INCHES IN DIAMETER OR LENGTH SHALL BE PLACED OVER ALL DISTURBED AREAS IN A 4" (MINIMUM) THICK LAYER.

TOPSOIL: TOPSOIL SHALL BE FREE OF HERBICIDES AND TOXIC MATERIALS. TILL THREE INCHES DEEP MIXING IN THE FERTILIZER AND LIME. APPLY LIME AT RATES INDICATED IN TABLE "A".

SEEDING: SELECT APPROPRIATE SEEDING MIXTURE FROM TABLE "C". SPREAD SEED UNIFORMLY. FIRM SOIL BY ROLLING OR PACKING; IF NOT FEASIBLE, THEN RAKE LIGHTLY TO COVER SEEDS.

MULCHING: MULCH ALL DISTURBED AREAS WITH 1-1/2 TO 2 TONS OF HAY OR STRAW PER ACRE (70 - 90#/1,000 SQ. FT.). ANCHOR MULCH ON ALL SLOPES 3:1 OR STEEPER AND ON FLATTER SLOPES SUBJECT TO WASH (WATERWAYS AND/OR WINDBLOWN) USING BIODEGRADABLE NETTING (OR OTHER APPROVED BIODEGRADABLE MATTING MATERIAL), WITH STAKING AND STAPLING.

EXISTING SOIL pH	LIMESTONE TO BE ADDED	
	TONS/ACRE	POUNDS/CY
4.0-4.4	3	12
4.5-4.9	2	8
5.0-5.4	1	4
UNKNOWN	2	8

TABLE "C" – SEEDING GUIDE

USE	SEEDING MIXTURE 1/	SOIL DRAINAGE			
		DROUGHTY	WELL DRAINED	MODERATELY WELL DRAINED	POORLY DRAINED
STEEP CUTS AND FILLS, BORROW AND DISPOSAL AREAS	A	FAIR	GOOD	GOOD	FAIR
	B	POOR	GOOD	FAIR	FAIR
	C	POOR	GOOD	EXCELLENT	GOOD
	D	FAIR	FAIR	GOOD	EXCELLENT
	E	FAIR	EXCELLENT	EXCELLENT	POOR
WATERWAYS, EMERGENCY SPILLWAYS, AND OTHER CHANNEL WITH FLOWING WATER	A	GOOD	GOOD	GOOD	FAIR
	C	GOOD	EXCELLENT	EXCELLENT	FAIR
	D	GOOD	EXCELLENT	EXCELLENT	FAIR
	D	GOOD	EXCELLENT	EXCELLENT	FAIR
LIGHTLY USED PARKING LOTS, ODD AREAS, UNUSABLE LANDS, AND LOW INTENSITY USE RECREATION SITES	A	GOOD	GOOD	GOOD	FAIR
	B	GOOD	GOOD	FAIR	POOR
	C	GOOD	EXCELLENT	EXCELLENT	FAIR
	D	FAIR	GOOD	GOOD	EXCELLENT
PLAY AREAS AND ATHLETIC FIELDS. (TOPSOIL IS ESSENTIAL FOR GOOD TURF.)	F	FAIR	EXCELLENT	EXCELLENT	2/
	G	FAIR	EXCELLENT	EXCELLENT	2/
GRAVEL PIT – SEE PM-NH-24 RECOMMENDATIONS REGARDING RECLAMATION OF SAND AND GRAVEL PITS. *					

1/ REFER TO SEEDING MIXTURES AND RATES IN TABLE "D".
 2/ POORLY DRAINED SOILS ARE NOT DESIRABLE FOR USE AS PLAYING AREAS AND ATHLETIC FIELDS.

* SEE "VEGETATING NEW HAMPSHIRE SAND AND GRAVEL PITS; TECHNICAL NOTE PM-NH-24, UNITED STATES DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE, REVISION APRIL, 1991.

- TEMPORARY EROSION CONTROL MEASURES SHALL NOT BE REMOVED UNTIL ALL DISTURBED AREAS HAVE BEEN STABILIZED. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
 - BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
 - A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
 - A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH STONE OR RIPRAP HAS BEEN INSTALLED; OR
 - EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
- REFER TO "EROSION AND SEDIMENT CONTROL PLAN" PRIOR TO ANY SITE DISTURBANCE. CONTACT ENGINEER FOR COPIES OF PLAN.

INSPECTIONS: THE ENGINEER SHALL BE CONTACTED ON A REGULAR BASIS TO INSPECT ALL EROSION CONTROL PRACTICES AS WELL AS THE MAINTENANCE OF THE EROSION CONTROL COMPONENTS. REFER TO CONSTRUCTION SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. EROSION CONTROL PRACTICES SHALL BE IN STRICT ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS.
- ALL TREATMENT SWALES, DITCHES, AND LEVEL LIP SPREADERS SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
- FOR SPECIAL WINTER CONSTRUCTION CONSIDERATIONS, THE CONTRACTOR SHALL REFER TO THE "EROSION & SEDIMENT CONTROL PLAN".
- THIS PROJECT SHALL BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430.53 AND CHAPTER AGR 3800 RELATIVE TO SPECIES.
- RUNOFF MUST BE DIRECTED TO TEMPORARY PRACTICES UNTIL STORMWATER BMPS ARE STABILIZED.
- CUT AND FILL SLOPES MUST BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.

TABLE "D" – MIXTURES & RATES

MIXTURE	POUNDS PER ACRE	POUNDS PER 1,000 SQ. FT.
A. TALL FESCUE	20	0.45
CREEPING RED FESCUE	20	0.45
REDFEED	2	0.05
TOTAL	42	0.95
B. TALL FESCUE	15	0.35
CREEPING RED FESCUE	10	0.25
CROWN VETCH OR	15	0.35
FLATPEA	30	0.75
TOTAL	40 or 55	0.95 or 1.35
C. TALL FESCUE	20	0.45
CREEPING RED FESCUE	20	0.45
BIRDSFOOT TREFLOIL	8	0.20
TOTAL	48	1.10
D. BIRDSFOOT TREFLOIL	20	0.50
REDFEED	10	0.20
TOTAL	30	0.70
E. TALL FESCUE	20	0.45
FLATPEA	30	0.75
TOTAL	50	1.20
F. CREEPING RED FESCUE 1/	50	1.15
KENTUCKY BLUEGRASS 1/	50	1.15
TOTAL	100	2.30
G. TALL FESCUE 1/	150	3.60

1/ FOR HEAVY USE ATHLETIC FIELDS CONSULT THE UNIVERSITY OF NEW HAMPSHIRE COOPERATIVE EXTENSION TURF SPECIALIST FOR CURRENT VARIETIES AND SEEDING RATES.

OTHER SEED MIXTURES AND SEEDING RATES AS RECOMMENDED BY THE USDA – NATURAL RESOURCES CONSERVATION SERVICE MAY BE USED WITH PRIOR WRITTEN PERMISSION FROM THE ENGINEER.

CONSTRUCTION SEQUENCE:

- THE CONTRACTOR SHALL CONDUCT A PRE-CONSTRUCTION CONFERENCE WITH CITY OFFICIALS PRIOR TO ANY WORK COMMENCING ON SITE.
- FELL AND CLEAR TREES, AS REQUIRED. PLACE JOB TRAILER AT SPECIFIED LOCATION AND INSTALL CONSTRUCTION ENTRANCE(S). STABILIZE THE CONSTRUCTION ENTRANCE(S) WITH COARSE AGGREGATE 8 INCHES (MINIMUM) IN DEPTH, ON TOP OF A GEOTEXTILE, TO PREVENT OFF-SITE TRACKING BY VEHICLES AND EQUIPMENT.
- INSTALL SILT FENCE AT ALL LOCATIONS INDICATED ON PLAN AND AT OTHER LOCATIONS AS DETERMINED BY THE ENGINEER. INSTALL OTHER TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO EARTHWORK COMMENCING.
- GRUB SITE AND DISPOSE OF DEBRIS, AS NECESSARY; CONTRACTOR TO LEGALLY DISPOSE OF DEBRIS OFF THE SITE.
- STOCKPILE TOPSOIL AND INSTALL ASSOCIATED EROSION CONTROL MEASURES, I.E., SILT FENCE, AND MULCH.
- PONDS AND SWALES SHALL BE INSTALLED EARLY ON IN THE CONSTRUCTION SEQUENCE (BEFORE ROUGH GRADING THE SITE) AND SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
- INSTALL CLOSED DRAINAGE SYSTEM.
- RECLAIM/REMOVE EXISTING PAVEMENT AND SELECT MATERIAL AND PLACE SELECT MATERIALS AND PAVEMENT FOR THE LIMITS OF THE PROPOSED ROADWAY IMPROVEMENTS. THE LIMITS OF THE ROADWAY IMPROVEMENTS SHALL BE STABILIZED WITHIN 72 HOURS AFTER GRADING.
- INSPECT ALL DISTURBED AREAS ON A WEEKLY BASIS AND AFTER EVERY ONE-HALF INCH OF RAINFALL. FOLLOWING THESE INSPECTIONS, INSTALL ANY AND ALL TEMPORARY DRAINAGE, EROSION, AND SEDIMENT CONTROL PRACTICES AS INDICATED OR AS REQUIRED, I.E., DIVERSION CHANNELS, BERMS, DRAINS, DITCHES, SILT SACKS, SILT FENCES, SEED AND MULCH, OR ANY OTHER BEST MANAGEMENT PRACTICES AS RECOMMENDED AND SPECIFIED IN THE "STORMWATER MANAGEMENT AND EROSION AND SEDIMENT CONTROL HANDBOOK FOR URBAN AND DEVELOPING AREAS OF NEW HAMPSHIRE" (USDA – SOIL CONSERVATION SERVICE).
- PLACE TOPSOIL, COMPLETE PERMANENT FERTILIZING, LIMING, SEEDING AND MULCHING, AND INSTALL LANDSCAPE PLANTING.
- CLEAN AND RESTORE SILT DESTINATION SITES. REMOVE OTHER EROSION CONTROL PRACTICES ON A TIMELY BASIS AS PERMANENT MEASURES TAKE HOLD. SPOT FERTILIZE, SEED, AND MULCH AS REQUIRED. NO RUNOFF SHALL BE DIRECTED TO THE PERMANENT MEASURES UNTIL THEY ARE ESTABLISHED.
- INSPECT AND MAINTAIN GRADING, EROSION CONTROL AND SEDIMENT CONTROL PRACTICES WEEKLY AND INSPECTION SHOULD OCCUR AFTER EVERY 0.5" OR GREATER RAINFALL WITHIN A 24 HOUR PERIOD.
- REFER TO "EROSION AND SEDIMENT CONTROL PLAN" FOR ADDITIONAL DETAILS RELATIVE TO THE REQUIRED CONSTRUCTION SEQUENCE. MAINTENANCE OF ALL EROSION CONTROL COMPONENTS SHALL BE AN ONGOING PRACTICE AND IN STRICT ACCORDANCE WITH THE APPROVED PLAN.

SPECIAL WINTER CONSIDERATIONS


THE MAJOR FOCUS OF WINTER EROSION AND SEDIMENT CONTROL IS THE PERIODS OF INTENSE RUNOFF ASSOCIATED WITH MID-WINTER THAWS AND RAINSTORMS, AND THE SPRING MELT.

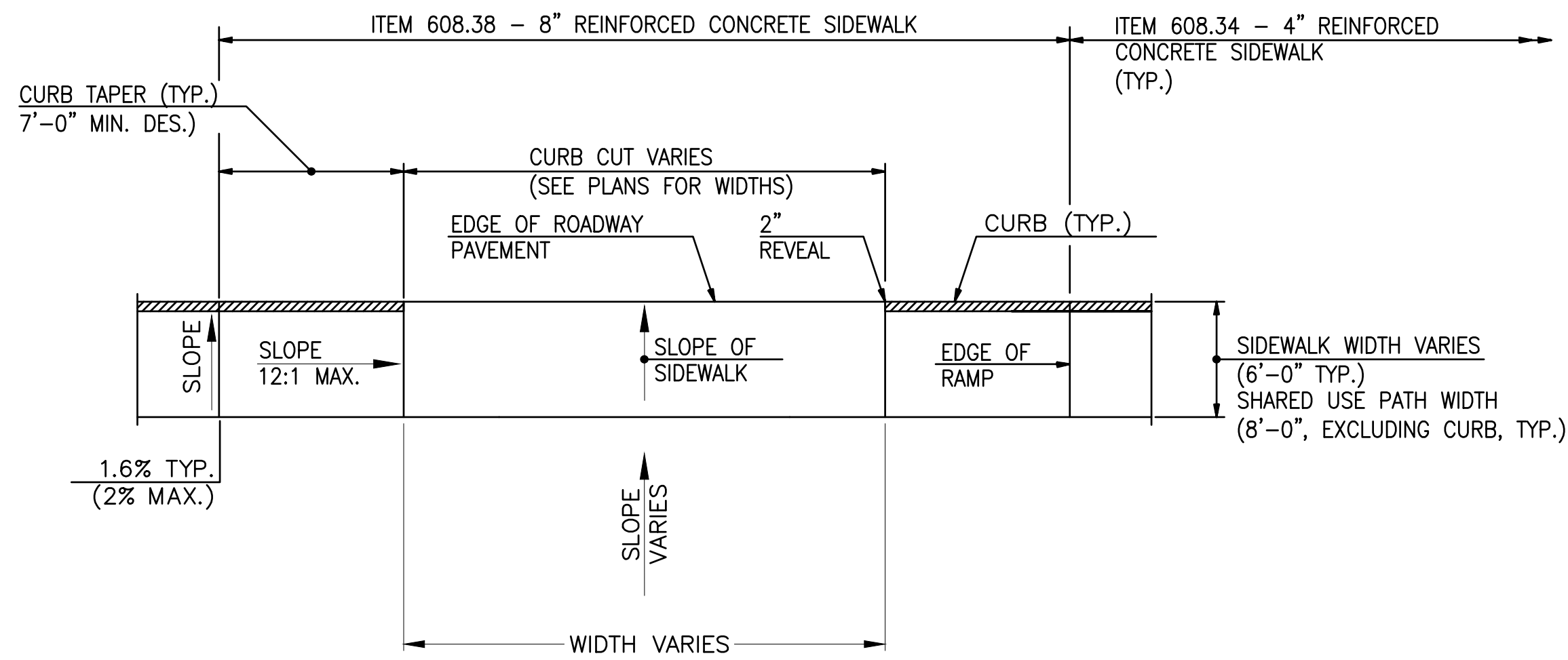
FROZEN GROUND MAKES THE INSTALLATION AND MAINTENANCE OF EROSION CONTROL MEASURES VERY DIFFICULT. INSTALLATION SHOULD TAKE PLACE WELL BEFORE THE GROUND FREEZES. MAINTENANCE IN WINTER WILL BE MUCH MORE TIME CONSUMING AND DIFFICULT THAN IN THE SUMMER. THE OVERALL CONSTRUCTION SCHEDULE AND THE WEEKLY WORK SCHEDULE WILL BE DEVELOPED TO INCREASE TIME, EFFORT, AND MANPOWER DEVOTED TO MAINTAINING THE EROSION AND SEDIMENT CONTROL MEASURES.

INTENSE RUNOFF IN MID-WINTER THAWS AND RAINSTORMS, AND THE SPRING MELT PERIOD, CAN RESULT IN MORE SEVERE EROSION AND SEDIMENTATION PROBLEMS THAN RUNOFF FROM SUMMER STORMS. THE SOIL IS OFTEN COMPLETELY SATURATED WITH WATER, AND IS ALSO OFTEN UNDERLAIN BY A FROST LAYER. BOTH OF THESE FACTORS RESULT IN A GREATER PERCENTAGE OF THE RAIN OR MELTWATER RUNNING OVER THE GROUND SURFACE. WINTER AND SPRING RAINSTORMS ARE OFTEN HEAVIER AND MORE INTENSE THAN SUMMER SHOWERS. FOR THESE REASONS, EROSION AND SEDIMENTATION CAN BE ESPECIALLY SEVERE IN MID-WINTER THAWS AND THE SPRING MELT.

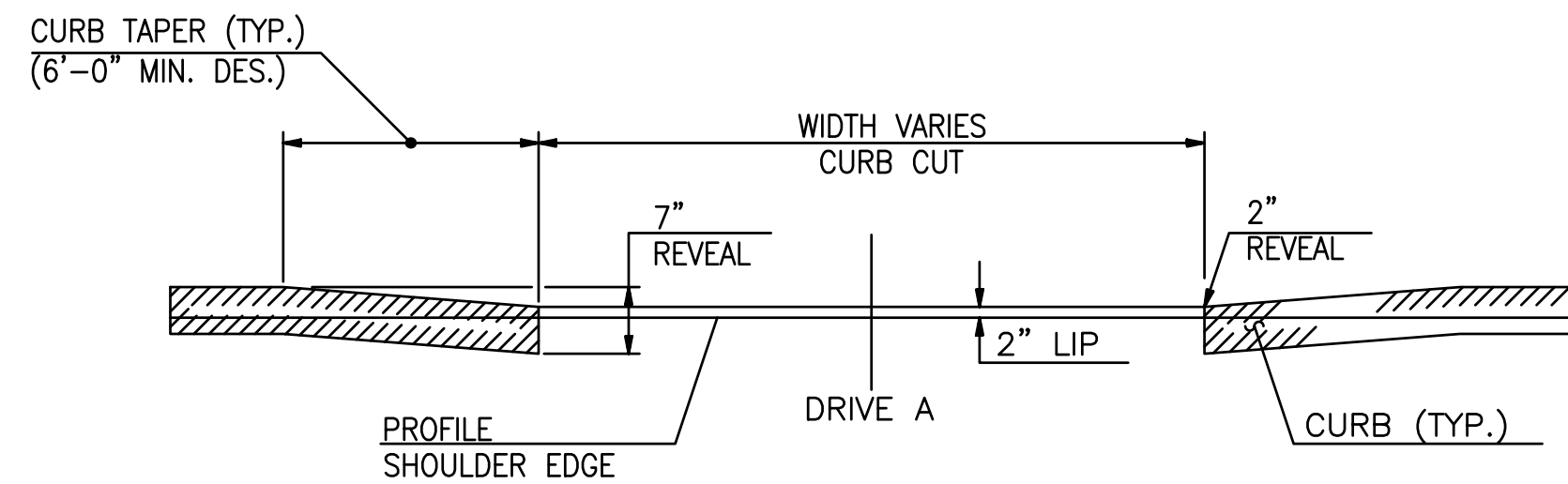
1. CONTROL MEASURES FOR WINTER CONSTRUCTION:

- ALL PROPOSED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, 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 ELSEWHERE. 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;
 - ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS; AND
 - AFTER OCTOBER 15TH, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF GRAVEL PER NHDOT ITEM 304.2.
 - MINIMIZE DISTURBED AREA AND TIME OF DISTURBANCE: DISTURBED AREA AND LENGTH OF DISTURBANCE SHALL BE MINIMIZED ESPECIALLY BETWEEN OCTOBER 15TH AND MAY 1ST.
 - GRASSED OR RIP RAPPED SWALES AND DITCHES: INSTALLATION WILL OCCUR BEFORE GROUND FREEZES. CHANNELS ARE TO BE STABILIZED WITH STONE, RIPRAP, OR VEGETATION IMMEDIATELY. INSPECTIONS ARE TO BE FREQUENT WITH REMOVAL OF ANY FLOW BLOCKAGE CAUSED BY ICE OR SEDIMENT.
 - MULCHING: MULCH ALONE SHOULD NOT BE CONSIDERED AN ADEQUATE EROSION AND SEDIMENT CONTROL TECHNIQUE FOR AREAS THAT ARE DISTURBED IN THE WINTER OR SPRING. MULCH IS EASILY WASHED AWAY BY INTENSE RUNOFF FLOWING OVER SATURATED OR FROZEN SOIL. IT IS ESSENTIAL THAT MULCH BE LAID DOWN IN SUCH A WAY THAT IT WILL NOT BLOW OR WASH AWAY.
 - SILT FENCE: INSTALLATION IS REQUIRED BEFORE THE GROUND FREEZES, OTHERWISE STAKES WILL BE DIFFICULT TO DRIVE. INSPECT FREQUENTLY AND REMOVE ANY COLLECTED SEDIMENT PERIODS IN ORDER TO PROVIDE AS MUCH CAPACITY AS POSSIBLE.
 - SNOW FENCE: INSTALLATION IS REQUIRED BEFORE THE GROUND FREEZES OTHERWISE STAKES WILL BE DIFFICULT TO DRIVE. FENCES MUST BE PLACED LIBERALLY AROUND THE WORK SITE TO KEEP SOIL DISTURBANCE TO AN ABSOLUTE MINIMUM.
 - STONE CHECK DAMS: PER DETAIL THE PLACEMENT WILL OCCUR IN SWALES AND DITCHES AFTER FINAL GRADING AND IS TO BE MAINTAINED UNTIL THE SITE IS FULLY STABILIZED.
2. INSPECTION AND MAINTENANCE
- INSPECTION OF EROSION AND SEDIMENT CONTROL MEASURES IS REQUIRED MORE FREQUENTLY IN THE WINTER AND SPRING THAN IN THE SUMMER. CAREFUL ATTENTION MUST BE GIVEN TO WEATHER PREDICTIONS. INSPECTION OF ALL CONTROL MEASURES WILL BE ONGOING TO ENSURE THAT STRUCTURES WILL MANAGE THE POTENTIALLY HEAVY AND INTENSE RUNOFF. CONSTANT MAINTENANCE OF CRITICAL CONTROL MEASURES MAY BE NECESSARY DURING THE WINTER AND EARLY SPRING TO PREVENT FAILURE OR OVERLOADING OF CONTROL MEASURES. A SECOND LINE OF CONTROL WILL BE QUICKLY INSTALLED IF PROBLEMS OCCUR. A SUBSTANTIAL AMOUNT OF TIME, EQUIPMENT, AND MANPOWER SHALL BE DEVOTED TO EROSION AND SEDIMENT CONTROL.
3. FOLLOW-UP
- INSTALLATION OF PERMANENT VEGETATIVE CONTROLS WILL BE REQUIRED AS EARLY AS IS PRACTICAL AT THE BEGINNING OF THE GROWING SEASON.

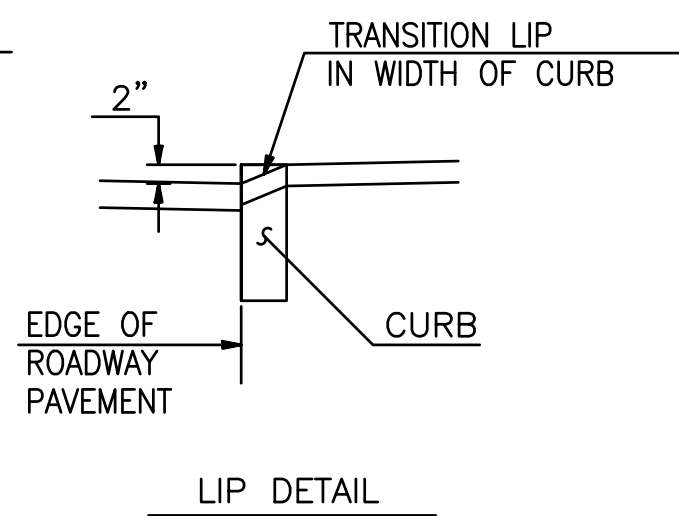
CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
DETAILS (SHEET 10 OF 21) EROSION CONTROL DETAILS 2			
REV	DATE	DESCRIPTION	BY
 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301			
SCALE: AS SHOWN		DESIGN: BEP	DT-10 17 OF 143
DRAWN: MJF		PROJECT:18022.01	
CHECKED: EWM		DATE:SEPTEMBER 2021	



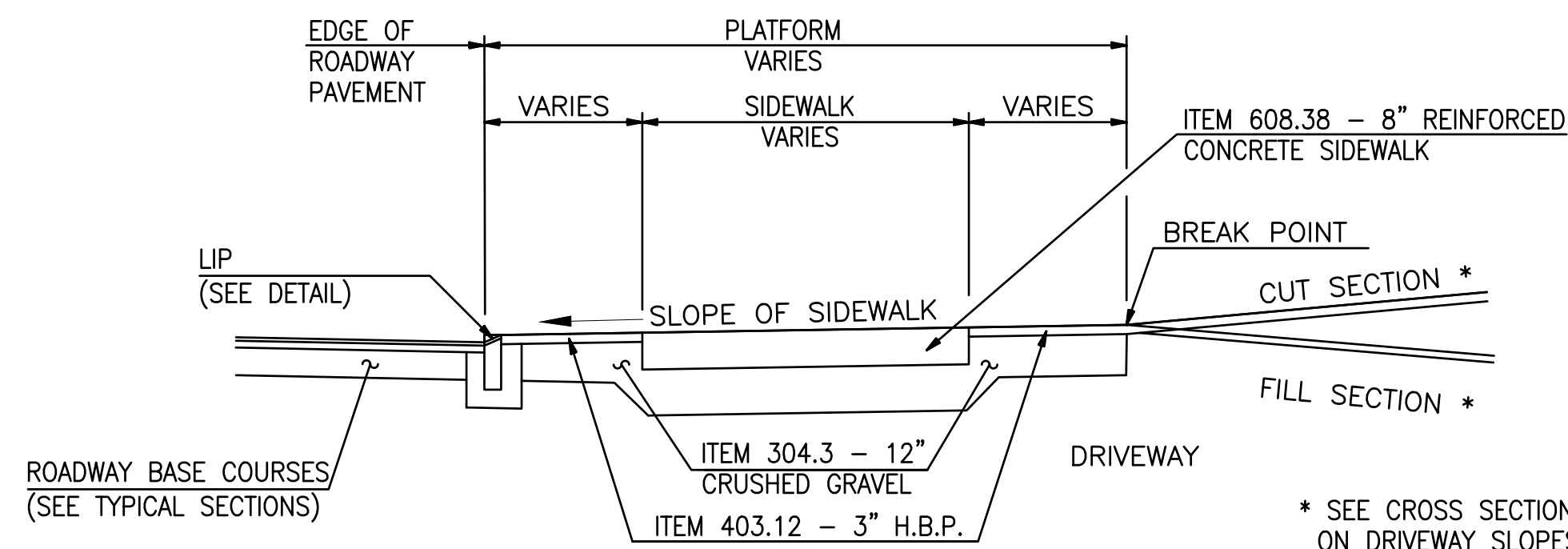
PLAN VIEW WITH SIDEWALK RAMP
N.T.S.



END VIEW
N.T.S.

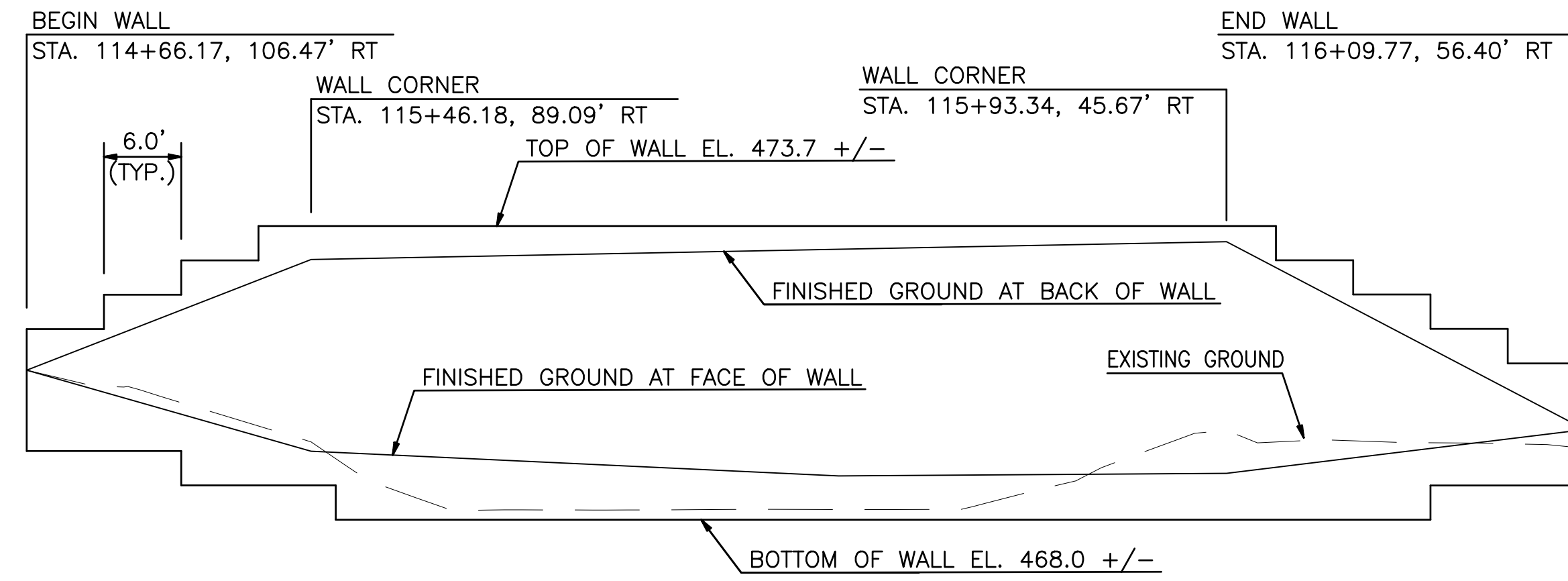


LIP DETAIL

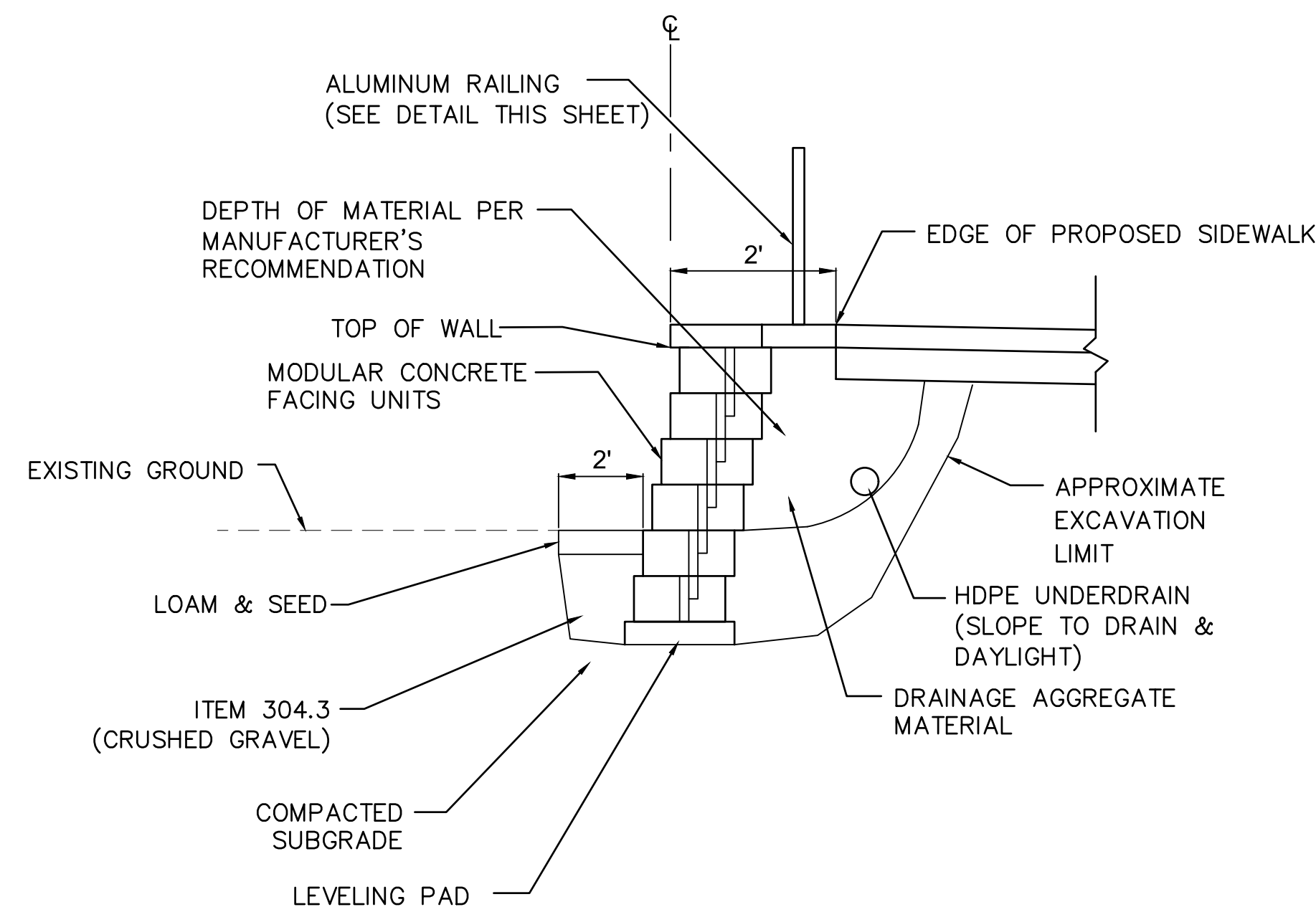


TYPICAL URBAN CURBED DRIVE IN CUT/FILL SECTION
N.T.S.

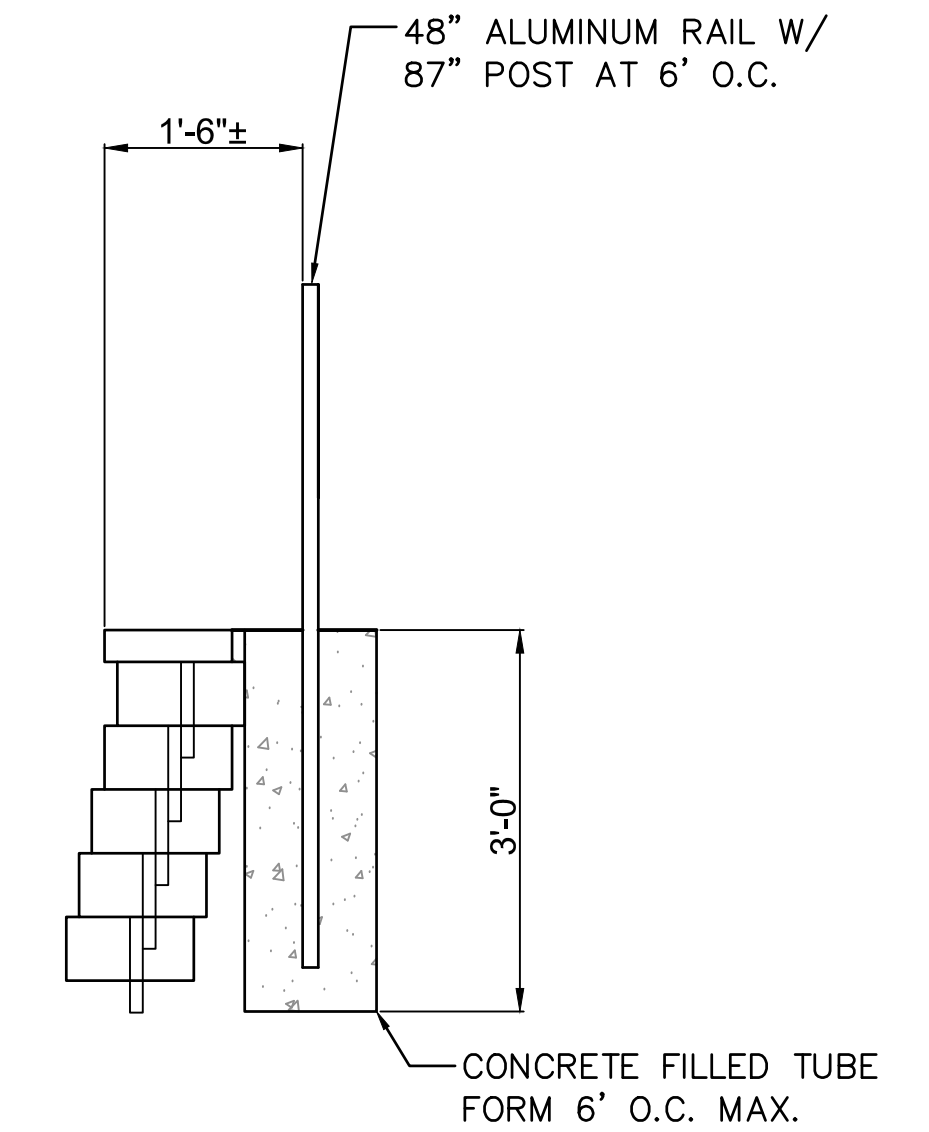
* SEE CROSS SECTIONS FOR ADDITIONAL INFORMATION ON DRIVEWAY SLOPES BEYOND SIDEWALK



ELEVATION VIEW - PRECAST CONCRETE MODULAR WALL
NOT TO SCALE



TYPICAL SECTION - PRECAST CONCRETE MODULAR WALL
NOT TO SCALE



RAIL SECTION AT RETAINING WALL DETAIL
NOT TO SCALE

WALL NOTES:

1. WALL DETAILS AND LAYOUT ARE APPROXIMATE AND PROVIDED FOR GENERAL INFORMATION ONLY. A FINAL DESIGN FOR WALL SYSTEM, STAMPED BY A NH REGISTERED PROFESSIONAL ENGINEER, TO BE PROVIDED BY THE CONTRACTOR USING THE WALL MANUFACTURER'S SPECIFICATIONS AND ON-SITE SOIL CONDITIONS.
2. RAILING TO BE BLACK ALUMINUM PICKET-STYLE (REGENCY WINDSOR SERIES, FENCES UNLIMITED, INC., OR EQUAL). RAILING TO BE PLACED FROM STA 115+46.1, RIGHT TO STA 115+93.3, RIGHT, A TOTAL OF 72 FEET IN LENGTH.

REV	DATE	DESCRIPTION	BY

McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

**CITY OF KEENE
KEENE, NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION**

**DETAILS (SHEET 11 OF 21)
DRIVEWAY AND WALL DETAILS**

SCALE: AS SHOWN	DESIGN: BEP	DT-11 18 OF 143
DRAWN: MJF	PROJECT: 18022.01	
CHECKED: EWM	DATE: SEPTEMBER 2021	

GENERAL NOTES:

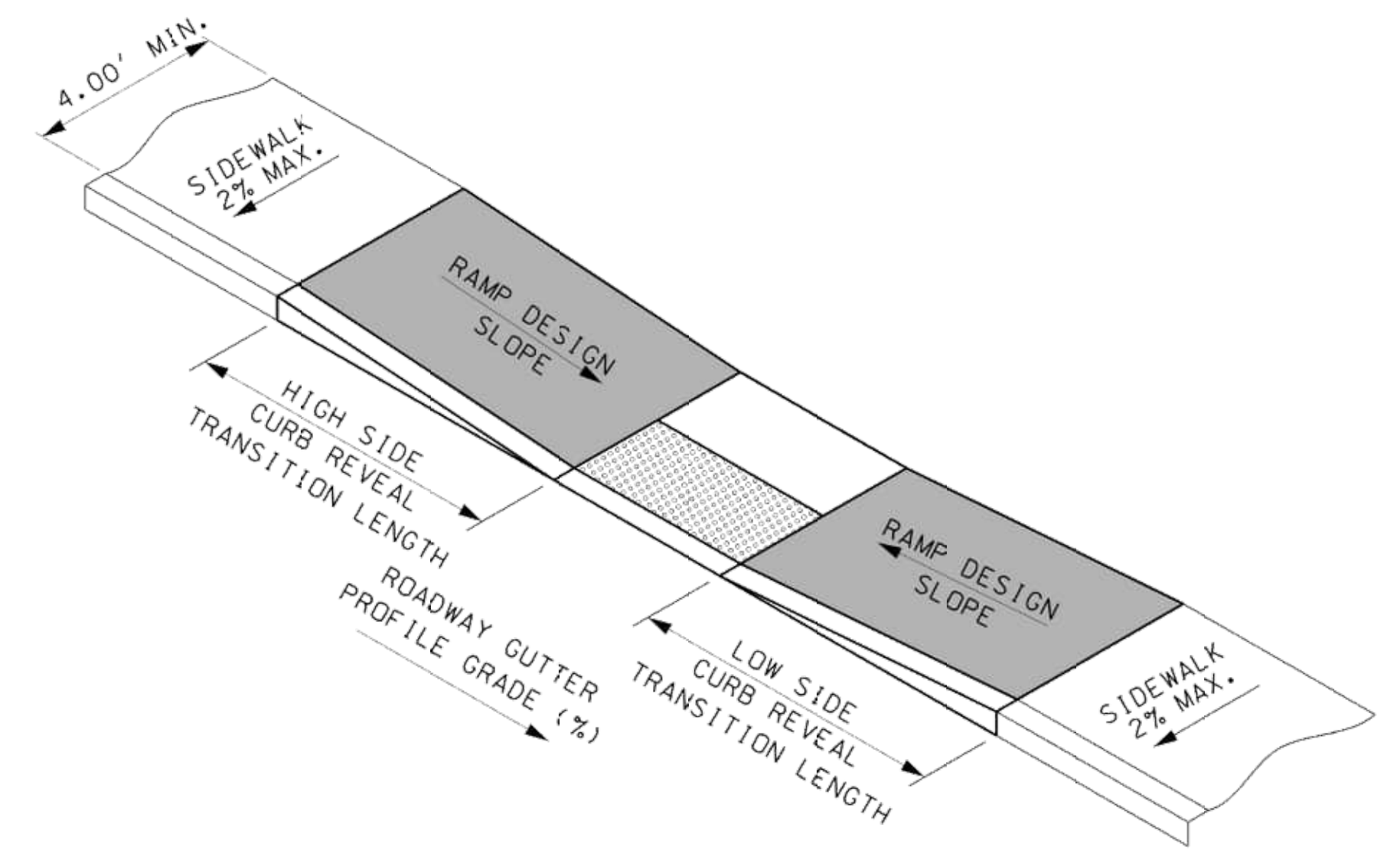
- THESE SHEETS ARE IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA), AND THE REQUIREMENTS OF THE 2011 PROPOSED ACCESSIBILITY GUIDELINES FOR PEDESTRIAN FACILITIES IN THE PUBLIC RIGHT OF WAY (PROWAG).
- NOT ALL FACILITIES CAN BE CONSTRUCTED TO MEET THE DESIGN STANDARDS. FACILITIES THAT CANNOT BE CONSTRUCTED TO MEET THE DESIGN STANDARDS SHALL BE CONSTRUCTED TO MEET THE STANDARDS TO THE GREATEST EXTENT PRACTICABLE. NONSTANDARD FEATURES SHALL BE DOCUMENTED ON TECHNICAL INFEASIBILITY FORM AND SUBMITTED TO NHDOT ADA COORDINATOR FOR APPROVAL.
- TO CHECK FIELD LAYOUT ALL SLOPES AND GRADES SHALL BE MEASURED WITH A DIGITAL LEVEL USING AT LEAST TWO READINGS. WHERE THE READINGS VARY, THE MEASUREMENTS SHALL BE AVERAGED. GRADE (RUNNING SLOPE) SHALL BE MEASURED ALONG THE CENTERLINE AND OFFSET 1.00' TO 1.50' FROM THE CENTERLINE. CROSS SLOPES SHALL BE MEASURED PERPENDICULAR TO CENTERLINE AT 5.00' TO 10.00' INTERVALS.
- GRADES (RUNNING SLOPES) ARE MEASURED IN THE DIRECTION OF PEDESTRIAN TRAVEL. CROSS SLOPES ARE MEASURED PERPENDICULAR TO THE DIRECTION OF PEDESTRIAN TRAVEL.
- JOINTS BETWEEN SIDEWALKS, CURB RAMPS, TURNING SPACES AND ROADWAYS SHALL BE FLUSH AND FREE FROM ABRUPT VERTICAL CHANGES GREATER THAN 1/4". VERTICAL SURFACE DISCONTINUITIES BETWEEN 1/4" AND 1/2" SHALL BE BEVELED WITH A SLOPE NOT STEEPER THAN 2:1. THE BEVEL SHALL BE APPLIED ACROSS THE ENTIRE JOINT. SEE DETAIL ON SHEET 9 OF 9.
- SIDEWALKS ARE CONNECTED TO ROADWAYS BY EITHER BLENDED TRANSITIONS OR CURB RAMPS. BLENDED TRANSITIONS ARE CONNECTIONS BETWEEN THE SIDEWALK LEVEL AND THE ROADWAY LEVEL THAT HAVE A MAXIMUM GRADE (RUNNING SLOPE) OF 5%, AND TRANSITIONS GREATER THAN 5% ARE CONSIDERED CURB RAMPS.
- CURB RAMPS AND BLENDED TRANSITIONS MAY REQUIRE THE INSTALLATION OF DETECTABLE WARNINGS. SEE ADDITIONAL "DETECTABLE WARNING DEVICE NOTES" ON THIS SHEET, AND DETAILS ON SHEET 6 OF 10 FOR DIMENSIONS, ORIENTATION AND INSTALLATION.
- VERTICAL ALIGNMENT SHALL BE GENERALLY PLANAR. GRADE BREAKS WITHIN THE PEDESTRIAN ACCESS ROUTE SHALL BE PERPENDICULAR TO THE DIRECTION OF TRAVEL AND SHALL NOT BE ROUNDED.
- THE CROSS SLOPE OF PEDESTRIAN ACCESS ROUTES (PAR) SHALL BE 2% MAXIMUM. THE FOLLOWING EXCEPTIONS ARE ALLOWED:
 - WHERE PEDESTRIAN CROSSINGS ARE PROVIDED AT INTERSECTIONS WITHOUT YIELD OR STOP CONTROL OR WHERE THERE IS ANY TRAFFIC SIGNAL, THE CROSS SLOPE OF A PEDESTRIAN ACCESS ROUTE CONTAINED WITHIN A CROSSING SHALL BE 5% MAXIMUM.
 - WHERE MIDBLOCK PEDESTRIAN CROSSINGS ARE PROVIDED, THE CROSS SLOPE OF A PEDESTRIAN ACCESS ROUTE CONTAINED WITHIN A MIDBLOCK CROSSING SHALL BE PERMITTED TO EQUAL THE STREET OR HIGHWAY GRADE.
- THE MINIMUM CLEAR WIDTH FOR PEDESTRIAN ACCESS ROUTES IS 4.00', EXCLUSIVE OF THE CURB. WHEN WALKWAY WIDTHS ARE LESS THAN 5.00', 5.00' x 5.00' PASSING SPACES, OR A FEATURE OF EQUAL OR GREATER DIMENSIONS (E.G., DRIVEWAYS) THAT MEET THE SLOPE CRITERIA, SHALL BE PROVIDED AT A MAXIMUM INTERVAL OF 200'. EXISTING DRIVEWAYS AND STREET CROSSING MAY ALSO SERVE AS PASSING SPACES.
- THE BUFFER ZONE IS A PHYSICAL DISTANCE SEPARATING THE PEDESTRIAN ACCESS ROUTE FROM THE VEHICLE TRAVELED WAY. THE BUFFER ZONE MAY BE PLANTED OR PAVED.
- WHEN CROSSING DRIVEWAYS, THE WORK SHALL BE IN CONFORMANCE WITH NHDOT DRIVEWAY DETAILS SHEET. THE CROSS SLOPE ACROSS DRIVEWAYS SHALL BE 2% MAXIMUM.
- FOR ACCESSIBLE PEDESTRIAN SIGNAL PUSH BUTTONS, SEE DETAILS ON SHEET 8 OF 9.
- FOR RAMP COUNTER SLOPE REQUIREMENTS, SEE DETAILS ON SHEET 9 OF 9.

CURB RAMP NOTES:

- THE MINIMUM WIDTH OF A CURB RAMP SHALL BE 4.00'.
- THE FULL WIDTH OF THE RAMP OR LANDING SHALL BE CONTAINED WITHIN THE PAVEMENT MARKINGS AT MARKED CROSSWALKS.
- CURB RAMPS ARE NOT REQUIRED IN LOCATIONS WHERE THERE IS NO ACCESSIBLE PEDESTRIAN ACCESS ROUTE, UNLESS IT IS SERVING AS A LANDING FOR A PEDESTRIAN SIGNAL.
- THE GRADE (RUNNING SLOPE) OF A CURB RAMP SHALL BE A MAXIMUM OF 8.3%.
- WHERE EXISTING CONDITIONS DO NOT ALLOW THE CONSTRUCTION OF A CURB RAMP WITH A GRADE (RUNNING SLOPE) OF 8.3% OR LESS, THE RAMP LENGTH SHALL NOT BE REQUIRED TO EXCEED 15.00'.
- THE CROSS SLOPE OF THE CURB RAMP SHALL BE AS FLAT AS POSSIBLE AND STILL PROVIDE POSITIVE DRAINAGE. THE CROSS SLOPE OF A CURB RAMP 2% MAXIMUM. SEE NOTE 9 FOR EXCEPTIONS. WHERE THE EXISTING ROADWAY GRADE EXCEEDS 2%, THE CURB RAMP MAY BE WARPED ACCORDING TO THE DETAIL ON SHEET 9 OF 9 TO TIE INTO THE ROADWAY GRADE.
- RAMP SIDE TREATMENT OPTIONS ARE DETAILED ON SHEET 7 OF 9 FOR USE WITHIN THE BUFFER ZONE. WHERE A PEDESTRIAN CIRCULATION PATH CROSSES THE CURB RAMP, FLARED SIDES SHALL BE INSTALLED WITH A SLOPE OF 10% MAXIMUM. THE SLOPE OF FLARED SIDES IS MEASURED PARALLEL TO THE CURB LINE. (ALSO SEE CURB RAMP CONFIGURATION TYPE 7 ON SHEET 3 OF 9.)
- THE BACKSIDE OF A PARALLEL RAMP SHOULD BE GRADED TO MATCH EXISTING TERRAIN, UNLESS OTHERWISE SHOWN IN THE CONTRACT DOCUMENTS. WHERE GRADING IS NOT FEASIBLE DUE TO LIMITED ROW OR PHYSICAL CONSTRAINTS, A BACK CURB MAY BE INSTALLED. SEE DETAILS ON SHEET 7 OF 9.

TURNING SPACE AND CLEAR SPACE NOTES:

- WHERE A CHANGE IN DIRECTION IS REQUIRED TO UTILIZE A CURB RAMP, A TURNING SPACE SHALL BE PROVIDED AT THE BASE AND/OR THE TOP OF CURB RAMP AS APPLICABLE. TURNING SPACES SHALL BE PERMITTED TO OVERLAP CLEAR SPACES.
- WHERE THERE ARE NO VERTICAL CONSTRAINTS AT THE BACK OF SIDEWALK, (E.G., VERTICAL CURB, BUILDINGS, FENCES) THE TURNING SPACE DIMENSIONS SHALL BE 4.00' x 4.00' MINIMUM. WHERE THE TURNING SPACE IS CONSTRAINED AT THE BACK OF SIDEWALK, THE TURNING SPACE SHALL BE 4.00' x 5.00' MINIMUM. THE 5.00' DIMENSION SHALL BE PROVIDED PERPENDICULAR TO THE CONSTRAINT.
- TURNING SPACE MAXIMUM CROSS SLOPE IS 2% IN ANY DIRECTION.
- BEYOND THE BOTTOM GRADE BREAK, A CLEAR SPACE OF 4.00' x 4.00' MINIMUM SHALL BE PROVIDED WITHIN THE WIDTH OF THE PEDESTRIAN CROSSWALK, AND OUTSIDE THE PARALLEL VEHICLE TRAVEL LANE. THE CLEAR SPACE MAY OVERLAP TURNING SPACES, DETECTABLE WARNING SURFACES, AND DROP CURBS.



DETECTABLE WARNING DEVICE NOTES:

- DETECTABLE WARNING DEVICES (DWD) SHALL BE PROVIDED AT THE FOLLOWING LOCATIONS ON PEDESTRIAN ACCESS ROUTES:
 - CURB RAMPS AT PEDESTRIAN CROSSINGS.
 - PEDESTRIAN REFUGE ISLANDS (WHERE THE LENGTH OF THE PEDESTRIAN ACCESS ROUTE ACROSS THE REFUGE ISLAND IS GREATER THAN OR EQUAL TO 6.00'). SEE SHEET 8 OF 9.
 - PEDESTRIAN AT-GRADE RAIL CROSSINGS NOT LOCATED WITHIN A STREET OR HIGHWAY.
 - DRIVEWAY CROSSINGS WITH NHDOT APPROVED AND MAINTAINED SIGNALS, YIELD OR STOP CONTROL. DETECTABLE WARNING DEVICES SHALL NOT BE PROVIDED AT CROSSINGS OF UNCONTROLLED DRIVEWAY APRONS.
- SOME DETECTABLE WARNING PRODUCTS REQUIRE A CONCRETE BORDER FOR PROPER INSTALLATION. IF REQUIRED, THE BORDER SHALL NOT EXCEED 2" IN WIDTH OR 6" ALONG ROADWAY EDGE/CURB. THE BORDER DIMENSION SHALL BE MEASURED FROM THE INSIDE EDGE OF THE RADIUS.
- THE DETAILS PROVIDED ARE NOT DRAWN TO SCALE. THE QUANTITY OF DOMES DEPICTED ON THE DETECTABLE WARNING DEVICE DETAIL IS FOR ILLUSTRATION ONLY. THE SIZE OF THE DETECTABLE WARNING FIELD SHALL BE 2.00' MINIMUM IN THE DIRECTION OF TRAVEL AND SHALL EXTEND THE FULL WIDTH OF THE CURB RAMP OR FLUSH SURFACE, EXCLUDING ANY FLARED SIDES. THE WIDTH OF THE DETECTABLE WARNING FIELD INCLUDES A CONCRETE BORDER, IF PROVIDED. PLACEMENT AND ORIENTATION SHALL BE IN COMPLIANCE WITH THE DETAILS.
- ON SLOPES OF 5% OR GREATER, THE ROWS OF DOMES SHALL BE ALIGNED TO BE PERPENDICULAR OR RADIAL TO THE LOWER GRADE BREAK ON THE RAMP RUN. WHERE DOMES ARE ARRAYED RADially THEY MAY DIFFER IN DOME DIAMETER AND CENTER-TO-CENTER SPACING WITHIN THE RANGES SPECIFIED ON SHEET 9. ON SLOPES LESS THAN 5%, DOME ORIENTATION IS LESS CRITICAL AND MAY DIFFER FROM PERPENDICULAR OR RADIAL ALIGNMENT TO THE GRADE BREAK.
- THE DETECTABLE WARNING SURFACES SHALL CONTRAST VISUALLY WITH ADJACENT GUTTER, STREET OR HIGHWAY, OR PEDESTRIAN ACCESS ROUTE SURFACE.
- DETECTABLE WARNING PANELS SHALL BE CAST IRON WITH NO SURFACE COATING AND SHALL BE ALLOWED TO TRANSITION TO THEIR NATURAL PATINA.

DEFINITION OF TERMS:

LANDING: A 4.00' x 4.00' CLEAR SPACE WITH A 2% SLOPE OR LESS IN ALL DIRECTIONS.

MAXIMUM EXTENT FEASIBLE: ALL CHANGES THAT ARE POSSIBLE ARE MADE TO COMPLY WITH ACCESSIBILITY STANDARDS.

PEDESTRIAN ACCESS ROUTE (PAR): A CONTINUOUS AND UNOBSTRUCTED PATH OF TRAVEL PROVIDED FOR PEDESTRIANS WITH DISABILITIES WITHIN OR CONINCIDING WITH A PEDESTRIAN CIRCULATION PATH. PAR SHALL BE 4' W MIN. (EXCLUDING CURBING), 2% MAX. CROSS SLOPE AND 1/4" OR LESS VERTICAL DISCONTINUITY.

TECHNICAL INFEASIBILITY: EXISTING PHYSICAL OR SITE CONSTRAINTS THAT PROHIBIT MODIFICATIONS OR ADDITIONS OF ELEMENTS, SPACES OR FEATURES TO COMPLY WITH MINIMUM ACCESSIBILITY REQUIREMENTS.

INDEX OF SHEETS

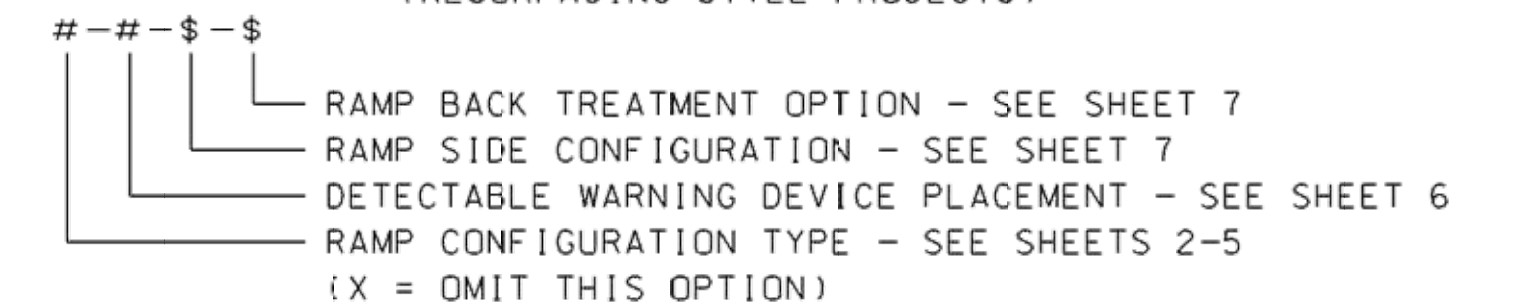
1 OF 9	INDEX OF SHEETS AND GENERAL NOTES
2 OF 9	CURB RAMP CONFIGURATIONS TYPE 1 - 5
3 OF 9	CURB RAMP CONFIGURATIONS TYPE 6 - 7
4 OF 9	CURB RAMP CONFIGURATIONS TYPE 8 - 11
5 OF 9	SLIP RAMP, SIDEWALK TO SHOULDER TRANSITION, ACCESS ISLAND
6 OF 9	DETECTABLE WARNING DEVICE PLACEMENT OPTIONS
7 OF 9	RAMP SIDE CONFIGURATIONS AND BACK TREATMENTS
8 OF 9	RR X-INGS, ROUNDABOUTS, PEDESTRIAN BUTTONS
9 OF 9	DETECTABLE WARNING DEVICE, TRUNCATED DOMES, MISCELLANEOUS DETAILS

CURB REVEAL (INCHES)	Minimum Transition Length Required (FT)						
	7	6	5	4	3	2	1
ROADWAY PROFILE GRADE (%)							
Low Side Transition Length	-10%	5.0	5.0	5.0	5.0	5.0	5.0
	-9%	5.0	5.0	5.0	5.0	5.0	5.0
	-8%	5.0	5.0	5.0	5.0	5.0	5.0
	-7%	5.0	5.0	5.0	5.0	5.0	5.0
	-6%	5.0	5.0	5.0	5.0	5.0	5.0
	-5%	5.0	5.0	5.0	5.0	5.0	5.0
	-4%	5.1	5.0	5.0	5.0	5.0	5.0
	-3%	5.6	5.0	5.0	5.0	5.0	5.0
	-2%	6.1	5.3	5.0	5.0	5.0	5.0
	-1%	6.9	5.9	5.0	5.0	5.0	5.0
High Side Transition Length	0%	7.8	6.7	5.6	5.0	5.0	5.0
	1%	9.0	7.7	6.4	5.1	5.0	5.0
	2%	10.6	9.1	7.6	6.1	5.0	5.0
	3%	13.0	11.1	9.3	7.4	5.6	5.0
	4%	15.0	14.3	11.9	9.5	7.1	5.0
	5%	15.0	15.0	15.0	13.3	10.0	6.8
	6%	15.0	15.0	15.0	15.0	15.0	11.3
	7%	15.0	15.0	15.0	15.0	15.0	15.0
	8%	15.0	15.0	15.0	15.0	15.0	15.0
	9%	15.0	15.0	15.0	15.0	15.0	15.0
10%	15.0	15.0	15.0	15.0	15.0	15.0	

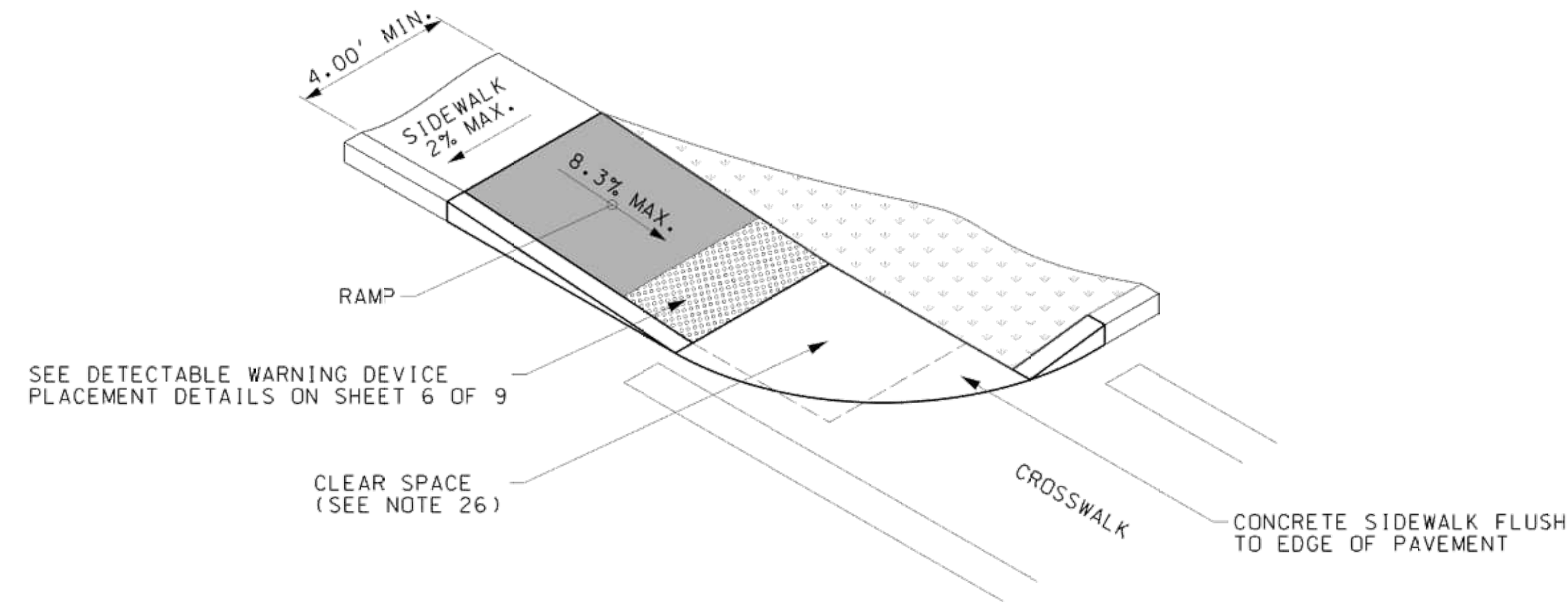
THIS TABLE REPRESENTS THE MINIMUM LENGTH OF CURB RAMP TRANSITION BASED ON THE EXISTING ROADWAY PROFILE GRADE AND THE CURB REVEAL AT FULL HEIGHT ALONG THE SIDEWALK. THE MINIMUM TRANSITION LENGTH REQUIRED IS BASED ON 7.5% SLOPE AND INDICATED CURB REVEAL.

TREATMENT KEY LEGEND

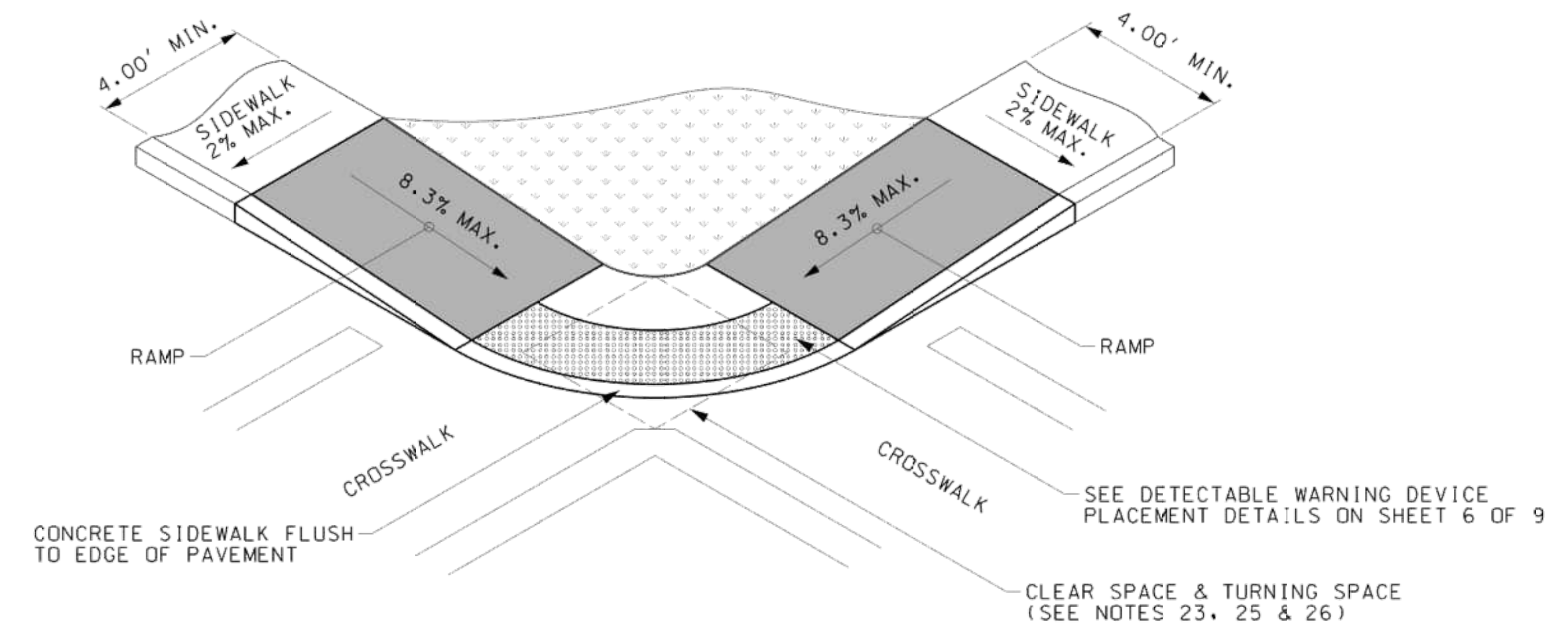
(RESURFACING STYLE PROJECTS)



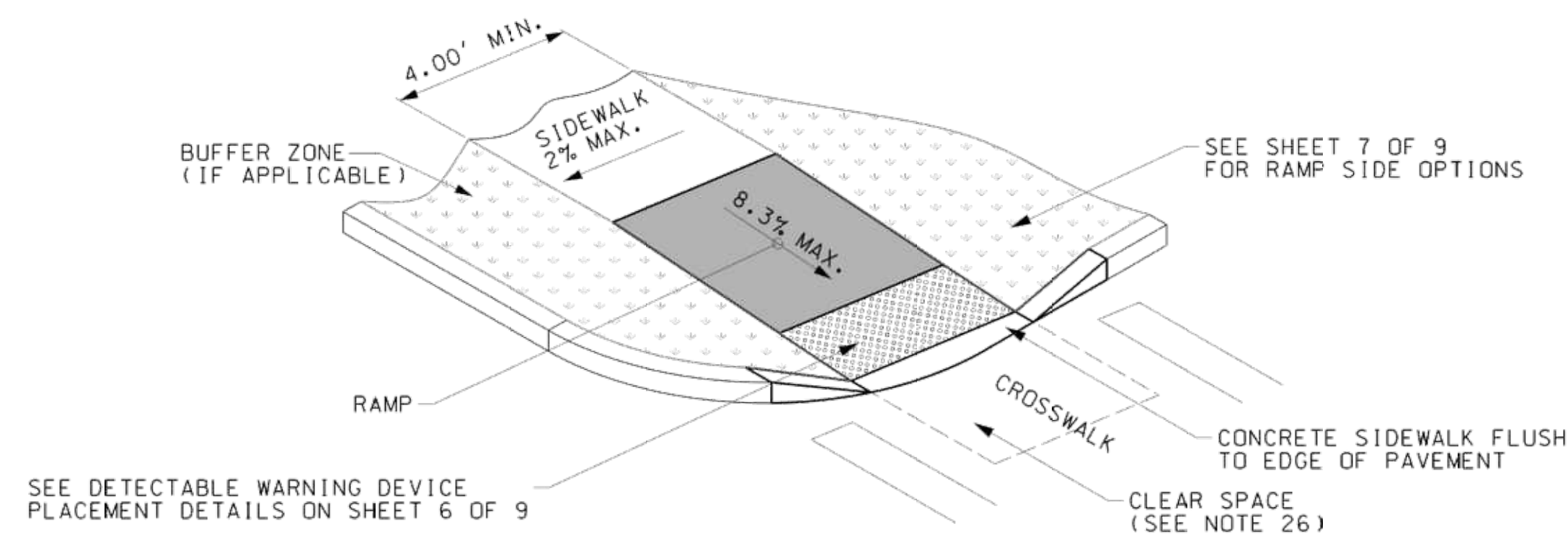
CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
DETAILS (SHEET 12 OF 21) CURB RAMP DETAILS 1			
REV	DATE	DESCRIPTION	BY
		McFarland Johnson	
53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301		SCALE: AS SHOWN	DESIGN: BEP
		DRAWN: MJF	PROJECT: 18022.01
		CHECKED: EWM	DATE: SEPTEMBER 2021
			DT-12 19 OF 143



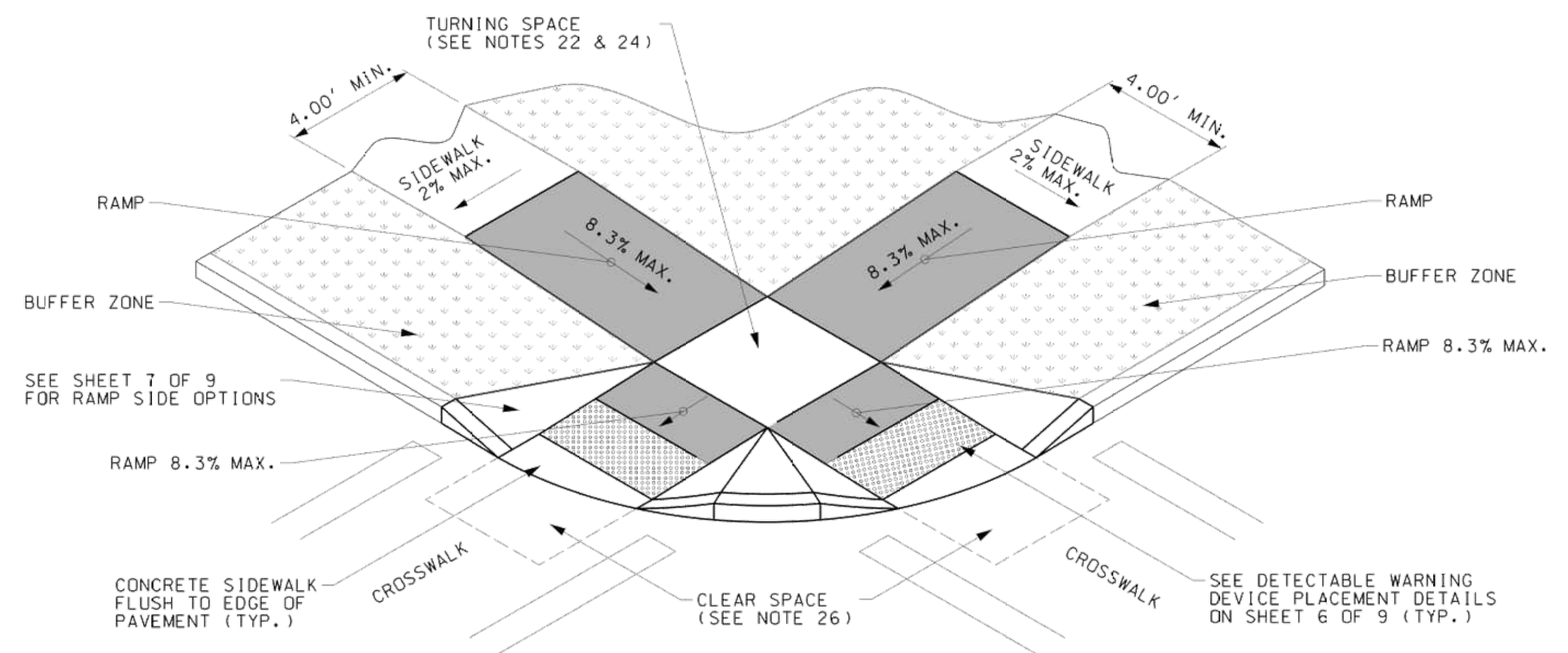
TYPE 1



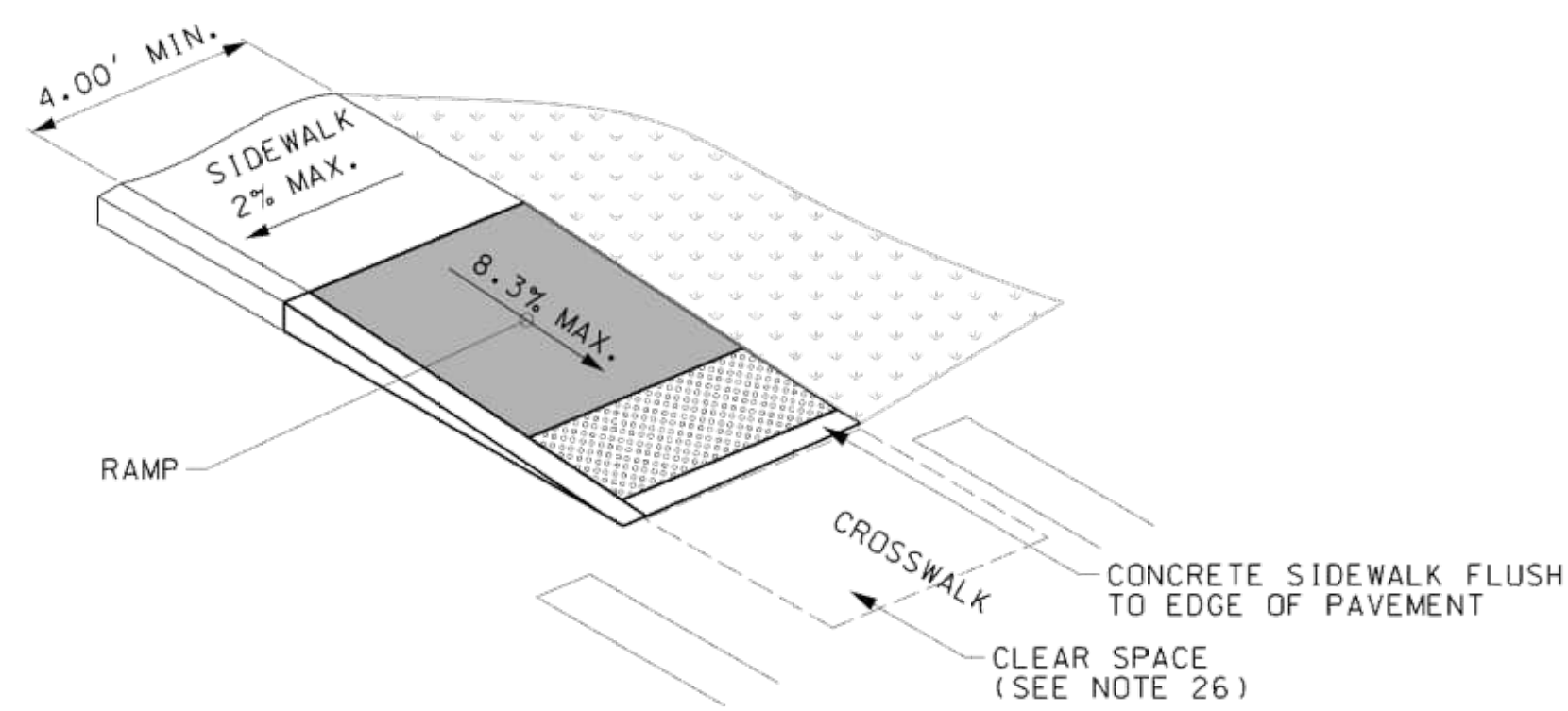
TYPE 4
NOT FOR NEW DESIGNS - RETROFITS ONLY



TYPE 2




TYPE 5

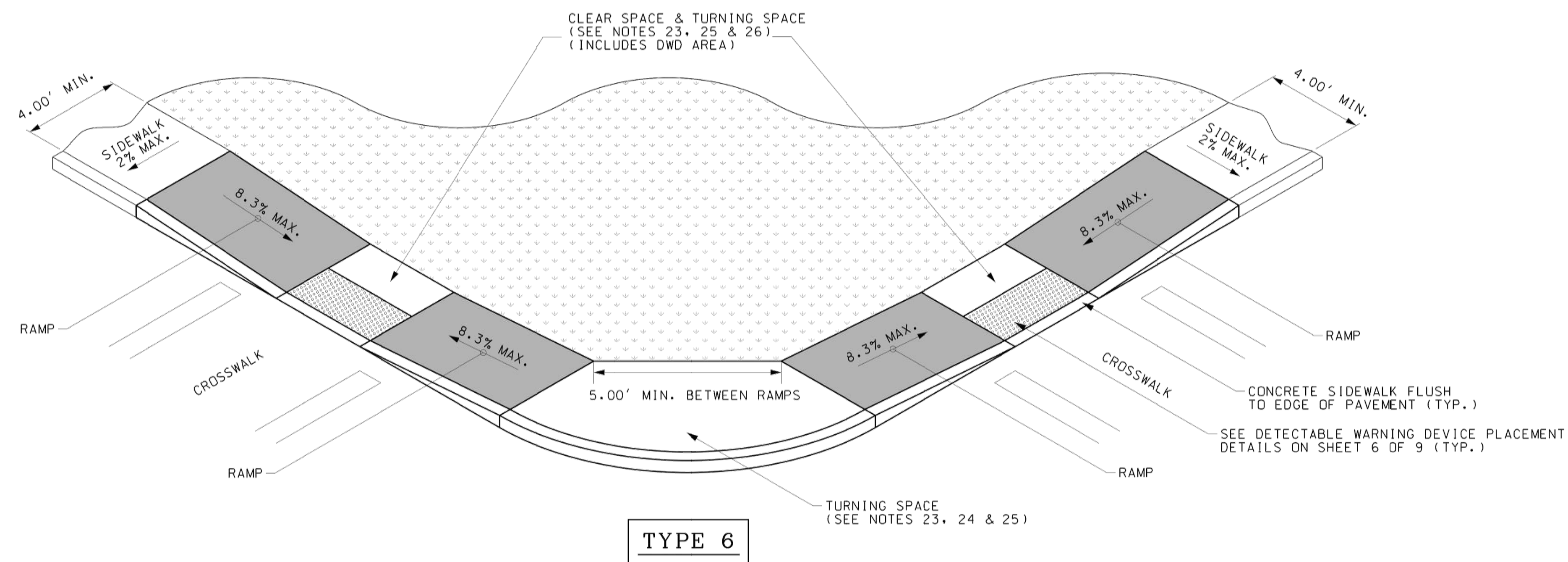


TYPE 3

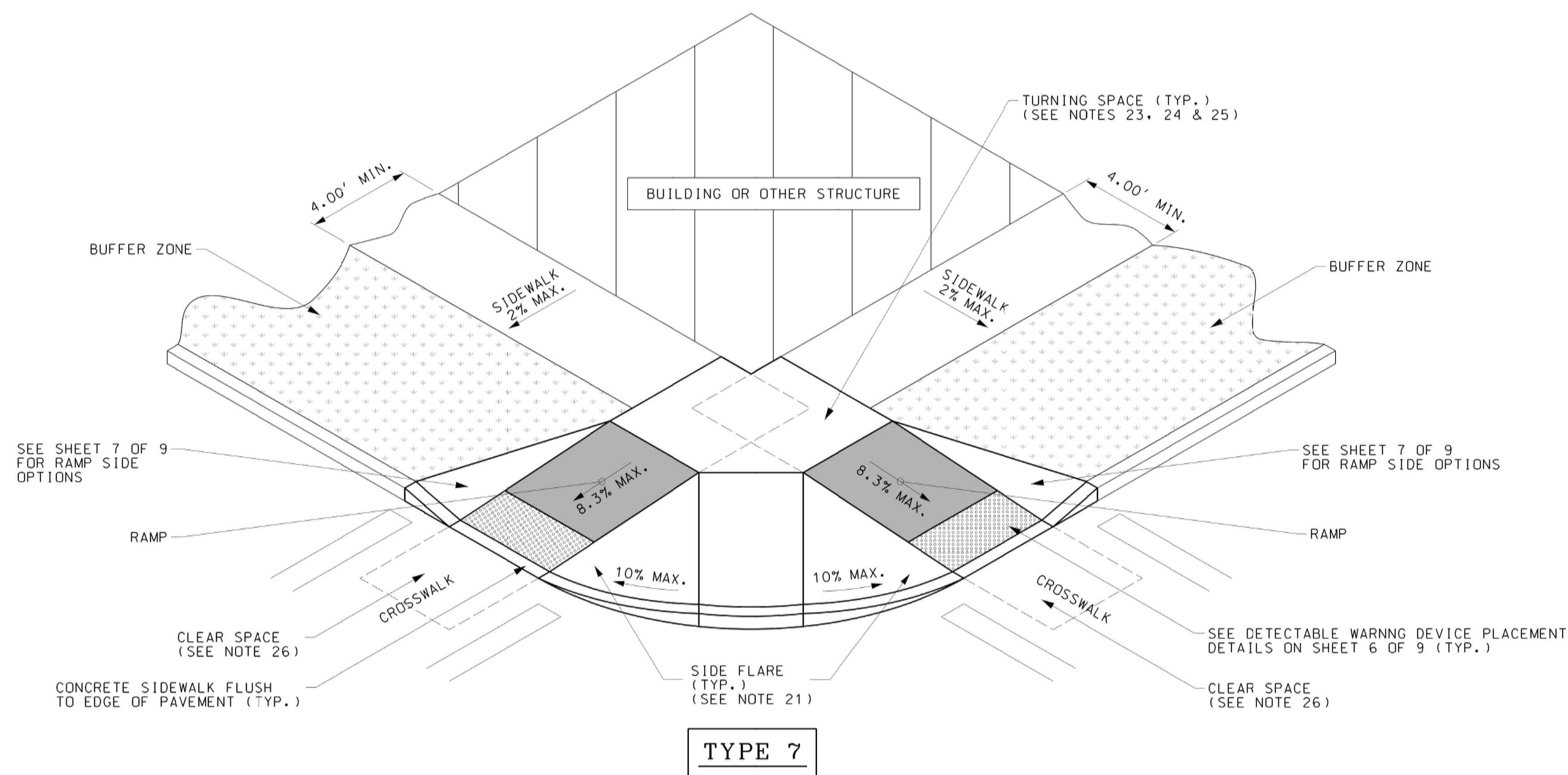
CURB RAMP CONFIGURATIONS

NOTE:
ALL NOTES REFERENCED ON THIS SHEET CAN BE FOUND ON SIDEWALK CURB RAMP DETAILS, SHEET 1 OF 9.

				CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION	
				DETAILS (SHEET 13 OF 21) CURB RAMP DETAILS 2	
REV	DATE	DESCRIPTION	BY		
				 McFarland Johnson	
				53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301	
		SCALE: AS SHOWN	DESIGN: BEP		
		DRAWN: MJF	PROJECT: 18022.01	DT-13	
		CHECKED: EWM	DATE: SEPTEMBER 2021	20 OF 143	



TYPE 6



TYPE 7


CURB RAMP CONFIGURATIONS

NOTE:
ALL NOTES REFERENCED ON THIS SHEET CAN BE FOUND ON SIDEWALK CURB RAMP DETAILS, SHEET 1 OF 9.

REV	DATE	DESCRIPTION	BY

CITY OF KEENE
KEENE, NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION

DETAILS (SHEET 14 OF 21)
CURB RAMP DETAILS 3



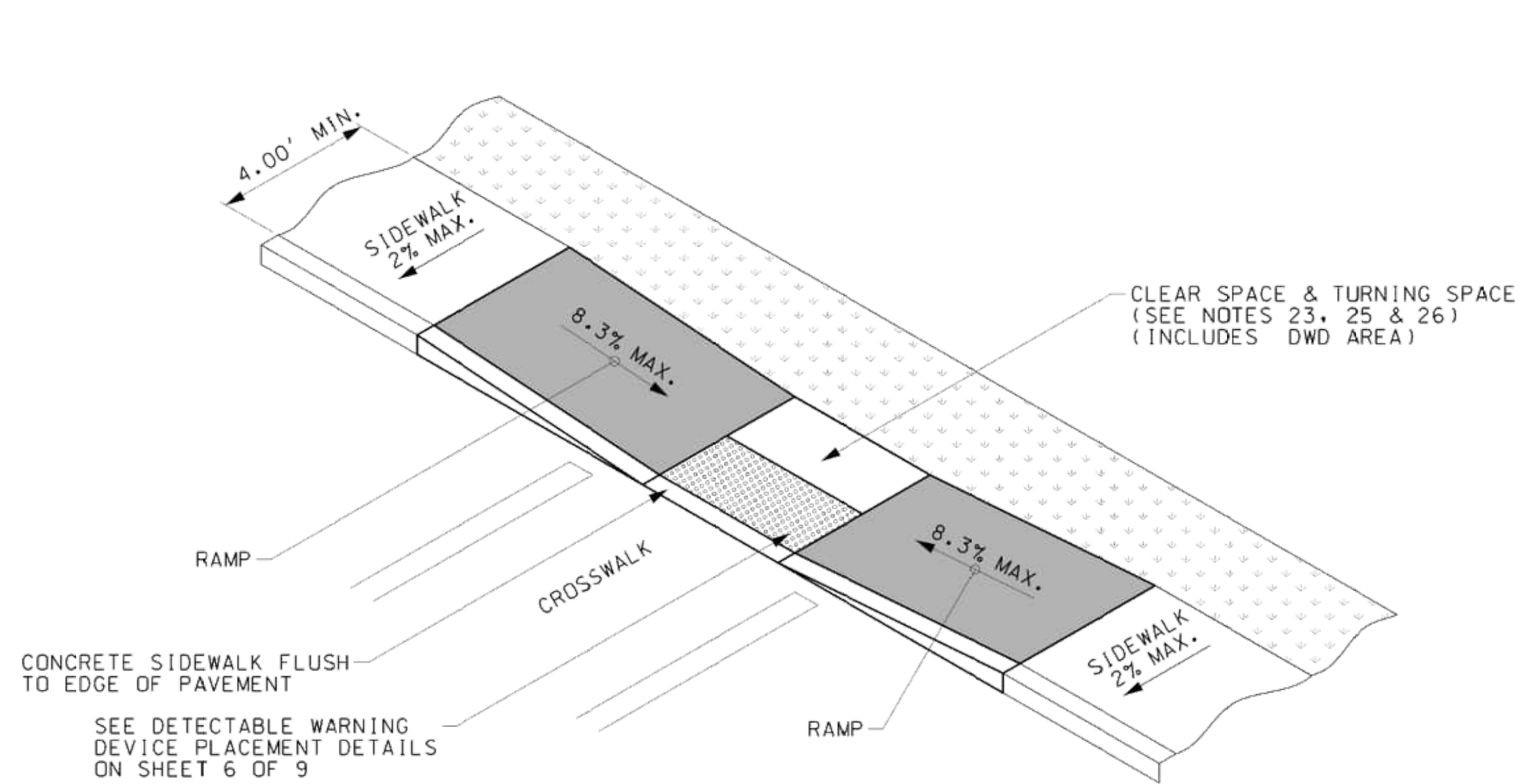
McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

SCALE: AS SHOWN DESIGN: BEP

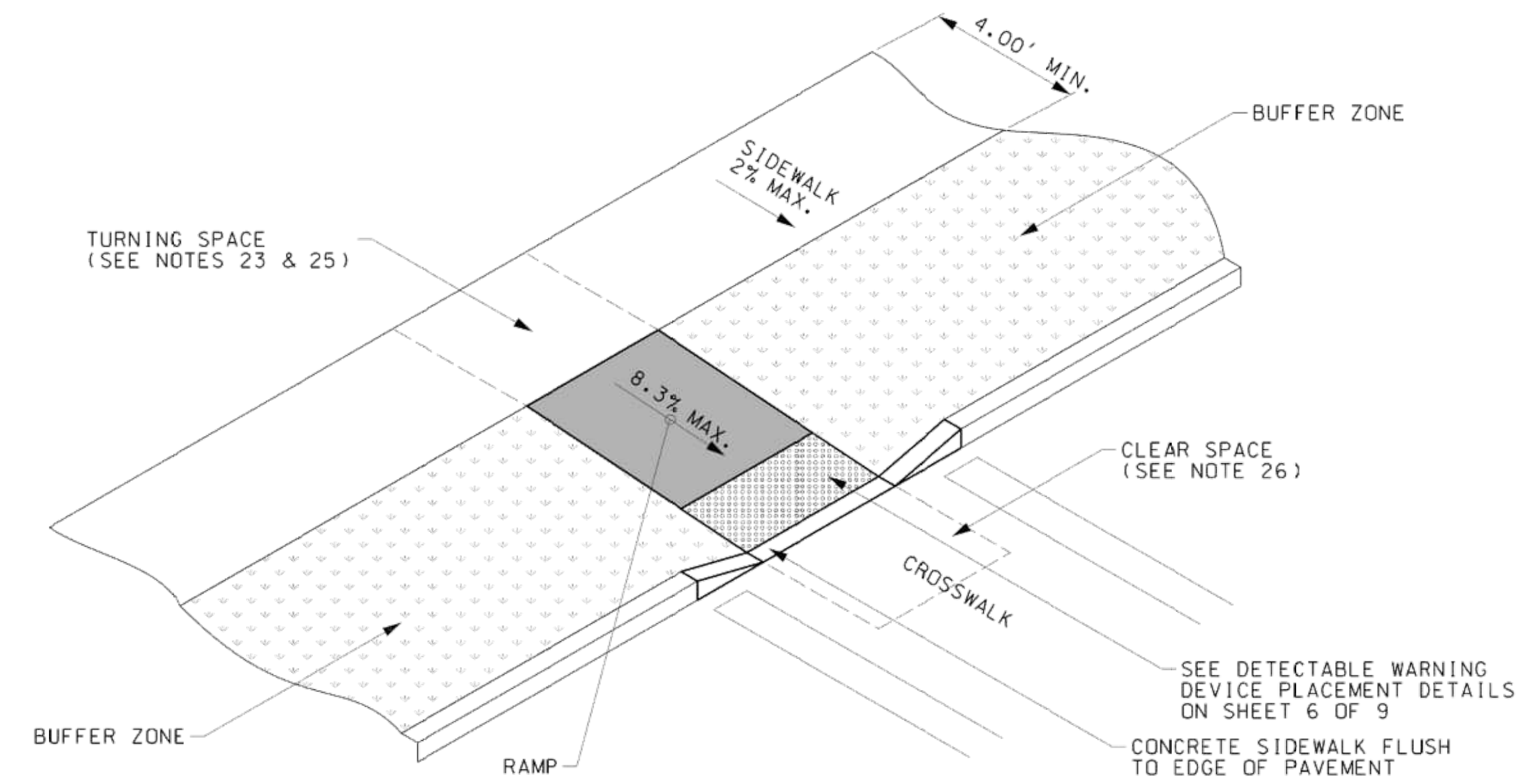
DRAWN: MJF PROJECT: 18022.01

CHECKED: EWM DATE: SEPTEMBER 2021

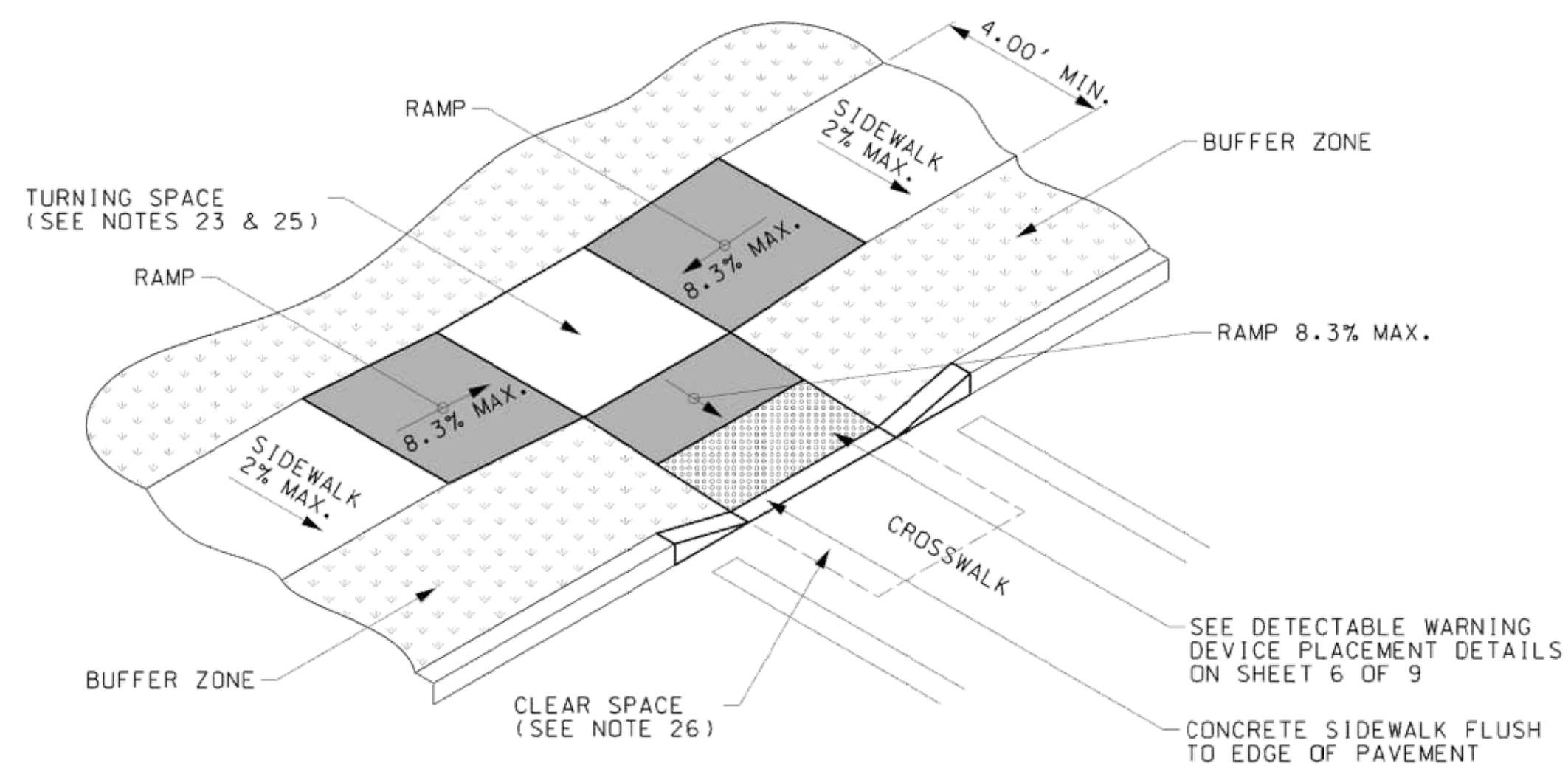
DT-14
21 OF 143



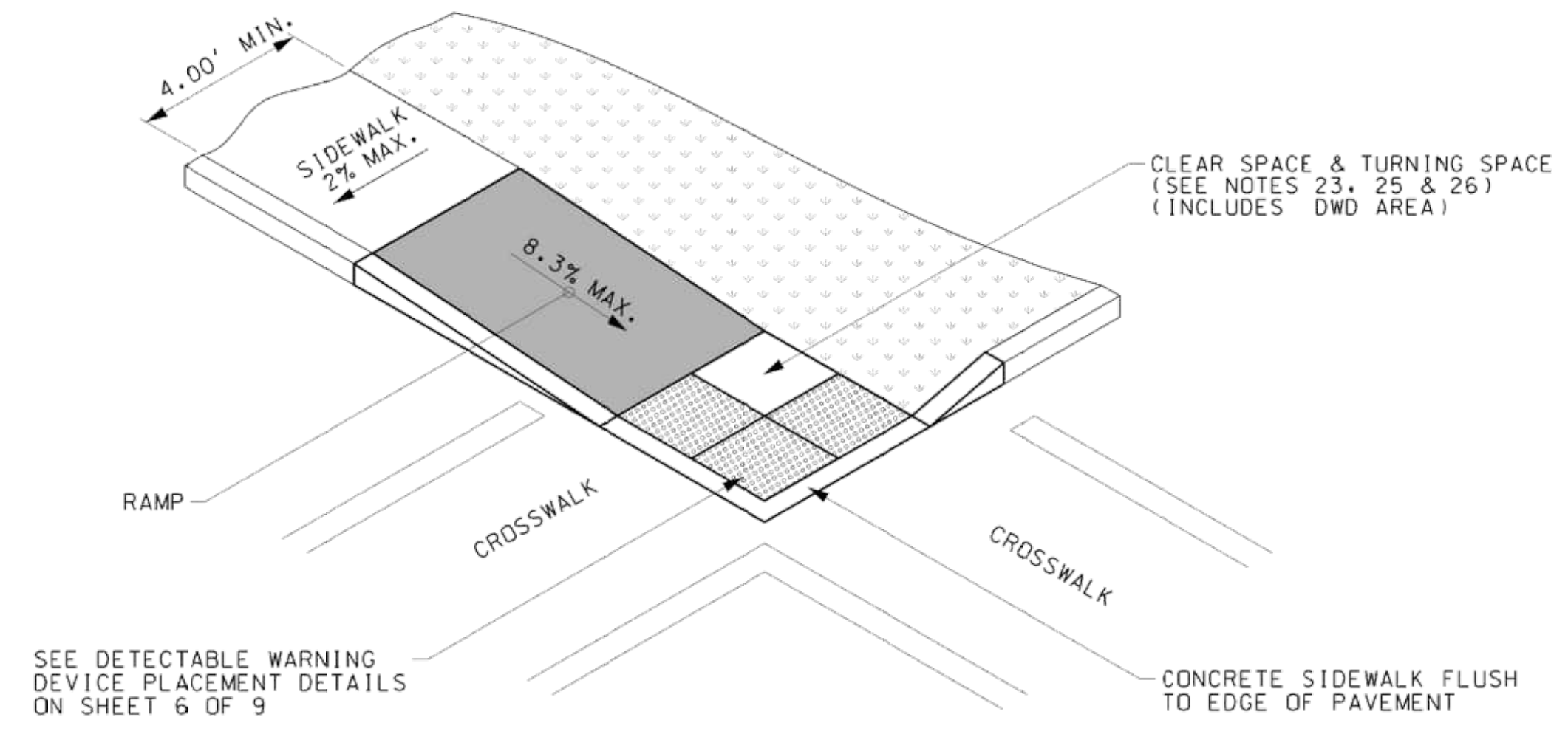
TYPE 8
MID BLOCK CROSSING OR T INTERSECTION



TYPE 10
MID BLOCK CROSSING OR T INTERSECTION




TYPE 9
MID BLOCK CROSSING OR T INTERSECTION

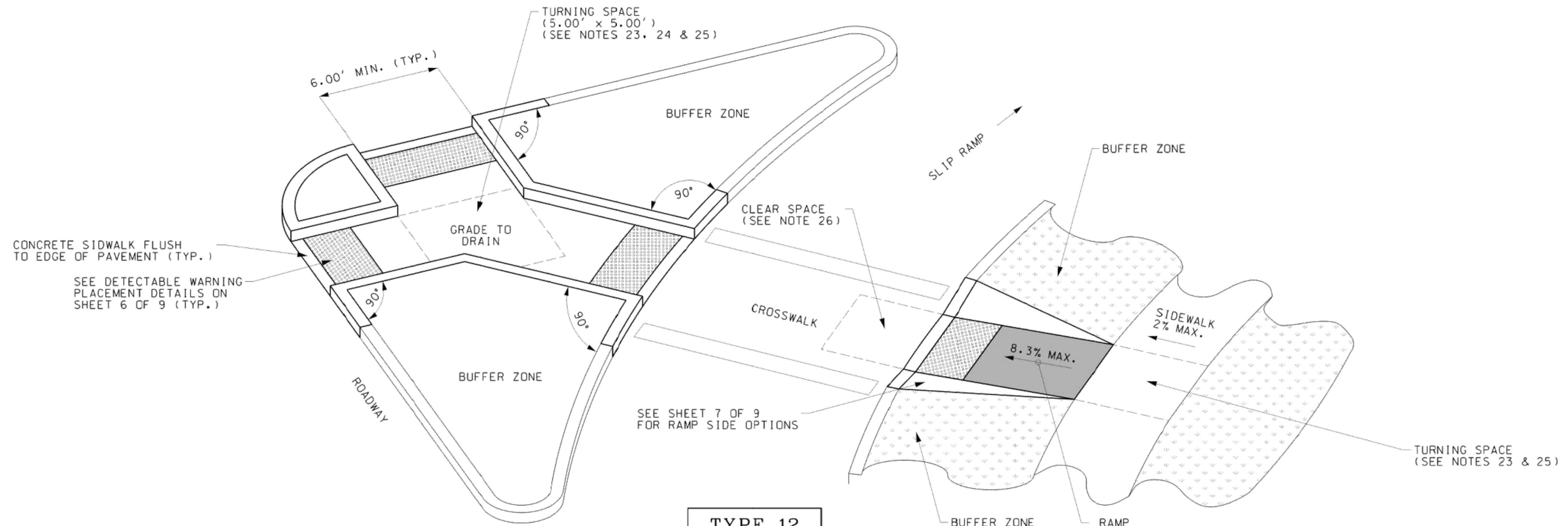


TYPE 11

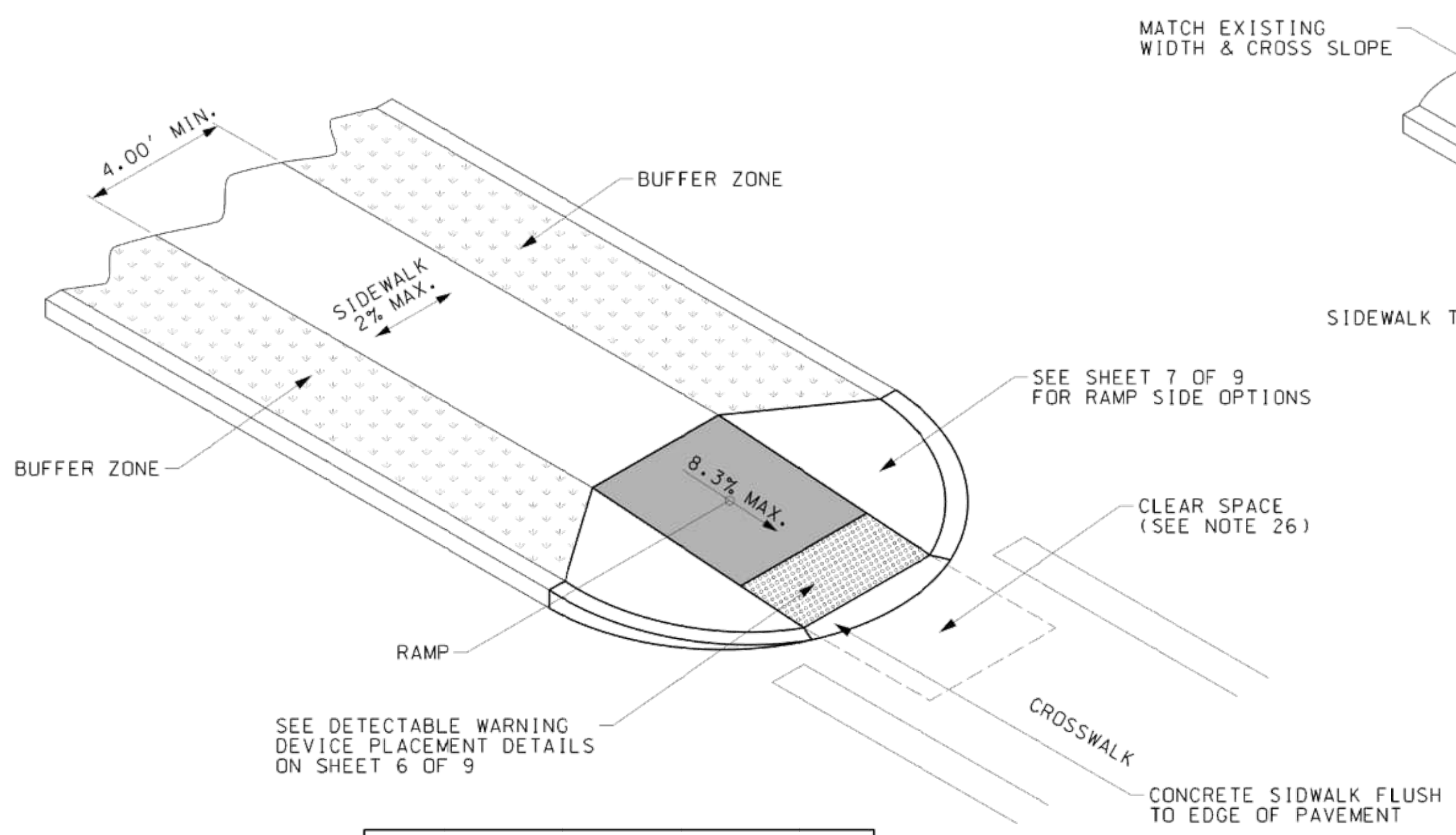
CURB RAMP CONFIGURATIONS

NOTE:
ALL NOTES REFERENCED ON THIS SHEET CAN BE FOUND ON SIDEWALK CURB RAMP DETAILS, SHEET 1 OF 9.

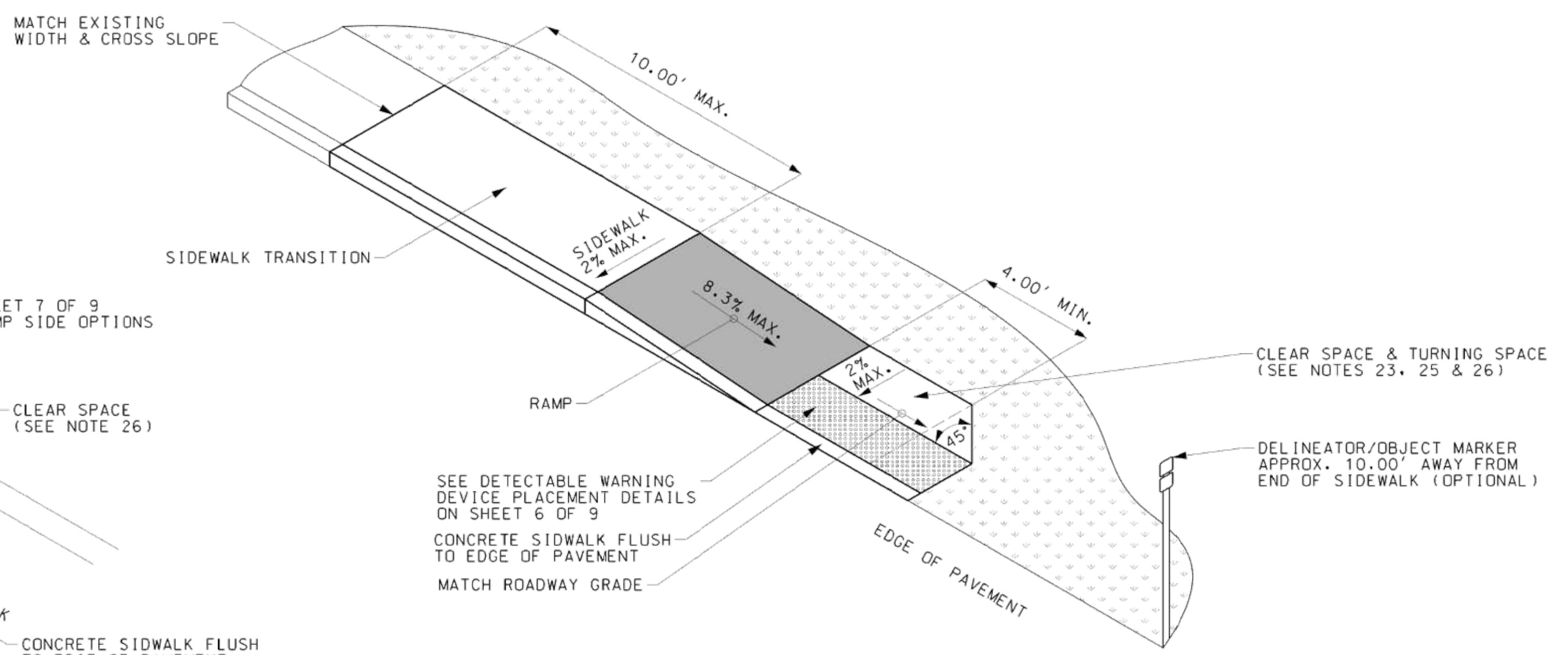
				CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION	
				DETAILS (SHEET 15 OF 21) CURB RAMP DETAILS 4	
REV	DATE	DESCRIPTION	BY		
 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301				SCALE: AS SHOWN	DESIGN: BEP
				DRAWN: MJF	PROJECT: 18022.01
				CHECKED: EWM	DATE: SEPTEMBER 2021
				DT-15 22 OF 143	



TYPE 12
SLIP RAMP



TYPE 13
ACCESS ISLAND CURB RAMP

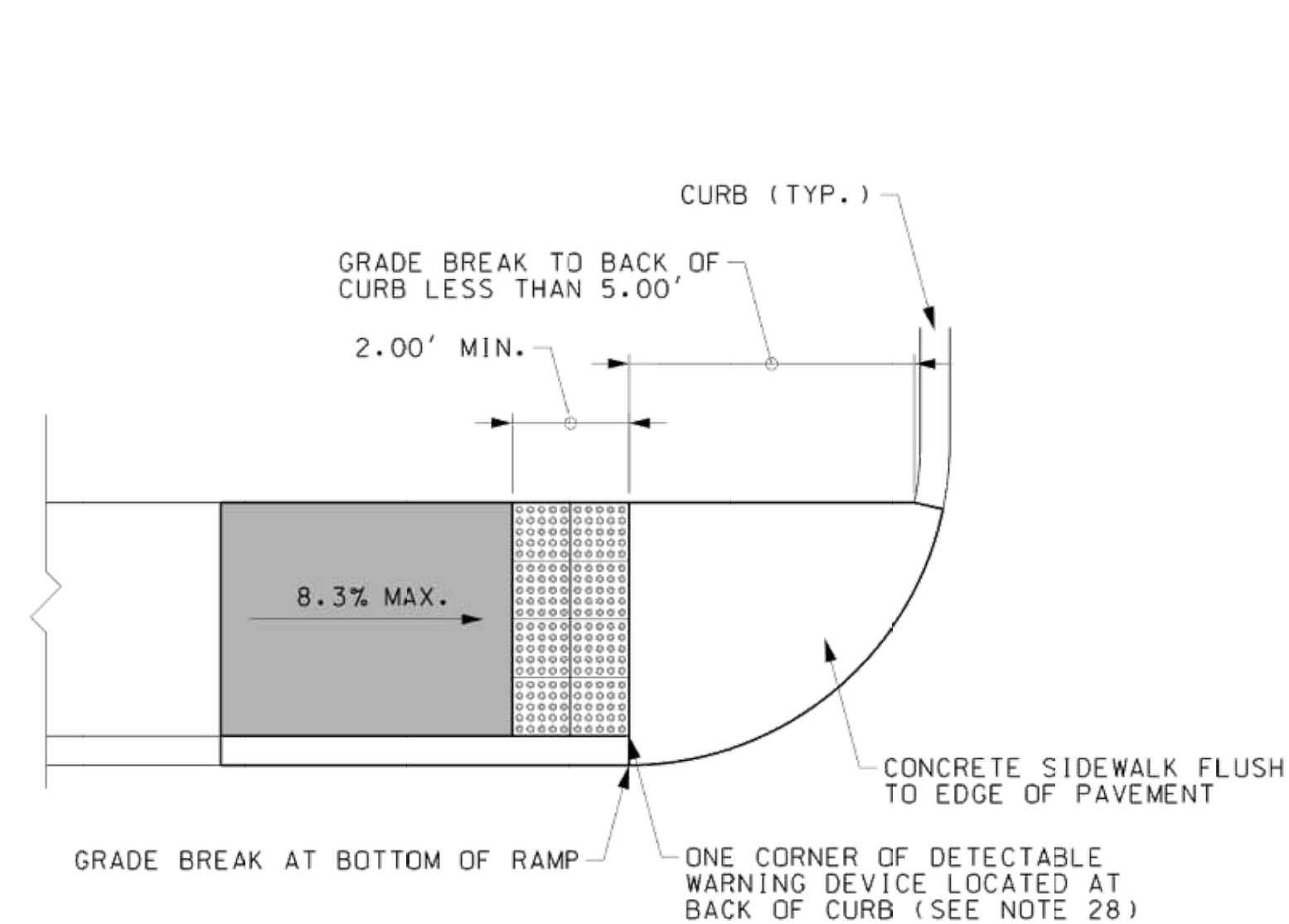


TYPE 14
SIDEWALK TO SHOULDER TRANSITION

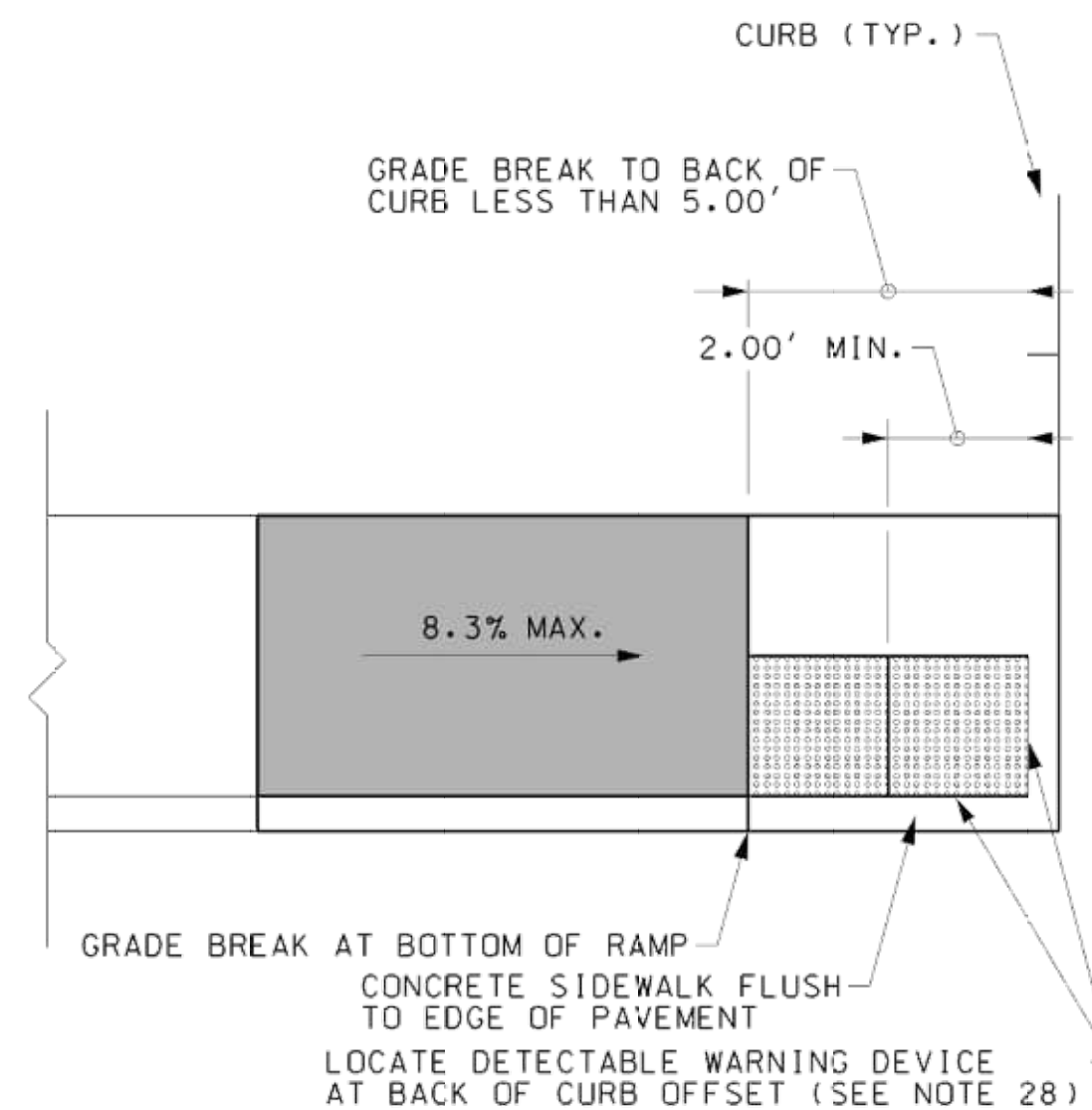
CURB RAMP CONFIGURATIONS

NOTE:
ALL NOTES REFERENCED ON THIS SHEET CAN BE FOUND ON SIDEWALK CURB RAMP DETAILS, SHEET 1 OF 9.

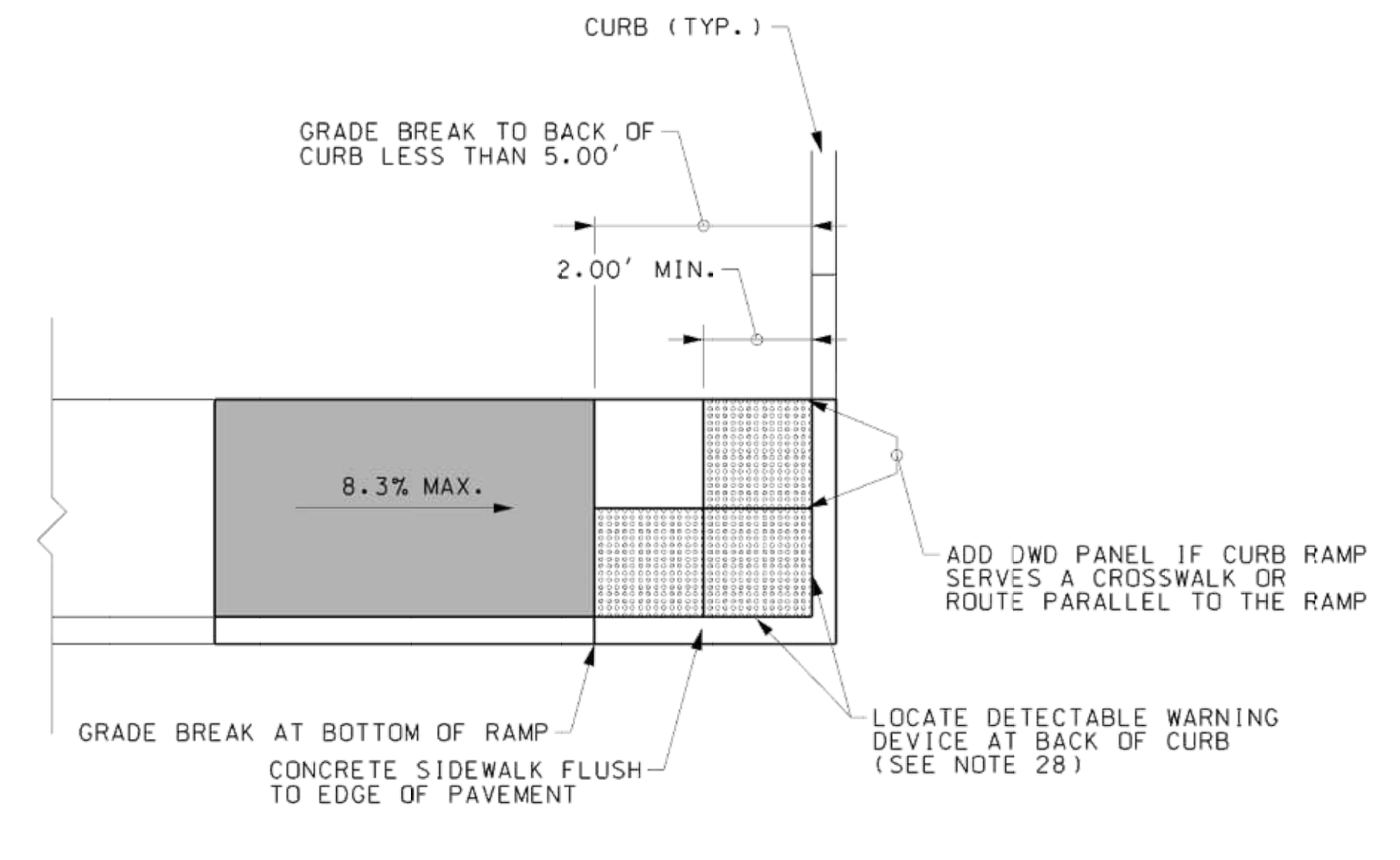
				CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION	
				DETAILS (SHEET 16 OF 21) CURB RAMP DETAILS 5	
REV	DATE	DESCRIPTION	BY		
				McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301	
		SCALE: AS SHOWN	DESIGN: BEP		
		DRAWN: MJF	PROJECT: 18022.01	DT-16	
		CHECKED: EWM	DATE: SEPTEMBER 2021	23 OF 143	



OPTION 1

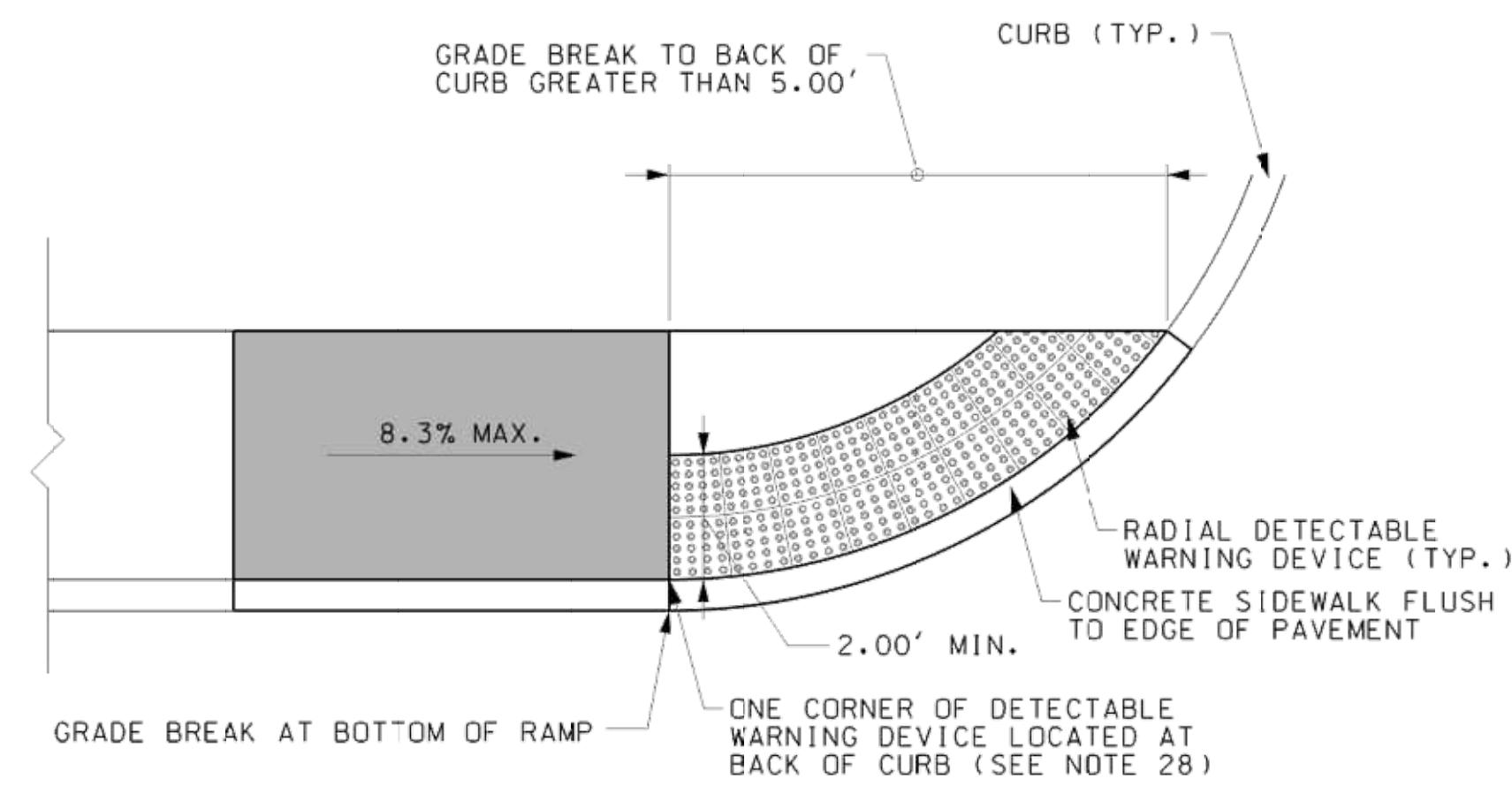


OPTION 2

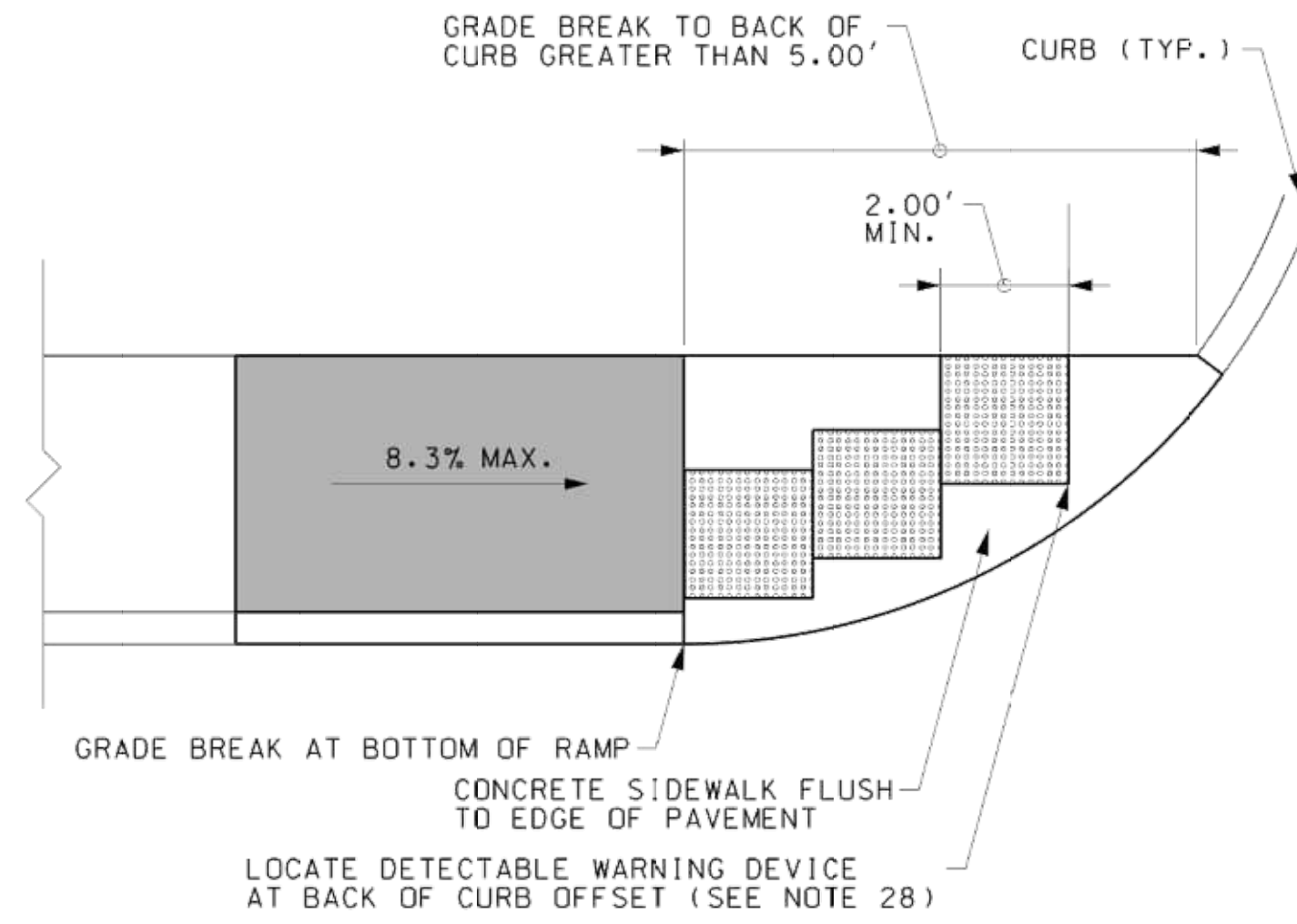


OPTION 2A

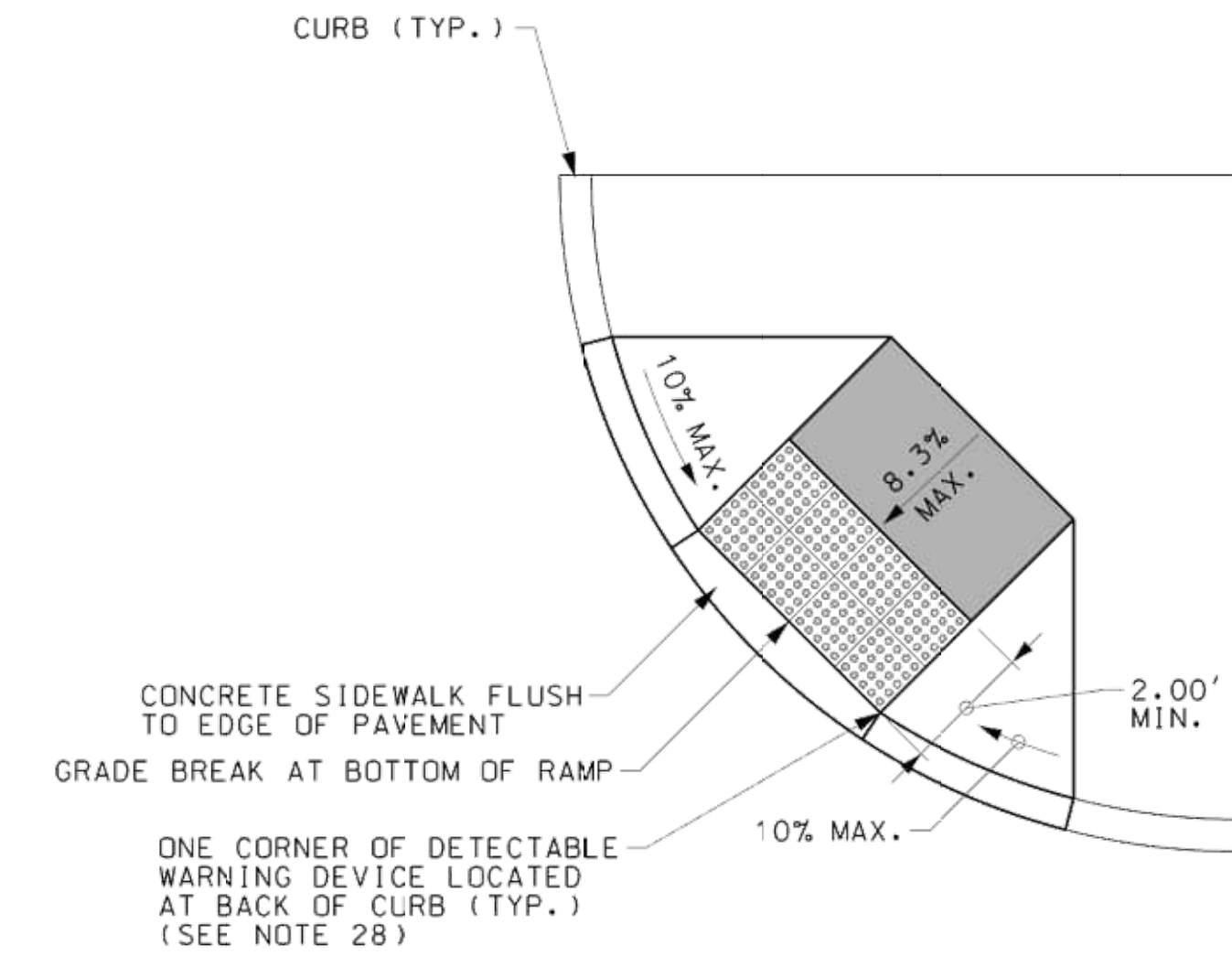
GRADE BREAK TO BACK OF CURB LESS THAN 5.00'



OPTION 3




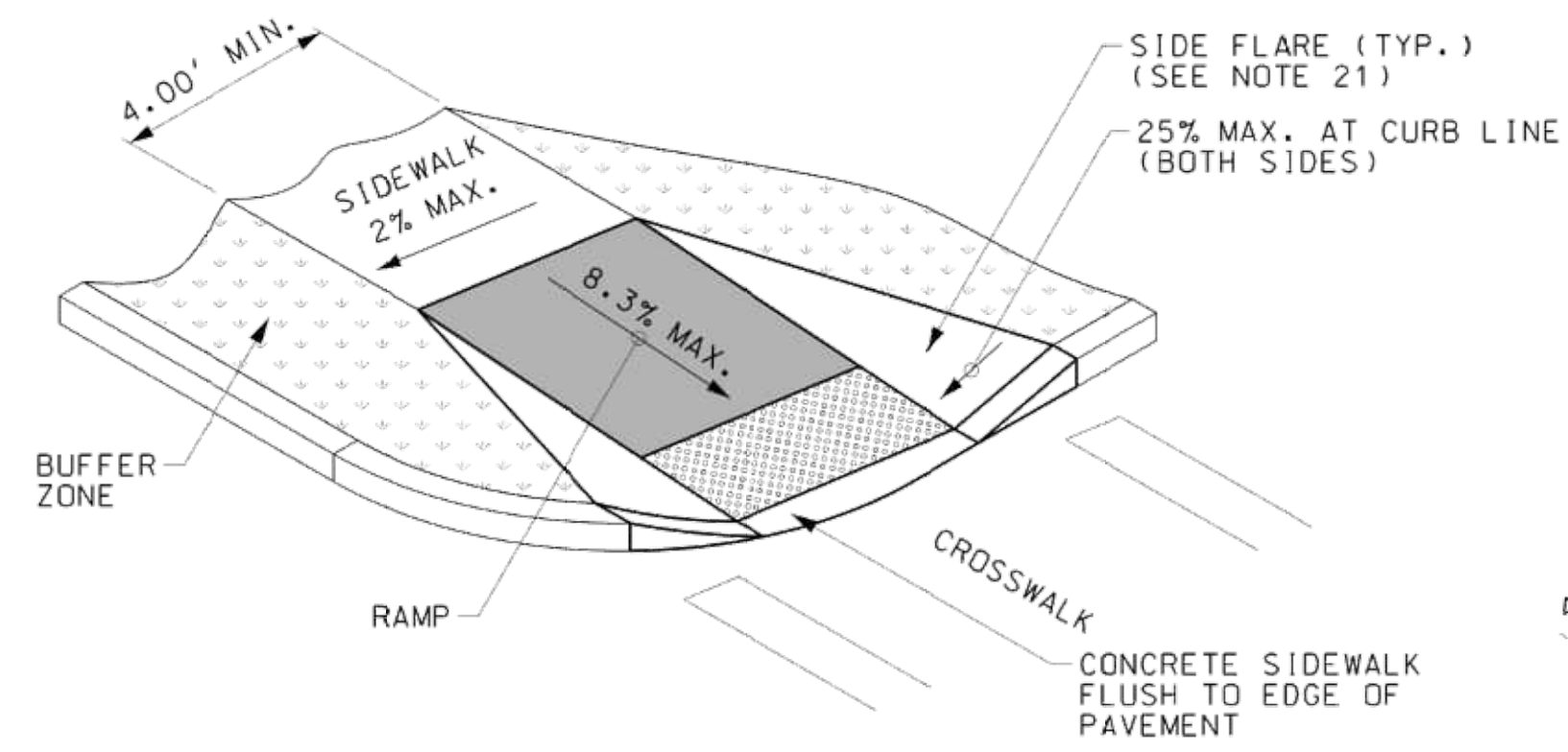
OPTION 4



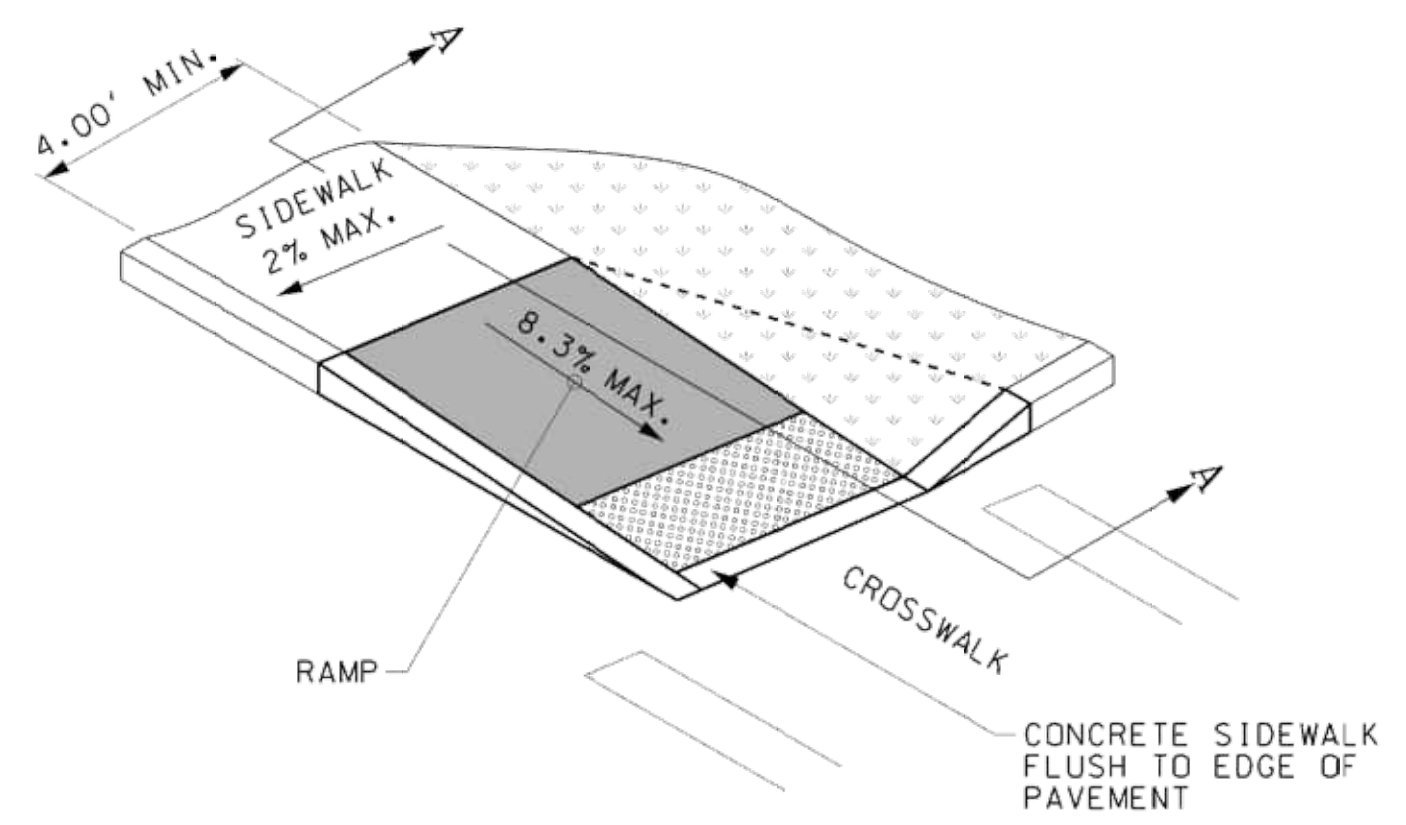
OPTION 5

GRADE BREAK TO BACK OF CURB GREATER THAN 5.00'

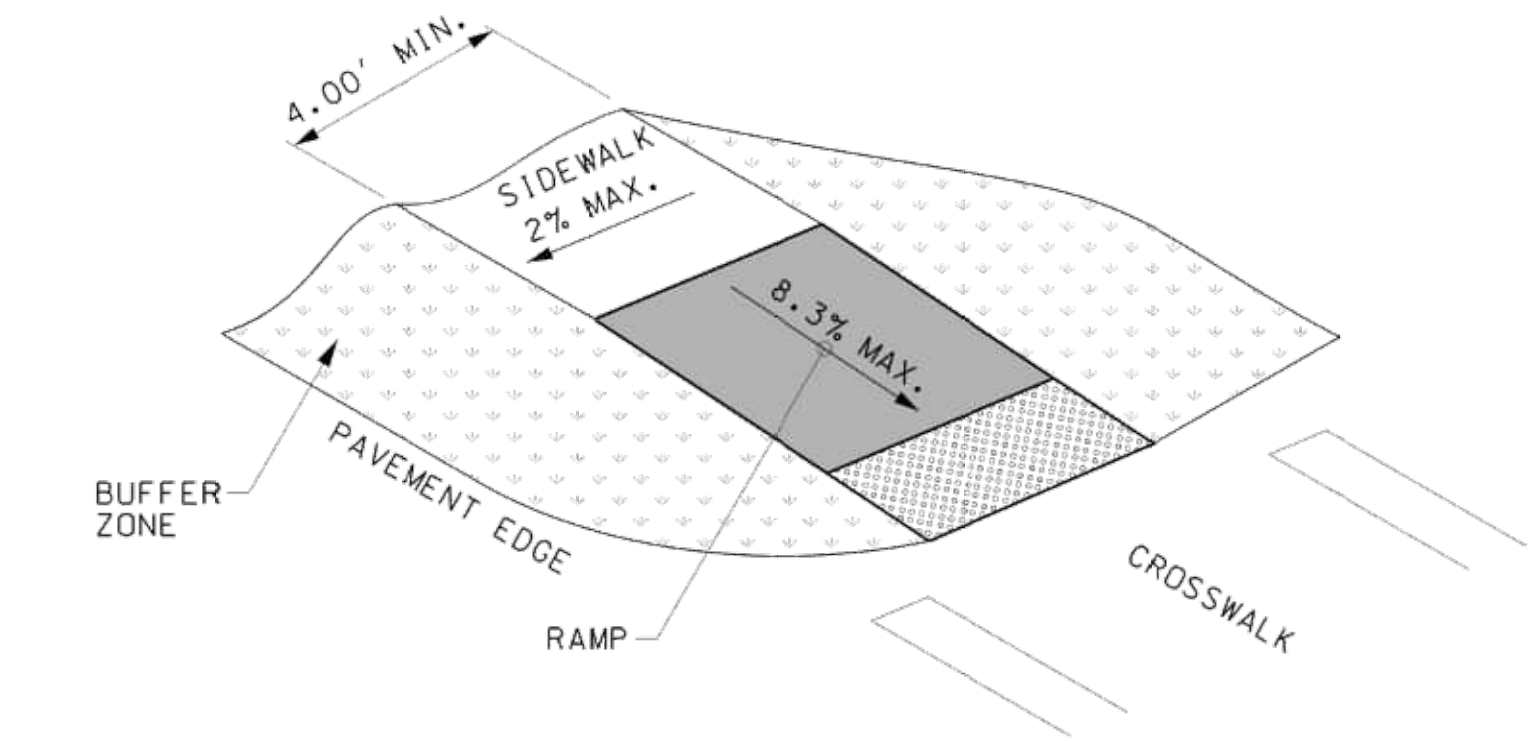
				CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION	
				DETAILS (SHEET 17 OF 21) CURB RAMP DETAILS 6	
REV	DATE	DESCRIPTION	BY	SCALE: AS SHOWN	DESIGN: BEP
				DRAWN: MJF	PROJECT: 18022.01
				CHECKED: EWM	DATE: SEPTEMBER 2021
 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301				DT-17 24 OF 143	



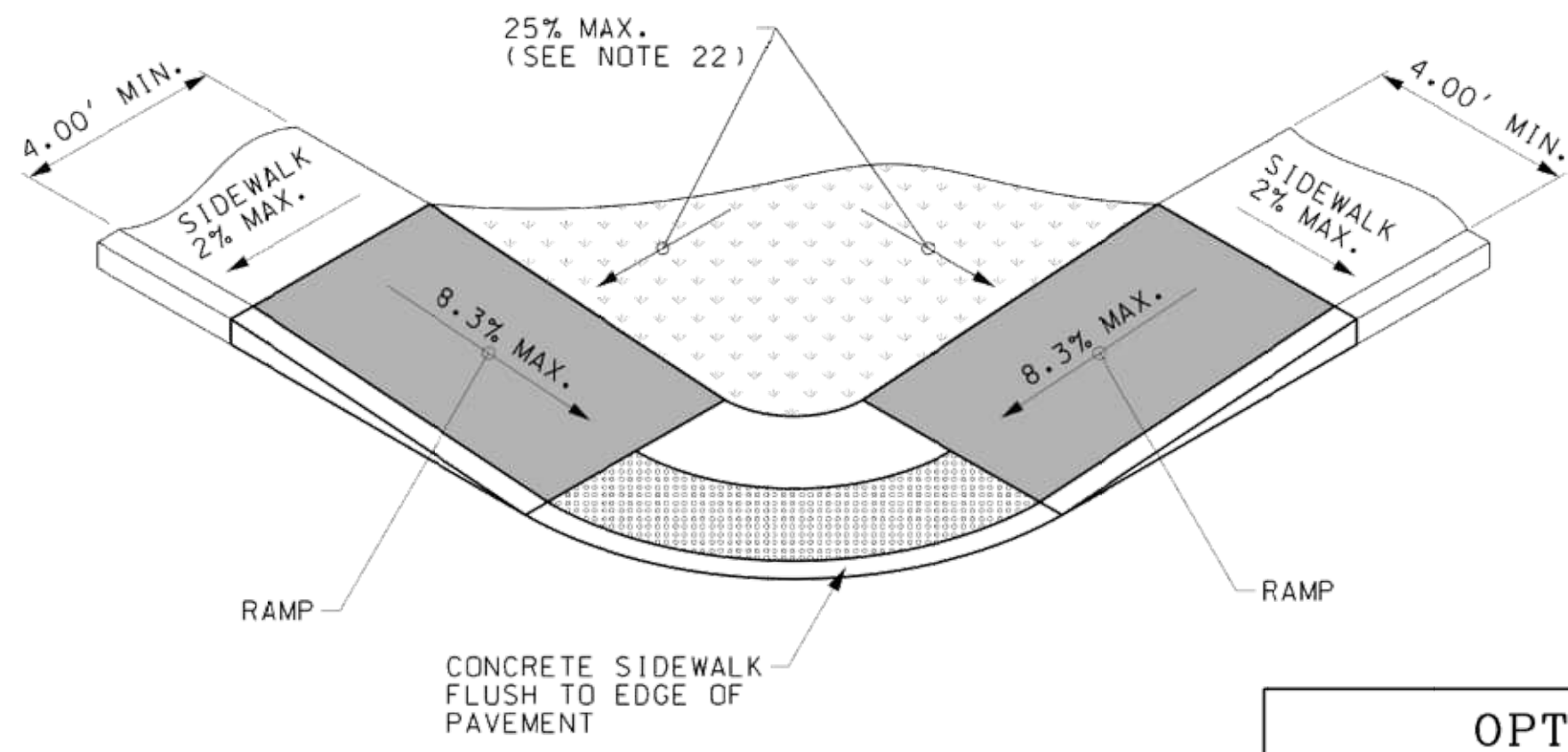
OPTION A
FLARED CONCRETE



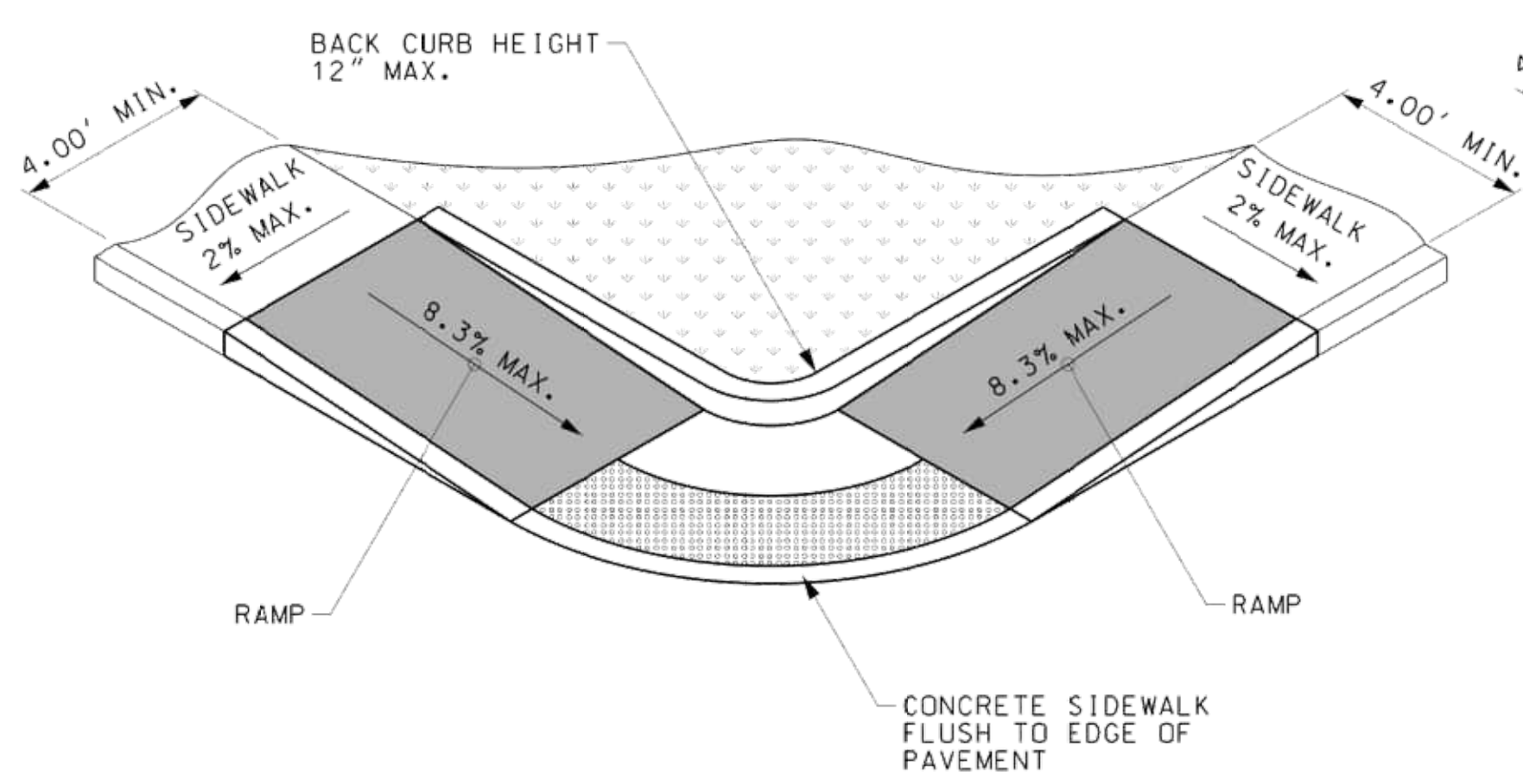
OPTION B
GRADED EARTH



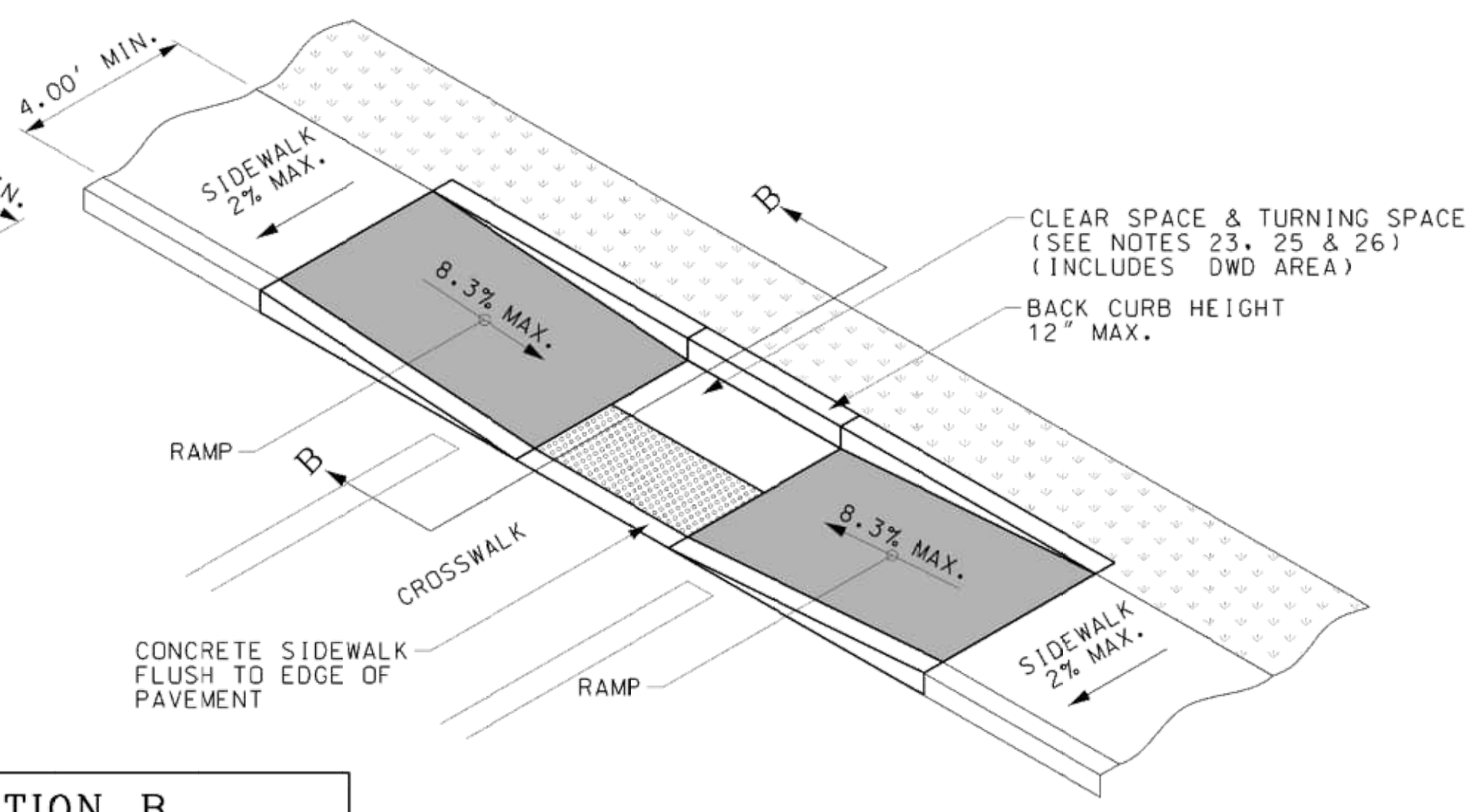
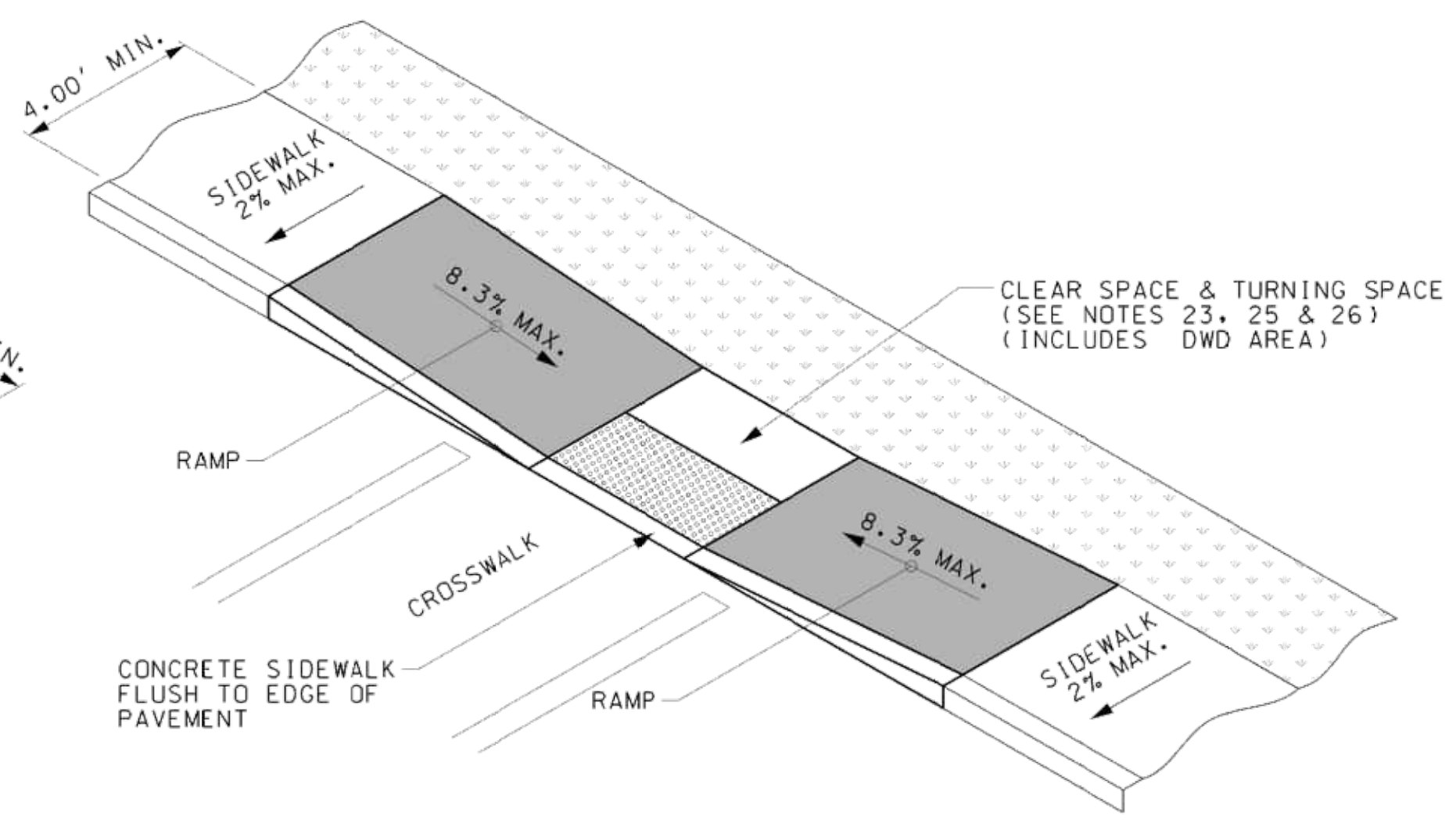
OPTION C
UNCURBED INTERSECTION



OPTION A
GRADED EARTH AND TURF



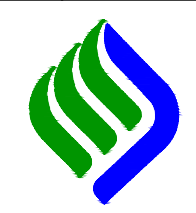
OPTION B
BACK CURB

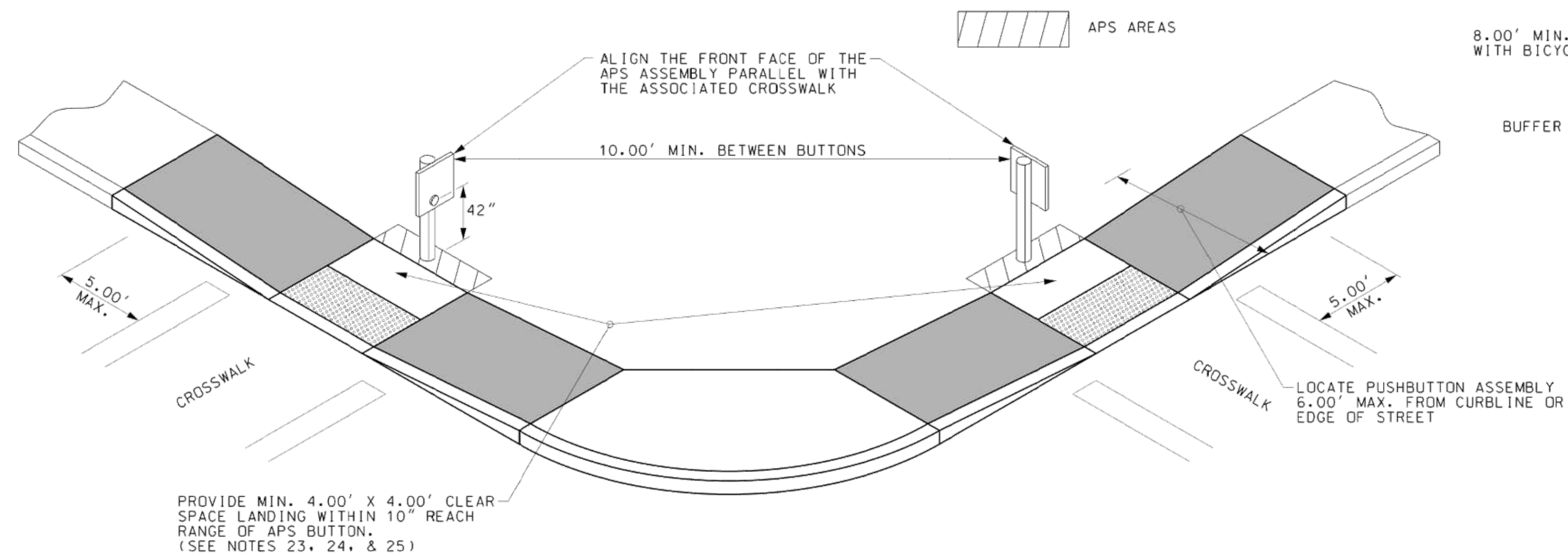


RAMP SIDE CONFIGURATIONS

RAMP BACK TREATMENTS

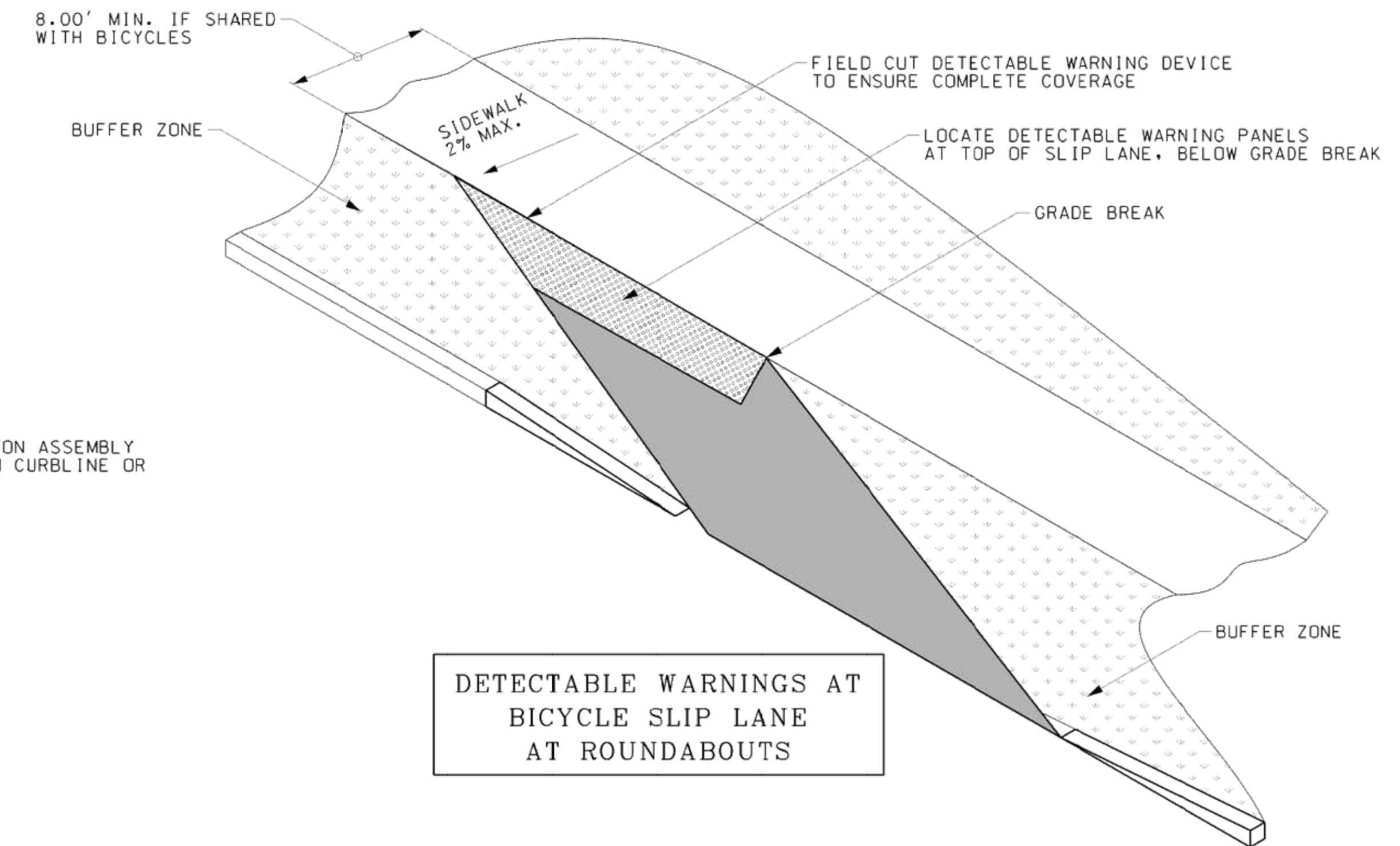
NOTE:
ALL NOTES REFERENCED ON THIS SHEET CAN BE FOUND ON SIDEWALK CURB RAMP DETAILS, SHEET 1 OF 9.

				CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION	
				DETAILS (SHEET 18 OF 21) CURB RAMP DETAILS 7	
REV	DATE	DESCRIPTION	BY		
				 McFarland Johnson	
				53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301	
		SCALE: AS SHOWN	DESIGN: BEP		
		DRAWN: MJF	PROJECT: 18022.01	DT-18	
		CHECKED: EWM	DATE: SEPTEMBER 2021	25 OF 143	

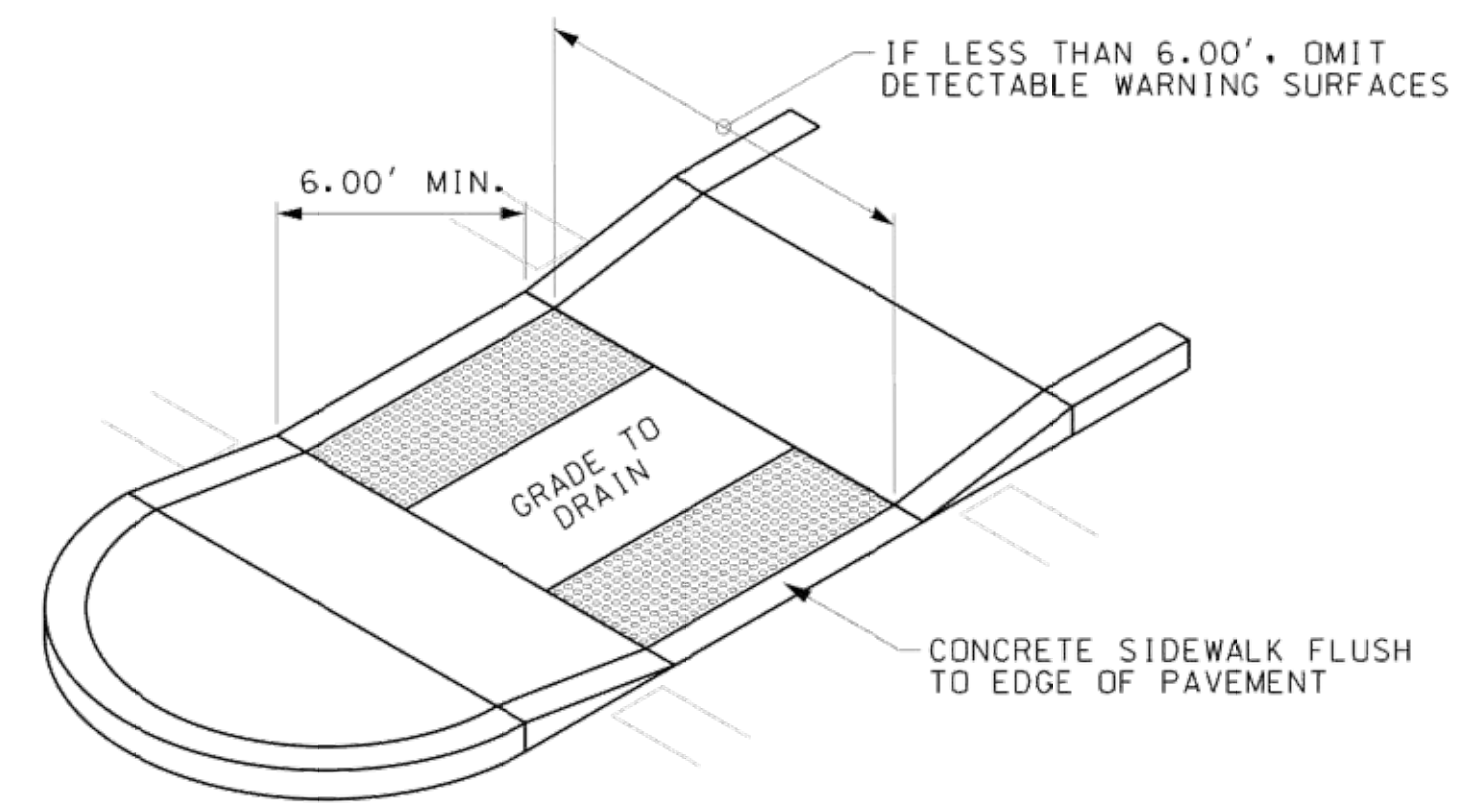


PROVIDE MIN. 4.00' X 4.00' CLEAR SPACE LANDING WITHIN 10" REACH RANGE OF APS BUTTON. (SEE NOTES 23, 24, & 25)

ACCESSIBLE PEDESTRIAN SIGNAL (APS) PUSHBUTTON LOCATION

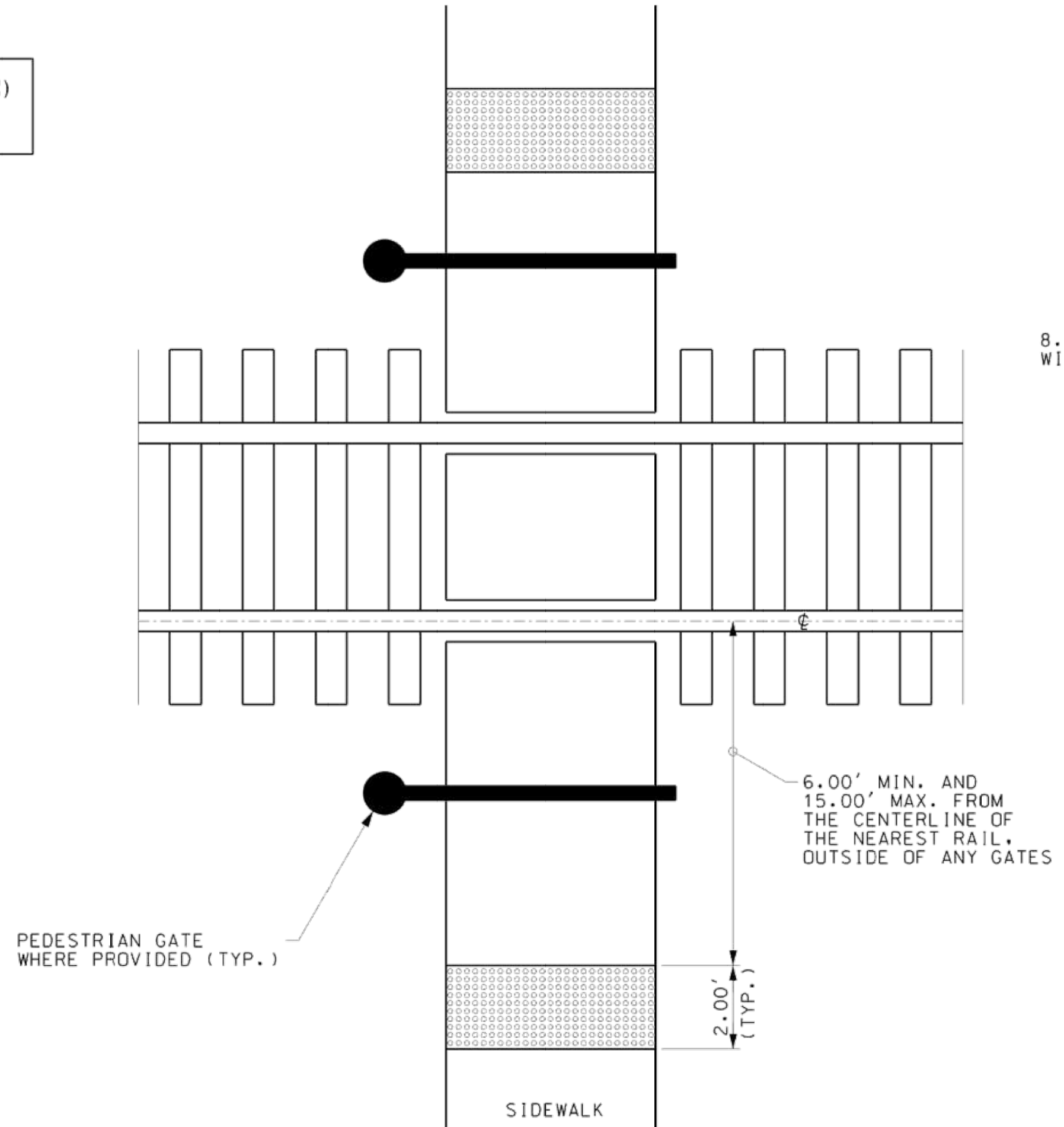


DETECTABLE WARNINGS AT BICYCLE SLIP LANE AT ROUNDABOUTS

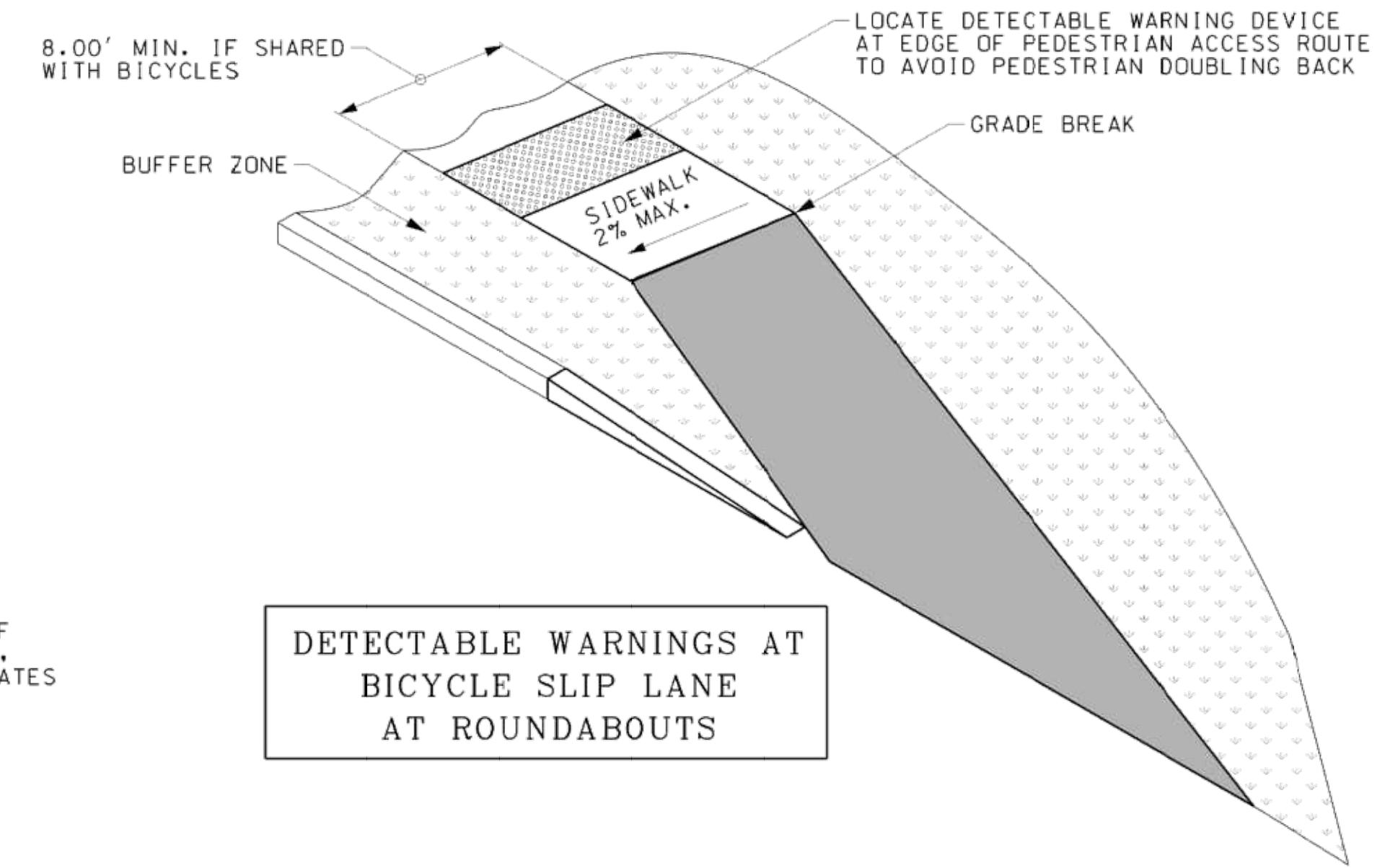


DETECTABLE WARNINGS AT PEDESTRIAN REFUGE ISLANDS

NON-ELEVATED CROSSING



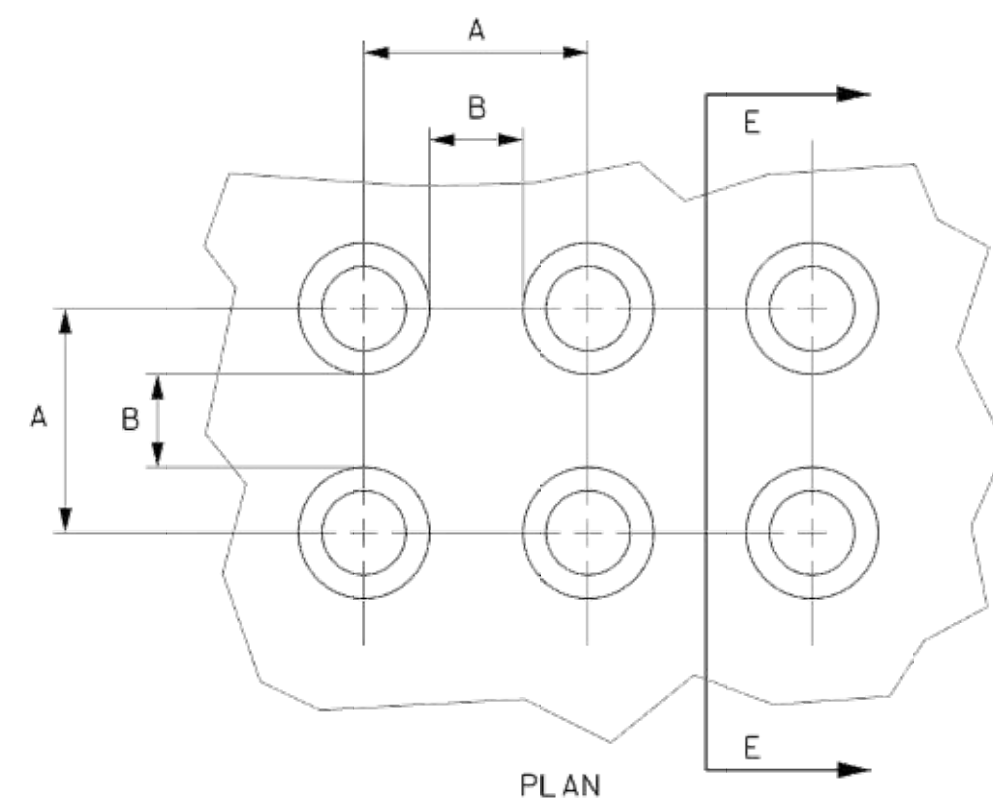
DETECTABLE WARNINGS AT RAILROAD CROSSING



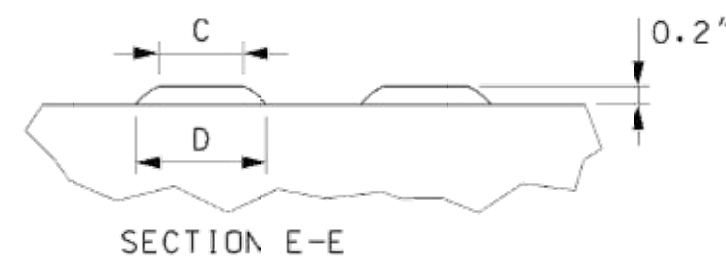
DETECTABLE WARNINGS AT BICYCLE SLIP LANE AT ROUNDABOUTS

NOTE:
ALL NOTES REFERENCED ON THIS SHEET CAN BE FOUND ON SIDEWALK CURB RAMP DETAILS, SHEET 1 OF 9.

				CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION	
				DETAILS (SHEET 19 OF 21) CURB RAMP DETAILS 8	
REV	DATE	DESCRIPTION	BY		
				McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301	
SCALE: AS SHOWN		DESIGN: BEP		DT-19 26 OF 143	
DRAWN: MJF		PROJECT: 18022.01			
CHECKED: EWM		DATE: SEPTEMBER 2021			

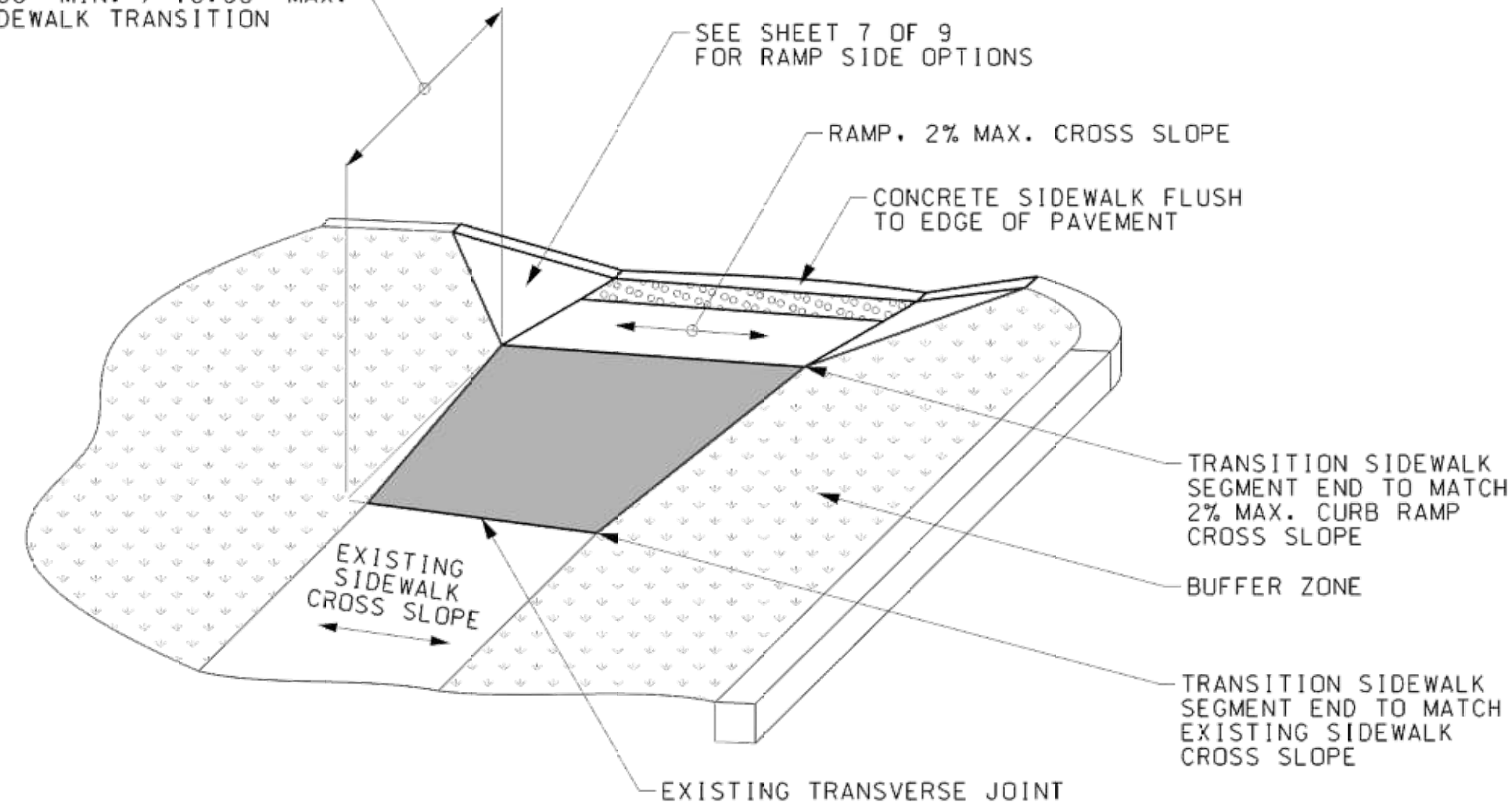


TRUNCATED DOME DIMENSIONS		
DIM.	MIN. (IN)	MAX. (IN)
A	1.6"	2.4"
B	0.65"	1.5"
C	50% - 65% OF D DIM.	
D	0.9"	1.4"



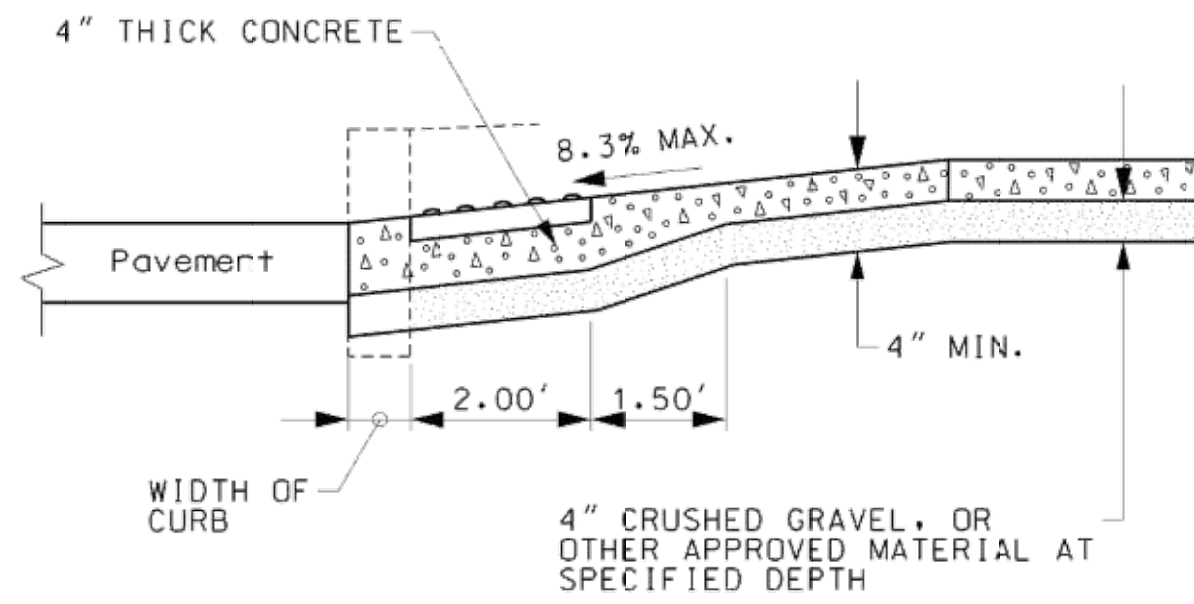
**DETECTABLE WARNING DEVICES (DWD)
TRUNCATED DOME DETAILS**

5.00' MIN. / 10.00' MAX.
SIDEWALK TRANSITION



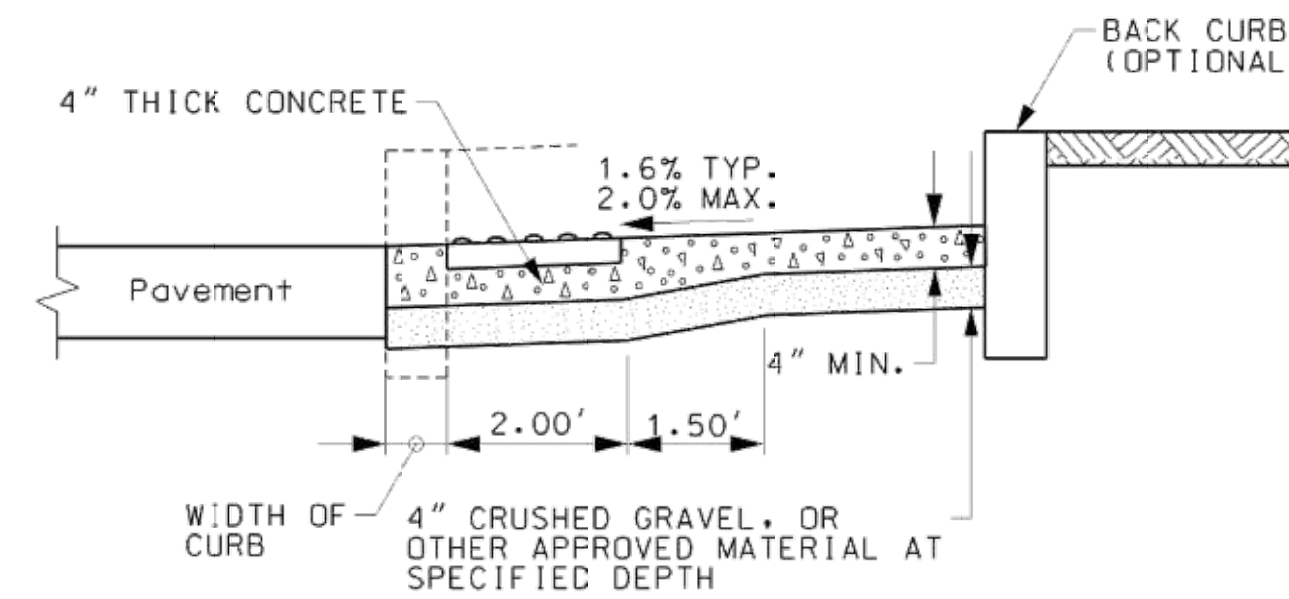
**TRANSITION BETWEEN CURB RAMP
AND EXISTING SIDEWALK**

USE FOR CROSS SLOPE AND WIDTH TRANSITIONS



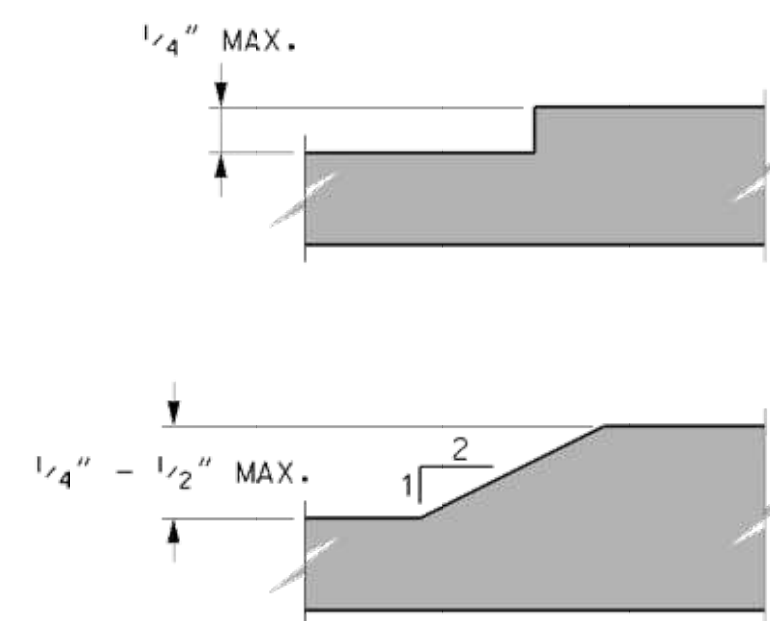
SECTION A-A

SEE SHEET 7 OF 9



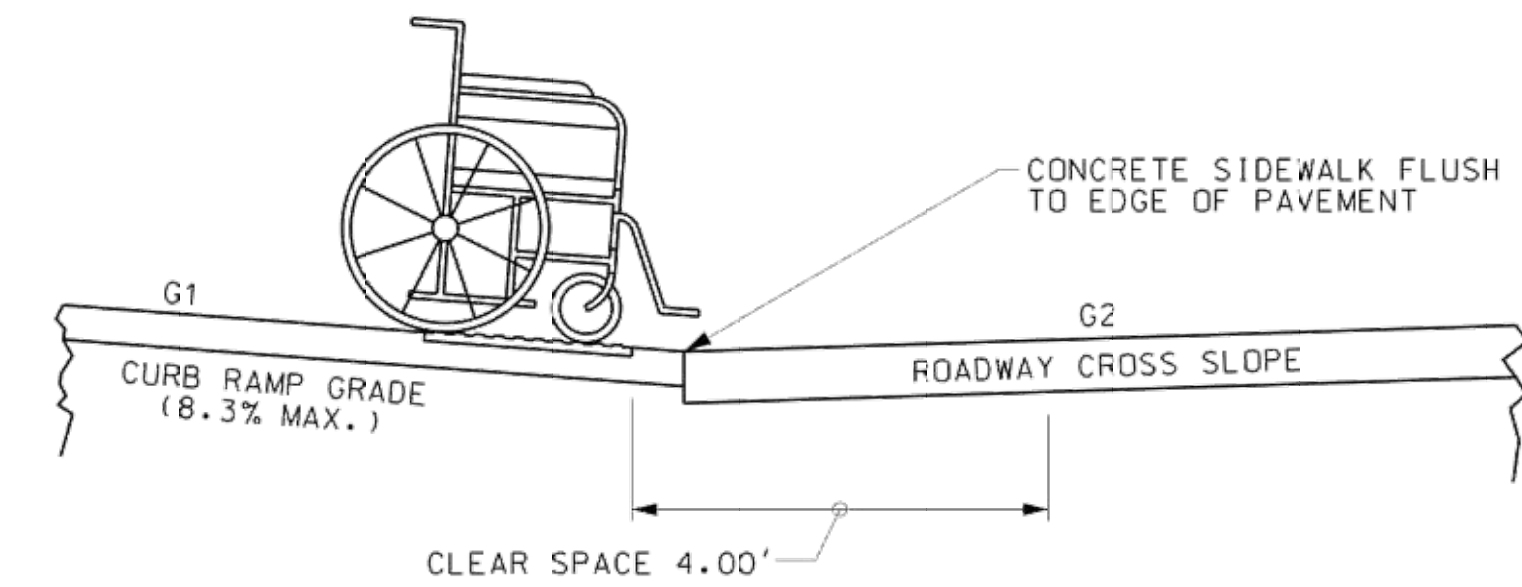
SECTION B-B

SEE SHEET 7 OF 9



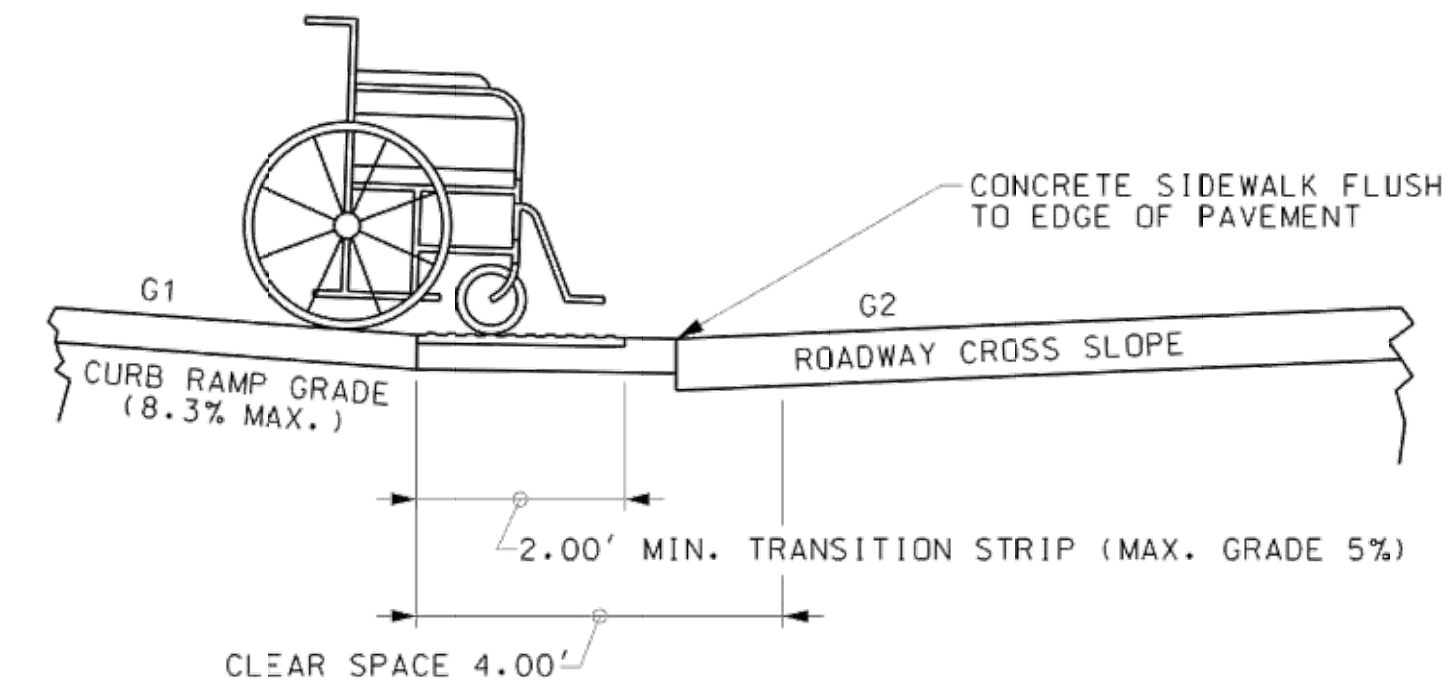
VERTICAL SURFACE DISCONTINUITIES

SEE NOTE 5



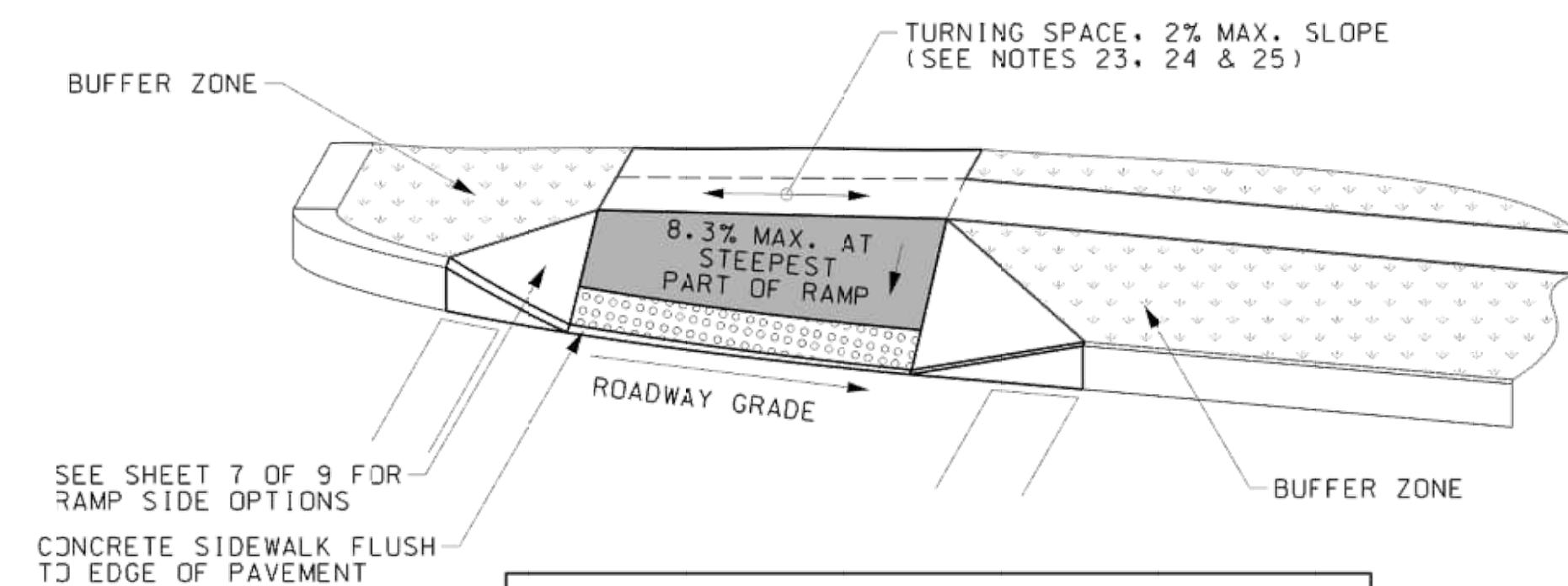
COUNTER SLOPE CONDITION 1

$A = G2 - G1$
ALGEBRAIC DIFFERENCE (A) BETWEEN ROADWAY CROSS SLOPE
AND CURB RAMP GRADE IS LESS THAN 13.3%.



COUNTER SLOPE CONDITION 2

$A = G2 - G1$
ALGEBRAIC DIFFERENCE (A) BETWEEN ROADWAY SLOPE
AND CURB RAMP GRADE IS GREATER THAN 13.3%.
TRANSITION STRIP REQUIRED (MAX. GRADE 5%)




CURB RAMP CROSS SLOPE TRANSITION

REFER TO NOTE 20 FOR
CROSS SLOPE REQUIREMENTS

NOTE:

ALL NOTES REFERENCED ON THIS SHEET CAN BE FOUND ON SIDEWALK CURB RAMP DETAILS, SHEET 1 OF 9.

REV	DATE	DESCRIPTION	BY



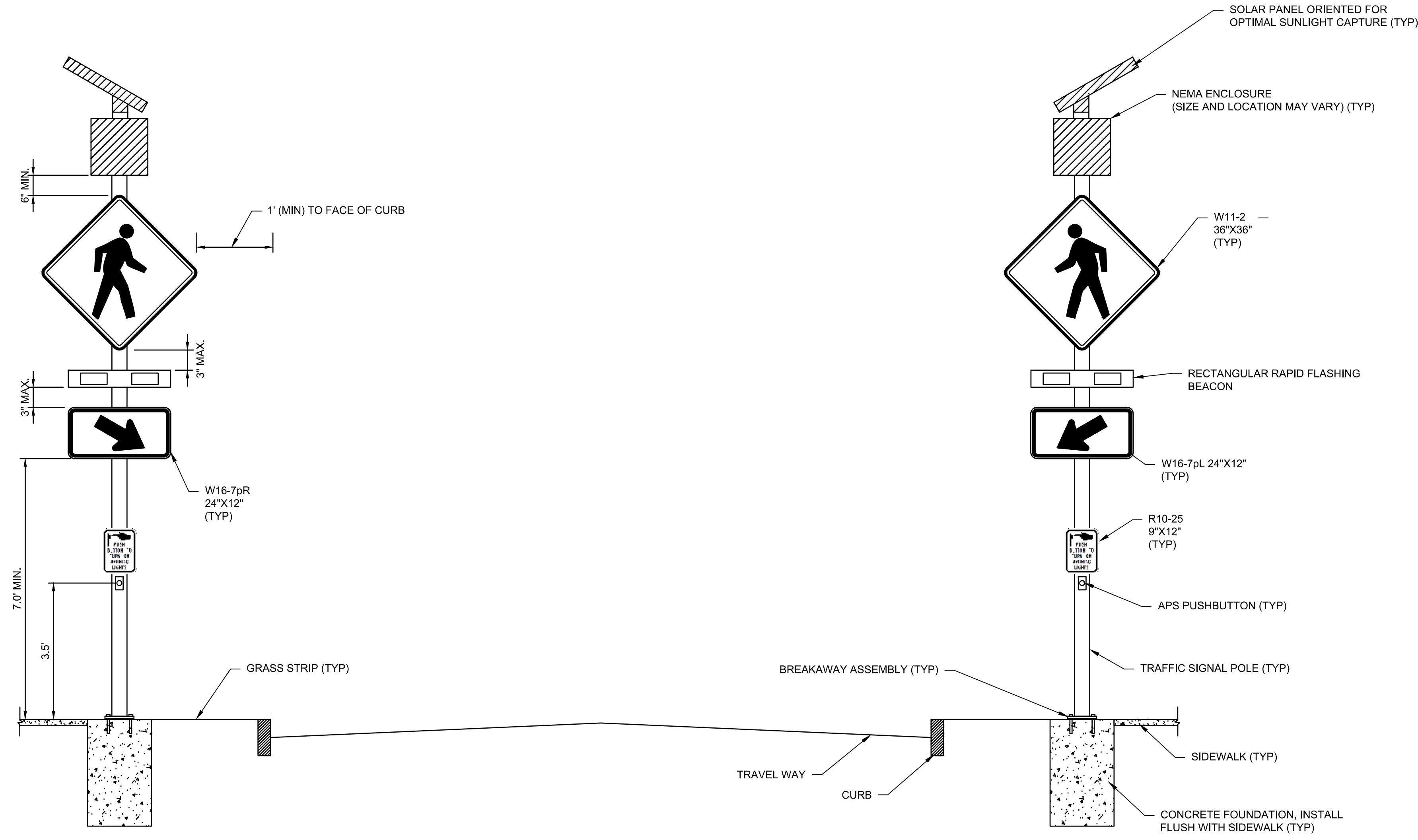
McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

**CITY OF KEENE
KEENE, NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION**

**DETAILS (SHEET 20 OF 21)
CURB RAMP DETAILS 9**

SCALE: AS SHOWN DESIGN: BEP
DRAWN: MJF PROJECT: 18022.01
CHECKED: EWM DATE: SEPTEMBER 2021


DT-20
27 OF 143

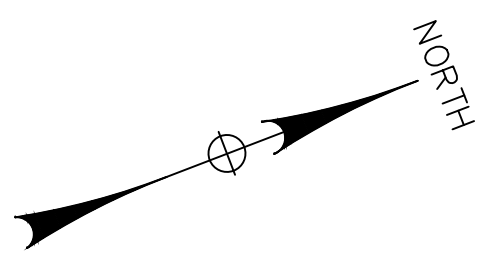


NOTES:

- ITEMS 616.2610X SHALL INCLUDE SIGNS, SOLAR PANELS, NEMA ENCLOSURES, POLES, BREAKAWAY BASES, CONCRETE FOUNDATIONS, PEDESTRIAN ACCESSIBLE PUSH BUTTONS, AND SADDLES FOR SIGN MOUNTING, WIRELESS INTERCONNECTION SYSTEM, ALL NECESSARY WIRING, ATTACHMENT BRACKETS AND MATERIALS REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONING SYSTEM SHALL BE CONSIDERED INCIDENTAL TO ITEMS 616.2610X. SEE SPECIAL PROVISION.

RECTANGULAR RAPID FLASHING BEACON (RRFB)
NOT TO SCALE

				CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION	
				DETAILS (SHEET 21 OF 21) RRFB DETAILS	
REV	DATE	DESCRIPTION	BY		
 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301				SCALE: ---	DESIGN: BEP
				DRAWN: MJF	PROJECT: 18022.01
				CHECKED: EWM	DATE: SEPTEMBER 2021
					DT-21 28 OF 143



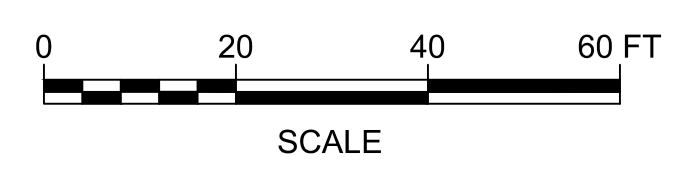
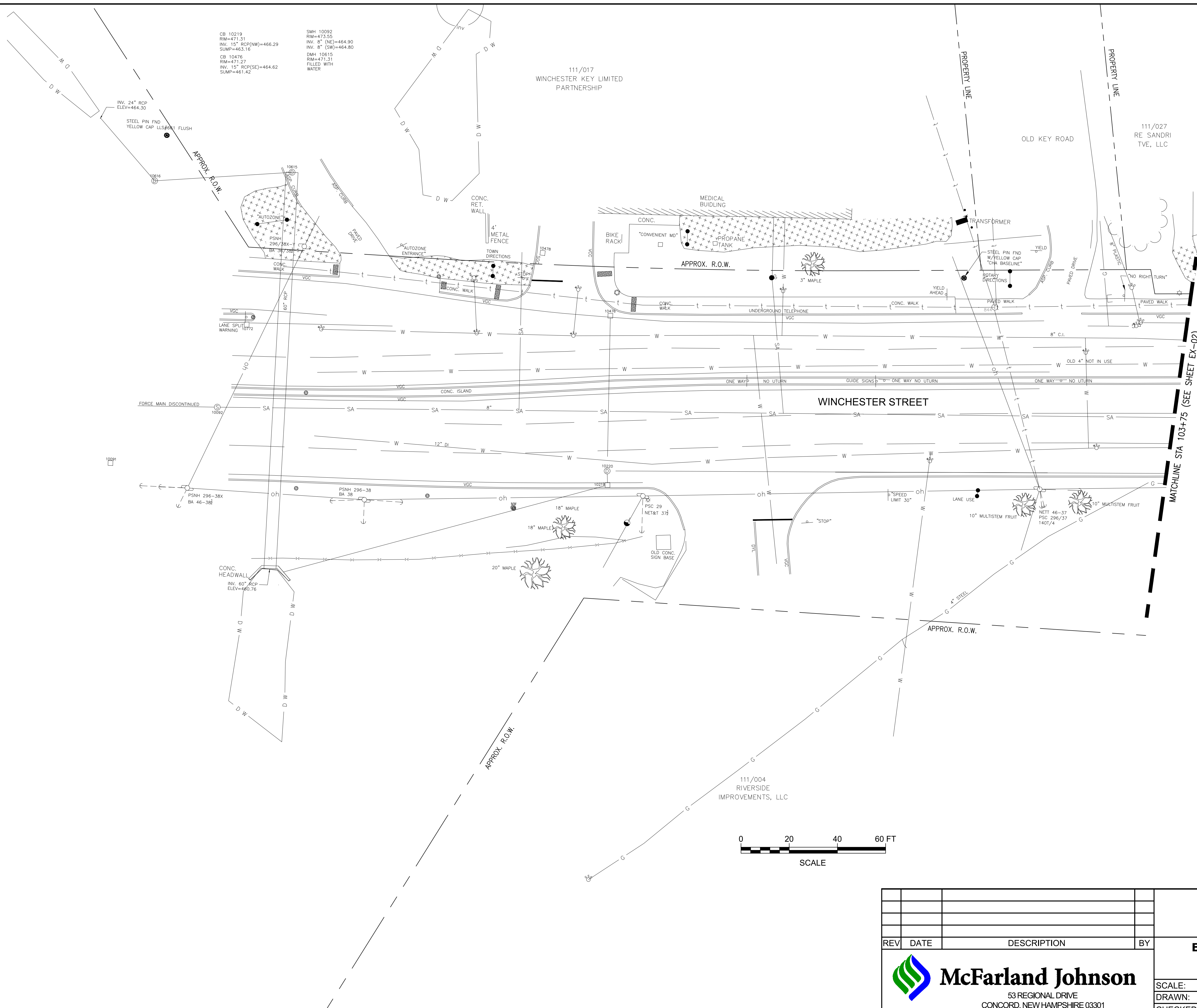
CB 10219
 RIM=471.31
 INV. 15" RCP(NW)=466.29
 SUMP=463.16
 CB 10476
 RIM=471.27
 INV. 15" RCP(SE)=464.62
 SUMP=461.42

SMH 10092
 RIM=473.55
 INV. 5" (NE)=464.90
 INV. 5" (SW)=464.80
 DMH 10615
 RIM=471.31
 FILLED WITH WATER

111/017
 WINCHESTER KEY LIMITED
 PARTNERSHIP


111/027
 RE SANDRI
 TVE, LLC

111/004
 RIVERSIDE
 IMPROVEMENTS, LLC



MATCHLINE STA 103+75 (SEE SHEET EX-02)

REV	DATE	DESCRIPTION	BY

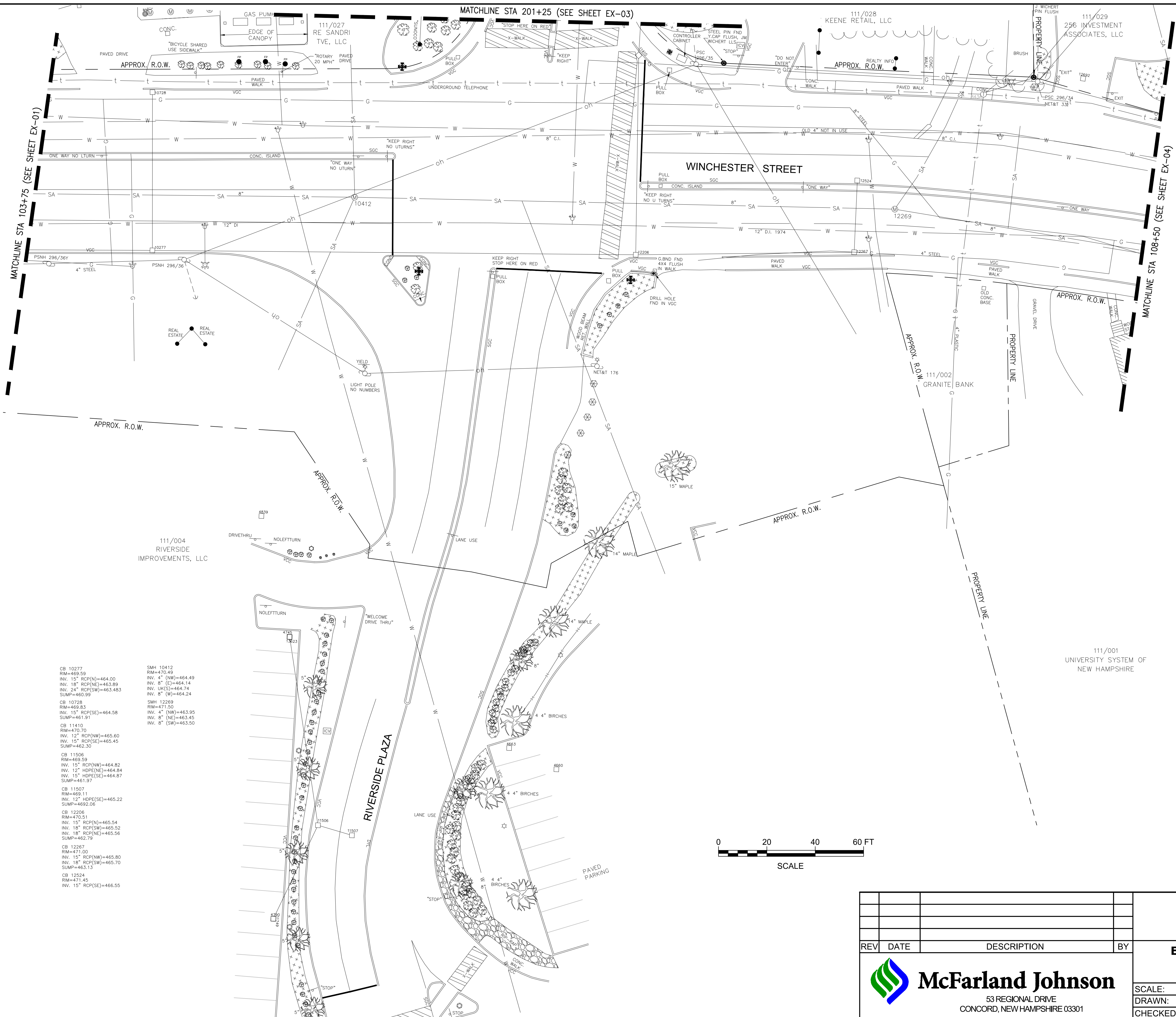
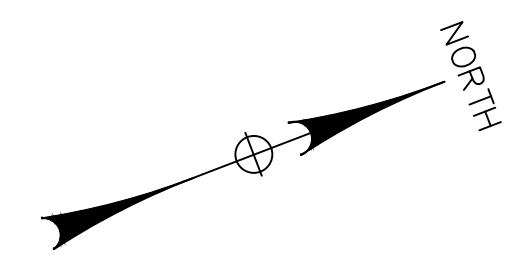

McFarland Johnson
 53 REGIONAL DRIVE
 CONCORD, NEW HAMPSHIRE 03301

CITY OF KEENE
 KEENE, NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION

EXISTING CONDITIONS PLAN
(SHEET 1 OF 6)

SCALE: 1"=20'	DESIGN: BEP	EX-01 29 OF 143
DRAWN: MJF	PROJECT: 18022.01	
CHECKED: EWM	DATE: SEPTEMBER 2021	

M:\18022.01 KEENE WINCHESTER FINAL DRAWINGS\SHEET FILES\18022.01-EX-01.DWG

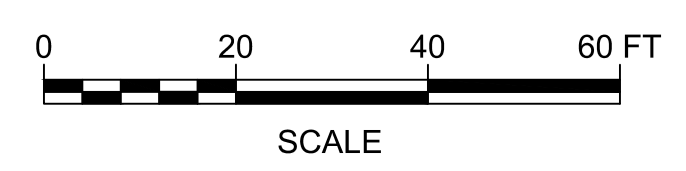


MATCHLINE STA 103+75 (SEE SHEET EX-01)

MATCHLINE STA 201+25 (SEE SHEET EX-03)

MATCHLINE STA 108+50 (SEE SHEET EX-04)

- CB 10277
RM=469.59
INV. 15" RCP(N)=464.00
INV. 18" RCP(NE)=463.89
INV. 24" RCP(SW)=463.483
SUMP=460.99
- CB 10728
RM=469.83
INV. 15" RCP(SE)=464.58
SUMP=461.91
- CB 11410
RM=470.70
INV. 12" RCP(NW)=465.60
INV. 15" RCP(SE)=465.45
SUMP=462.30
- CB 11506
RM=469.59
INV. 15" RCP(NW)=464.82
INV. 12" HDPE(NE)=464.84
INV. 15" HDPE(SE)=464.87
SUMP=461.97
- CB 11507
RM=469.11
INV. 12" HDPE(SE)=465.22
SUMP=469.09
- CB 12206
RM=470.51
INV. 15" RCP(N)=465.54
INV. 18" RCP(SW)=465.52
INV. 18" RCP(NE)=465.56
SUMP=462.79
- CB 12267
RM=471.00
INV. 15" RCP(NW)=465.80
INV. 18" RCP(SW)=465.70
SUMP=463.13
- CB 12524
RM=471.45
INV. 15" RCP(SE)=466.55
- SMH 10412
RM=470.49
INV. 4" (NW)=464.49
INV. 8" (E)=464.14
INV. UN(S)=464.14
INV. 8" (W)=464.24
- SMH 12269
RM=471.50
INV. 4" (NW)=463.95
INV. 8" (NE)=463.45
INV. 8" (SW)=463.50



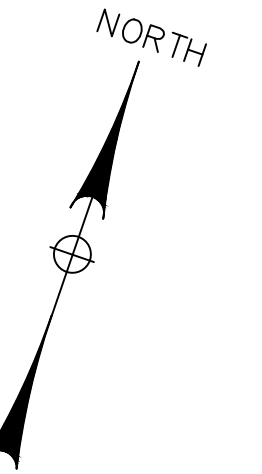
McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

REV	DATE	DESCRIPTION	BY

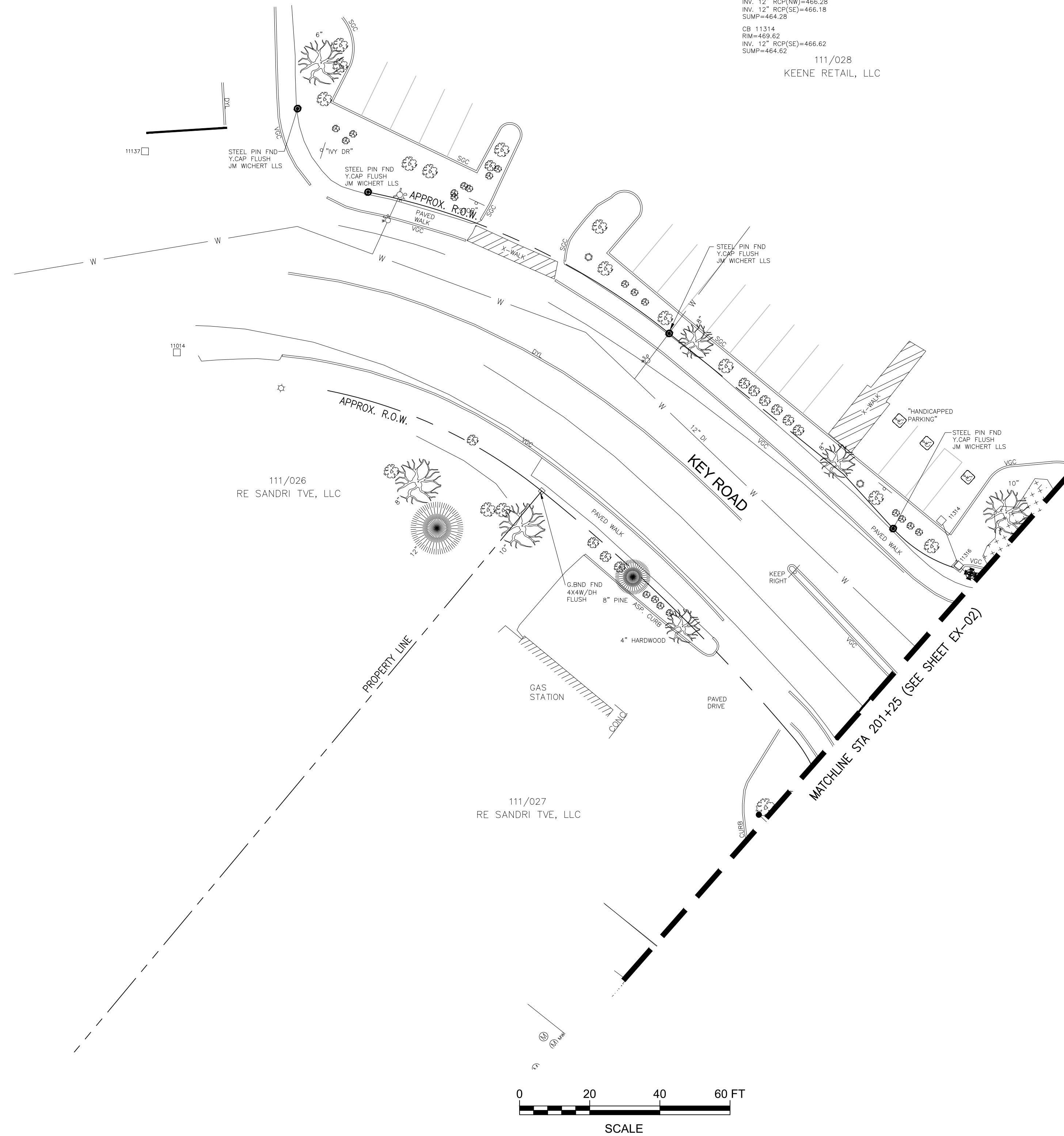
**CITY OF KEENE
KEENE, NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION
EXISTING CONDITIONS PLAN
(SHEET 2 OF 6)**

SCALE: 1"=20'	DESIGN: BEP	EX-02 30 OF 143
DRAWN: MJF	PROJECT: 18022.01	
CHECKED: EWM	DATE: SEPTEMBER 2021	


M:\18022.01 KEENE WINCHESTER FINAL DRAWINGS\SHEET FILES\18022.01-EXST.DWG



CB 11316
 RIM=470.18
 INV. 12" RCP(NW)=466.28
 INV. 12" RCP(SE)=466.18
 SUMP=464.28
 CB 11314
 RIM=469.62
 INV. 12" RCP(SE)=466.62
 SUMP=464.62
 111/028
 KEENE RETAIL, LLC



REV	DATE	DESCRIPTION	BY

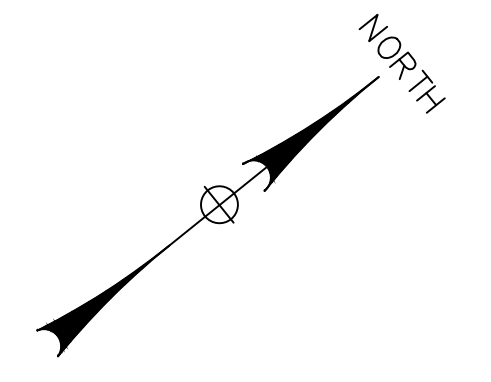

McFarland Johnson
 53 REGIONAL DRIVE
 CONCORD, NEW HAMPSHIRE 03301

CITY OF KEENE
 KEENE, NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION

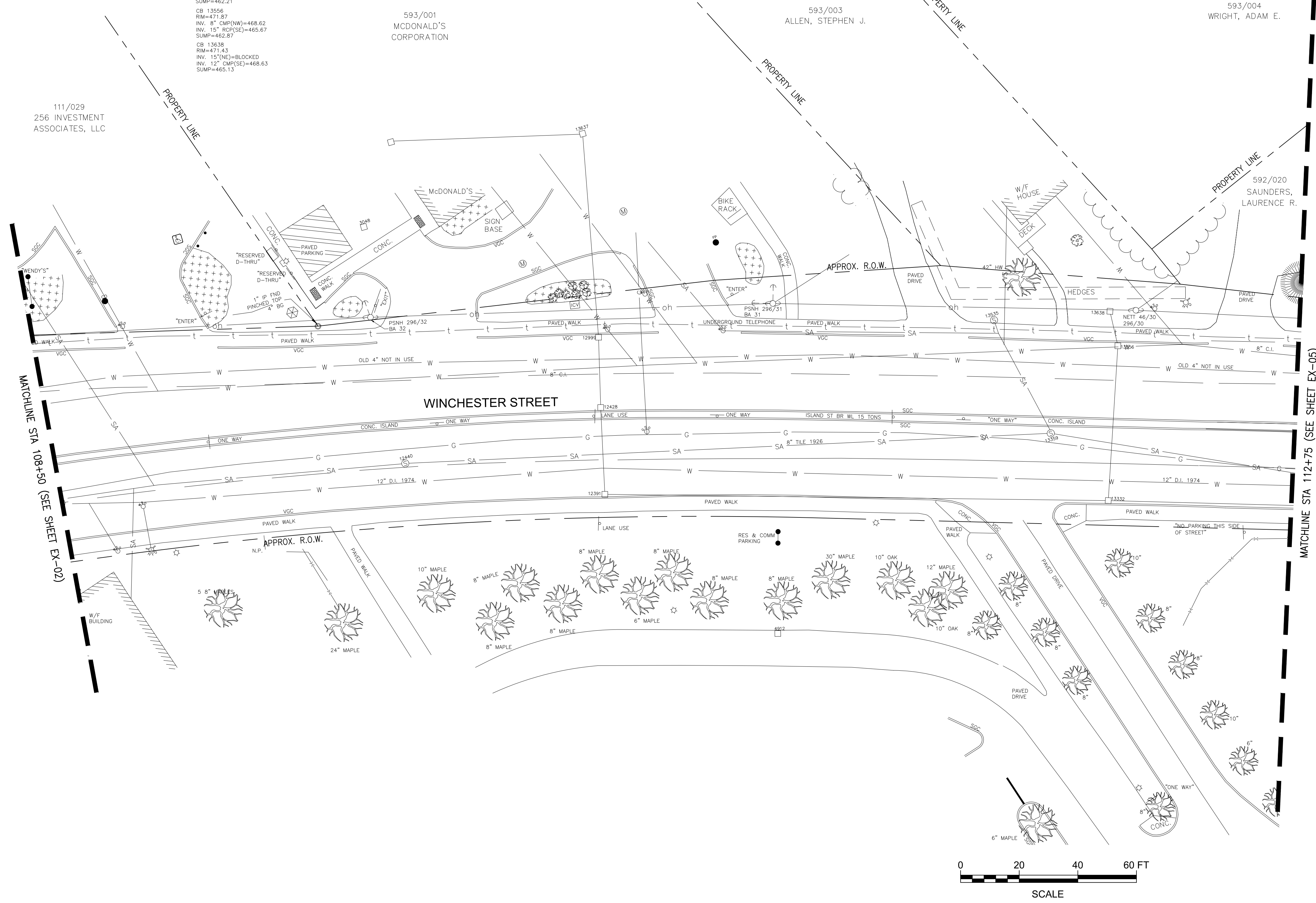
EXISTING CONDITIONS PLAN
(SHEET 3 OF 6)

SCALE: 1"=20'	DESIGN: BEP	EX-03 31 OF 143
DRAWN: MJF	PROJECT: 18022.01	
CHECKED: EWM	DATE: SEPTEMBER 2021	

M:\18022.01 KEENE WINCHESTER FINAL DRAWINGS\18022.01-EXST.DWG

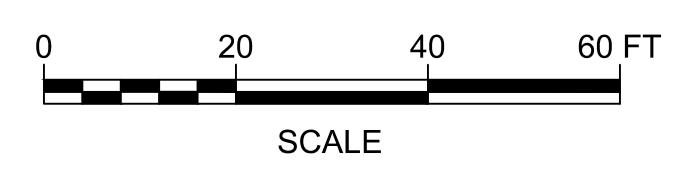


CB 12391 RIM=471.41
 INV. 15" RCP(N)=465.91
 INV. 18" RCP(NE)=465.86
 SUMP=462.89
 CB 12428 RIM=472.03
 INV. 15" RCP(NW)=465.88
 INV. 15" RCP(SE)=466.03
 CB 12999 RIM=472.62
 INV. 12" CMP(NW)=468.72
 INV. 15" RCP(SE)=467.22
 SUMP=464.32
 CB 13332 RIM=470.89
 INV. 15" RCP(NW)=465.23
 INV. 18" RCP(SW)=465.25
 INV. 24" RCP(NE)=465.09
 SUMP=462.23
 CB 13556 RIM=471.87
 INV. 8" CMP(NW)=468.62
 INV. 15" RCP(SE)=465.67
 SUMP=462.87
 CB 13639 RIM=471.43
 INV. 15"(NE)=BLOCKED
 INV. 12" CMP(SE)=468.63
 SUMP=465.13
 SMH 12440 RIM=471.91
 INV. 8" (NE)=462.61
 INV. 8" (SE)=462.66
 SMH 13335 RIM=472.63
 FILLED WITH GRAVEL
 SMH 13359 RIM=471.32
 INV. 6" PVC(W)=464.82
 INV. UK(SW)=462.57
 INV. UK(NE)=462.56




MATCHLINE STA 108+50 (SEE SHEET EX-02)

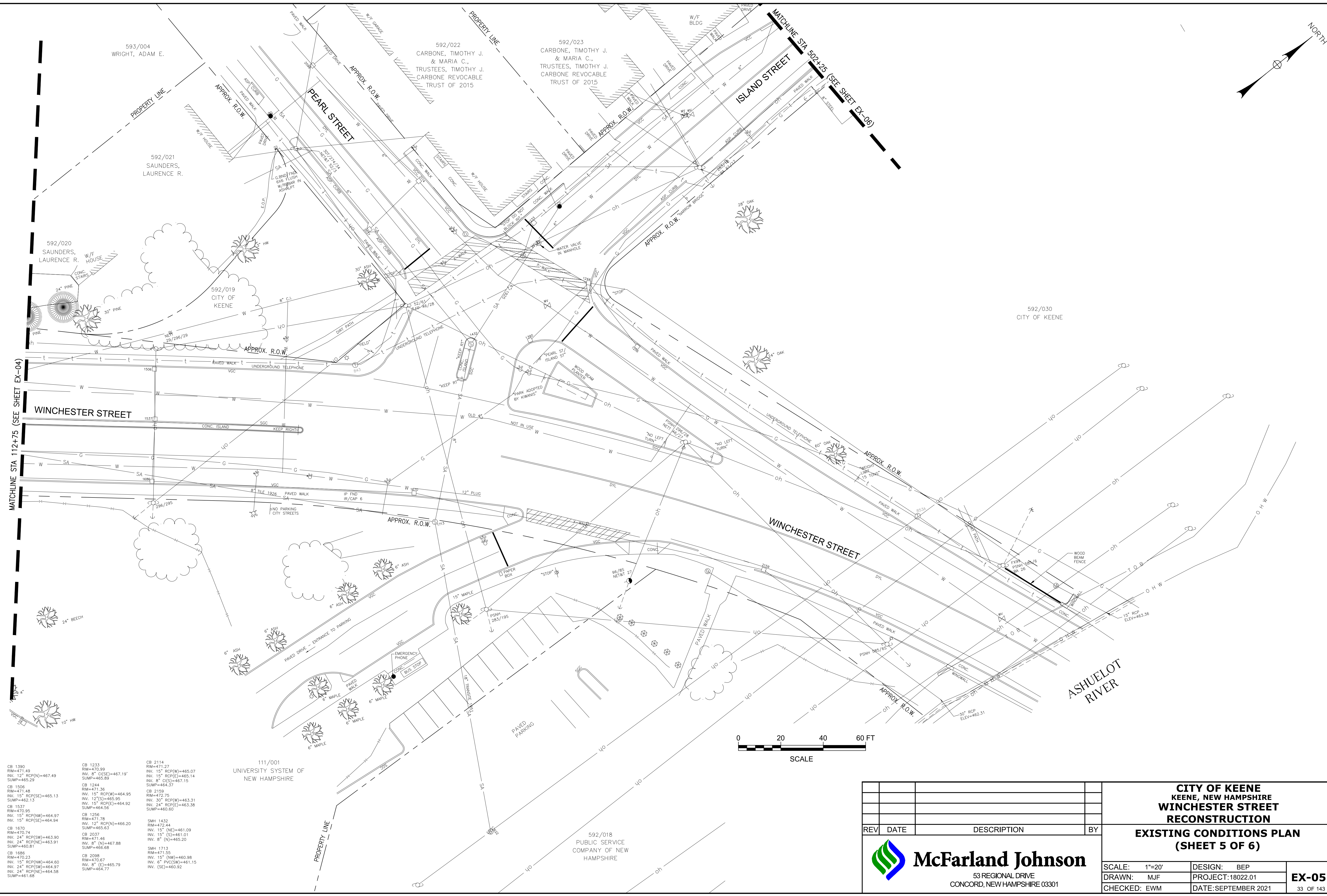
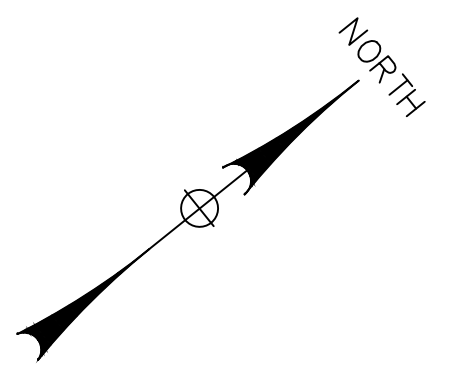
MATCHLINE STA 112+75 (SEE SHEET EX-05)



111/001
UNIVERSITY SYSTEM OF
NEW HAMPSHIRE

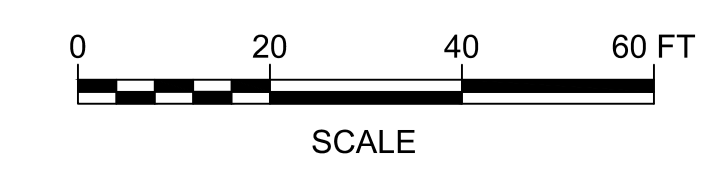
 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301			
REV	DATE	DESCRIPTION	BY

CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION		
EXISTING CONDITIONS PLAN (SHEET 4 OF 6)		
SCALE: 1"=20'	DESIGN: BEP	EX-04 <small>32 OF 143</small>
DRAWN: MJF	PROJECT: 18022.01	
CHECKED: EWM	DATE: SEPTEMBER 2021	



MATCHLINE STA 112+75 (SEE SHEET EX-04)

MATCHLINE STA 502+25 (SEE SHEET EX-06)



CB 1390 RM=471.49 INV. 12" RCP(N)=467.49 SUMP=465.29	CB 1233 RM=470.99 INV. 8" C/S(E)=467.19' SUMP=465.89	CB 2114 RM=471.27 INV. 15" RCP(W)=465.07 INV. 15" RCP(E)=465.14 INV. 8" C/S(S)=467.15 SUMP=464.37
CB 1506 RM=471.48 INV. 15" RCP(SE)=465.13 SUMP=462.13	CB 1244 RM=471.36 INV. 15" RCP(W)=464.95 INV. 12"(S)=465.95 INV. 15" RCP(E)=464.92 SUMP=464.56	CB 2159 RM=472.75 INV. 30" RCP(W)=463.31 INV. 24" RCP(E)=463.38 SUMP=460.60
CB 1537 RM=470.95 INV. 15" RCP(NW)=464.97 INV. 15" RCP(SE)=464.94	CB 1256 RM=471.78 INV. 12" RCP(N)=466.20 SUMP=465.63	SMH 1432 RM=472.44 INV. 15" (NE)=461.09 INV. 15" (S)=461.01 INV. 8" (N)=465.20
CB 1670 RM=470.74 INV. 24" RCP(SW)=463.90 INV. 24" RCP(NE)=463.91 SUMP=460.81	CB 2037 RM=471.46 INV. 8" (N)=467.88 SUMP=466.68	SMH 1713 RM=471.55 INV. 15" (NW)=460.98 INV. 6" P/C/S(W)=461.15 INV. (SE)=460.92
CB 1686 RM=470.23 INV. 15" RCP(NW)=464.60 INV. 24" RCP(SW)=464.97 INV. 24" RCP(NE)=464.58 SUMP=461.68	CB 2098 RM=470.67 INV. 8" (E)=465.79 SUMP=464.77	

111/001 UNIVERSITY SYSTEM OF NEW HAMPSHIRE

592/018 PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE

McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

REV	DATE	DESCRIPTION	BY

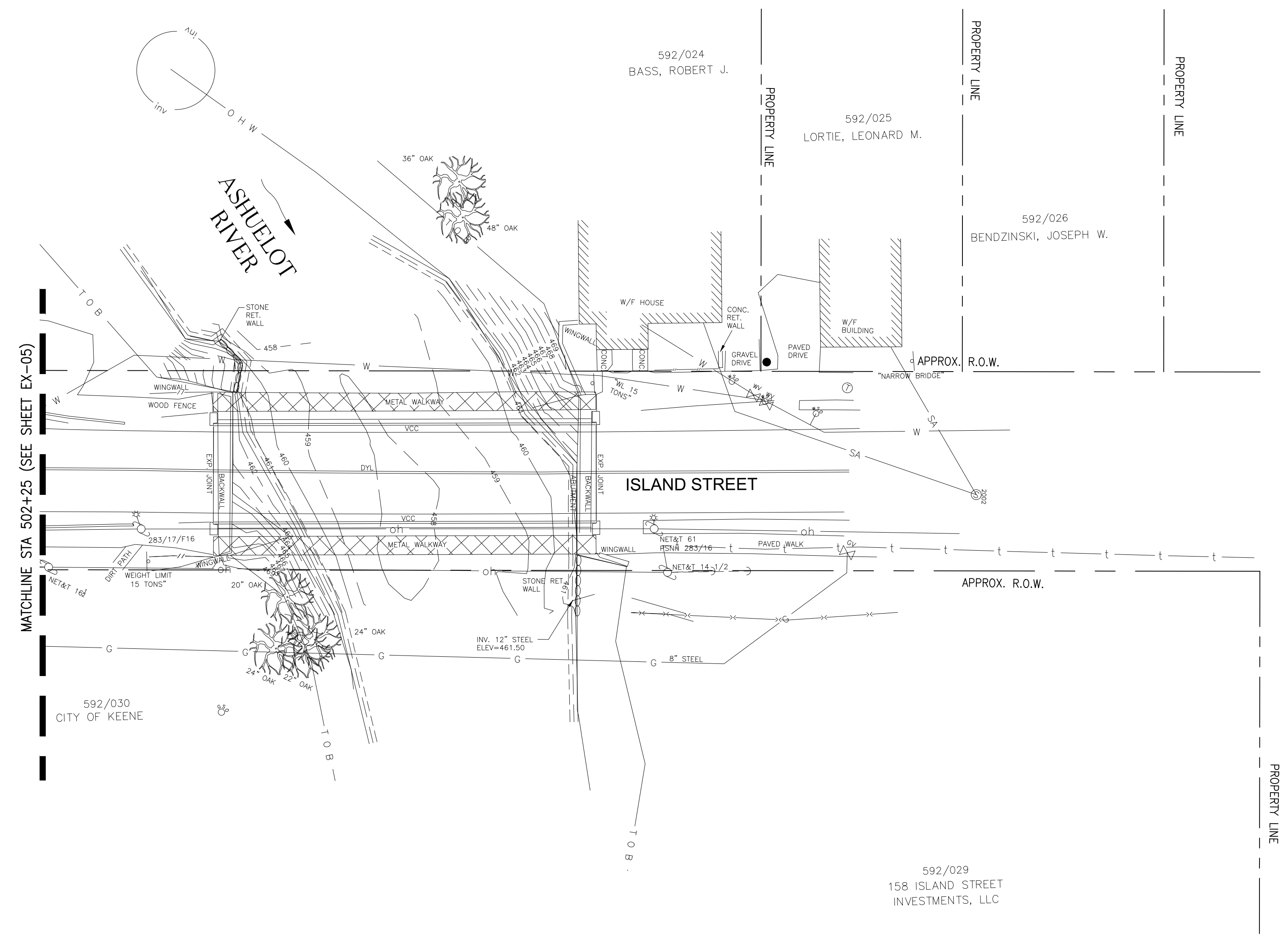
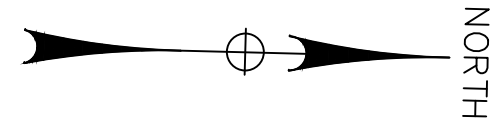
**CITY OF KEENE
KEENE, NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION**


**EXISTING CONDITIONS PLAN
(SHEET 5 OF 6)**

SCALE:	1"=20'	DESIGN:	BEP
DRAWN:	MJF	PROJECT:	18022.01
CHECKED:	EWM	DATE:	SEPTEMBER 2021

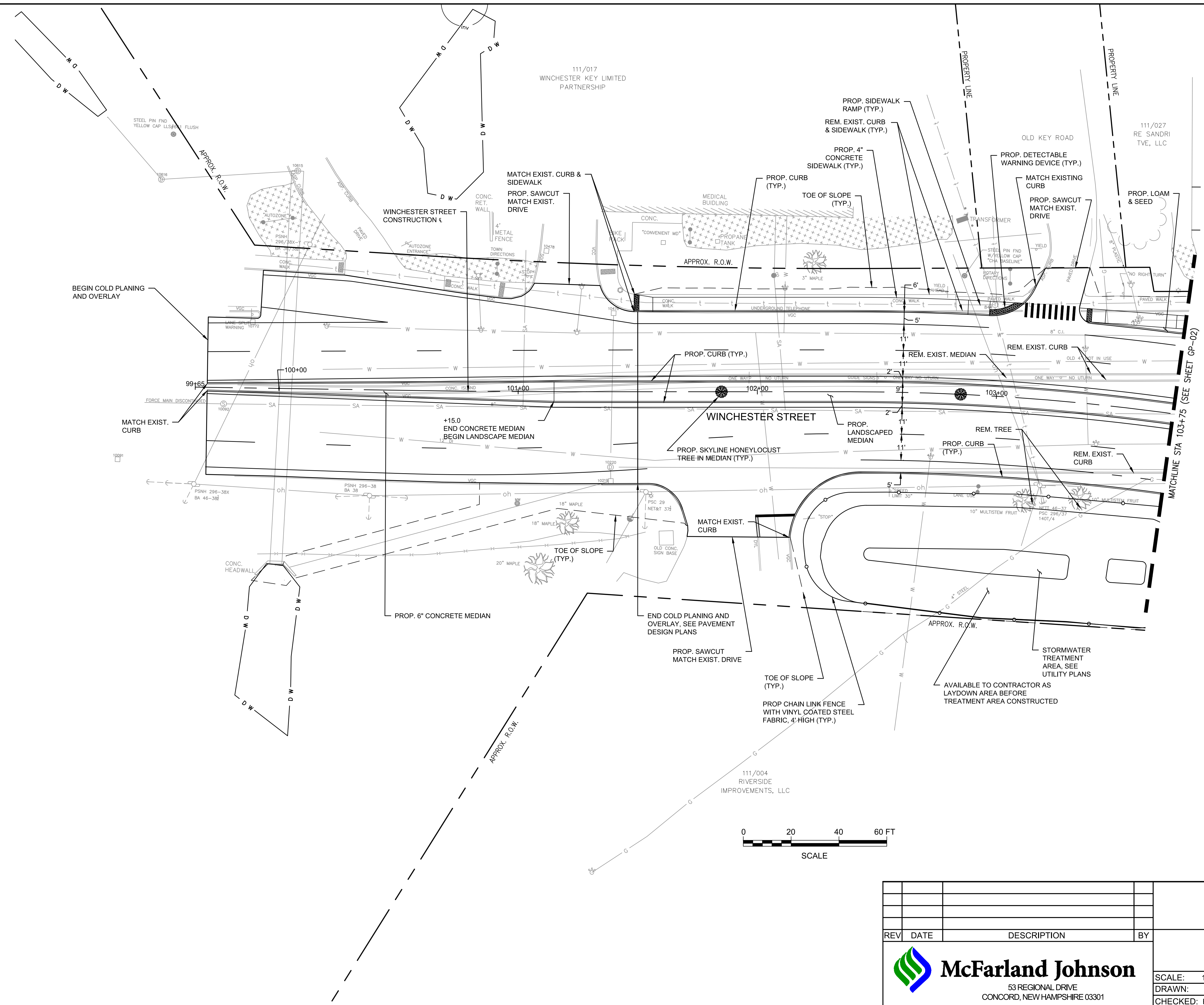
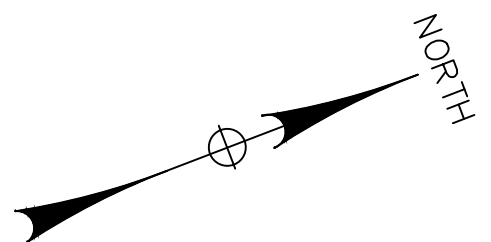
EX-05
33 OF 143

M:\18022.01 KEENE DRAWINGS\SHEET FILES\18022.01-EX-05.DWG



CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
EXISTING CONDITIONS PLAN (SHEET 6 OF 6)			
REV	DATE	DESCRIPTION	BY
 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301		SCALE: 1"=20'	DESIGN: BEP
		DRAWN: MJF	PROJECT: 18022.01
		CHECKED: EWM	DATE: SEPTEMBER 2021
			EX-06 34 OF 143

M:\18022.01 KEENE WINCHESTER FINAL DRAWINGS\SHSHEET FILES\18022.01-EXST.DWG



REV	DATE	DESCRIPTION	BY

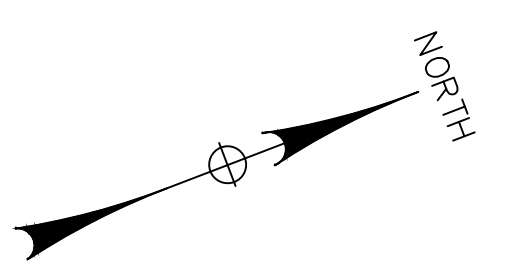
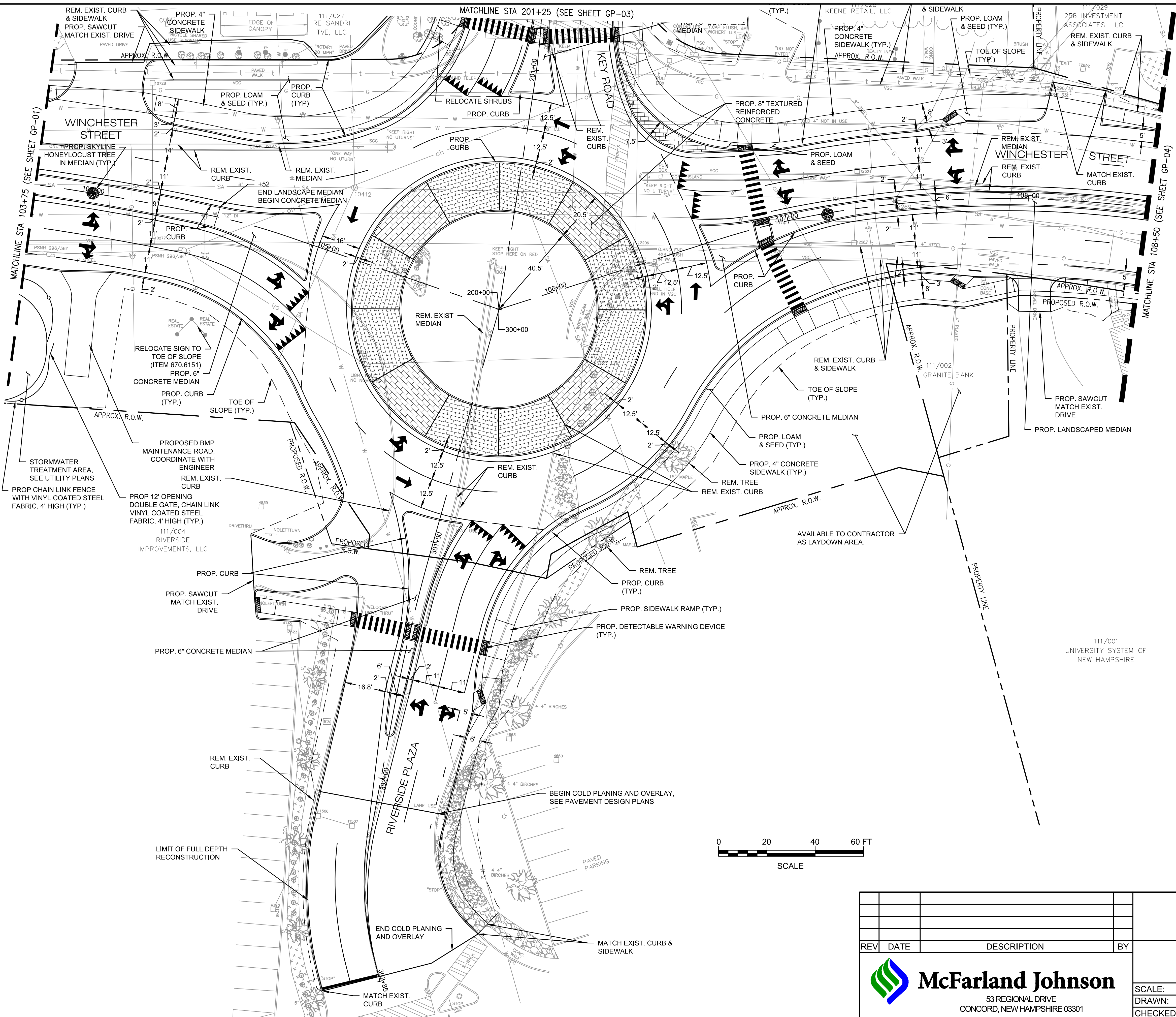
McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

**CITY OF KEENE
KEENE, NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION**

**GENERAL PLAN
(SHEET 1 OF 6)**

SCALE: 1"=20'	DESIGN: BEP	GP-01 35 OF 143
DRAWN: MJF	PROJECT: 18022.01	
CHECKED: EWM	DATE: SEPTEMBER 2021	

M:\18022.01 KEENE WINCHESTER FINAL DRAWINGS\SHSHEET FILES\18022.01-GENR.DWG



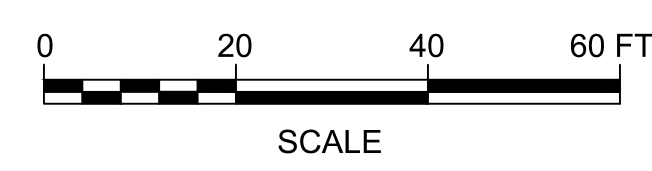
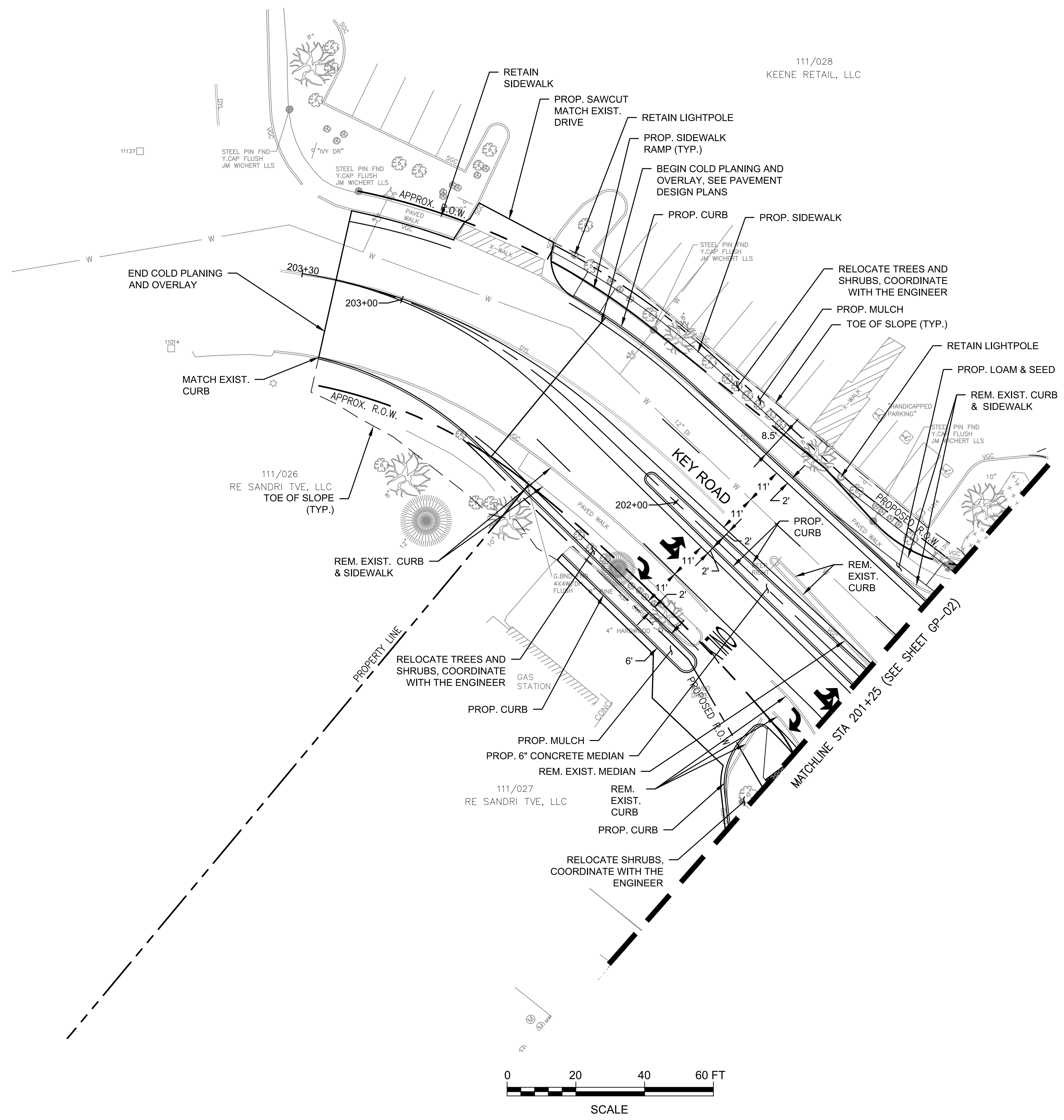
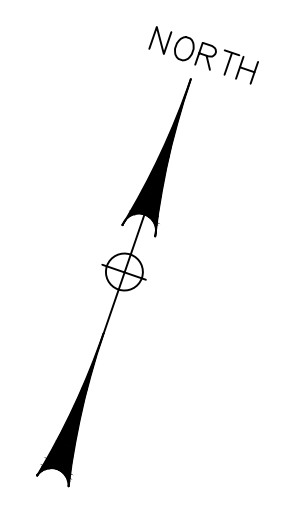
REV	DATE	DESCRIPTION	BY


McFarland Johnson
 53 REGIONAL DRIVE
 CONCORD, NEW HAMPSHIRE 03301

**CITY OF KEENE
 KEENE, NEW HAMPSHIRE
 WINCHESTER STREET
 RECONSTRUCTION
 GENERAL PLAN
 (SHEET 2 OF 6)**

SCALE: 1"=20'	DESIGN: BEP	GP-02 36 OF 143
DRAWN: MJF	PROJECT: 18022.01	
CHECKED: EWM	DATE: SEPTEMBER 2021	

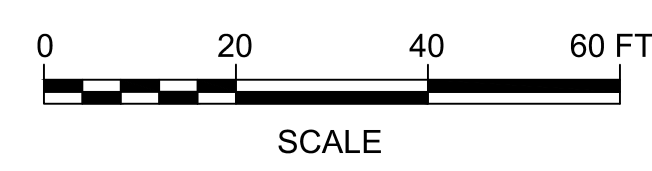
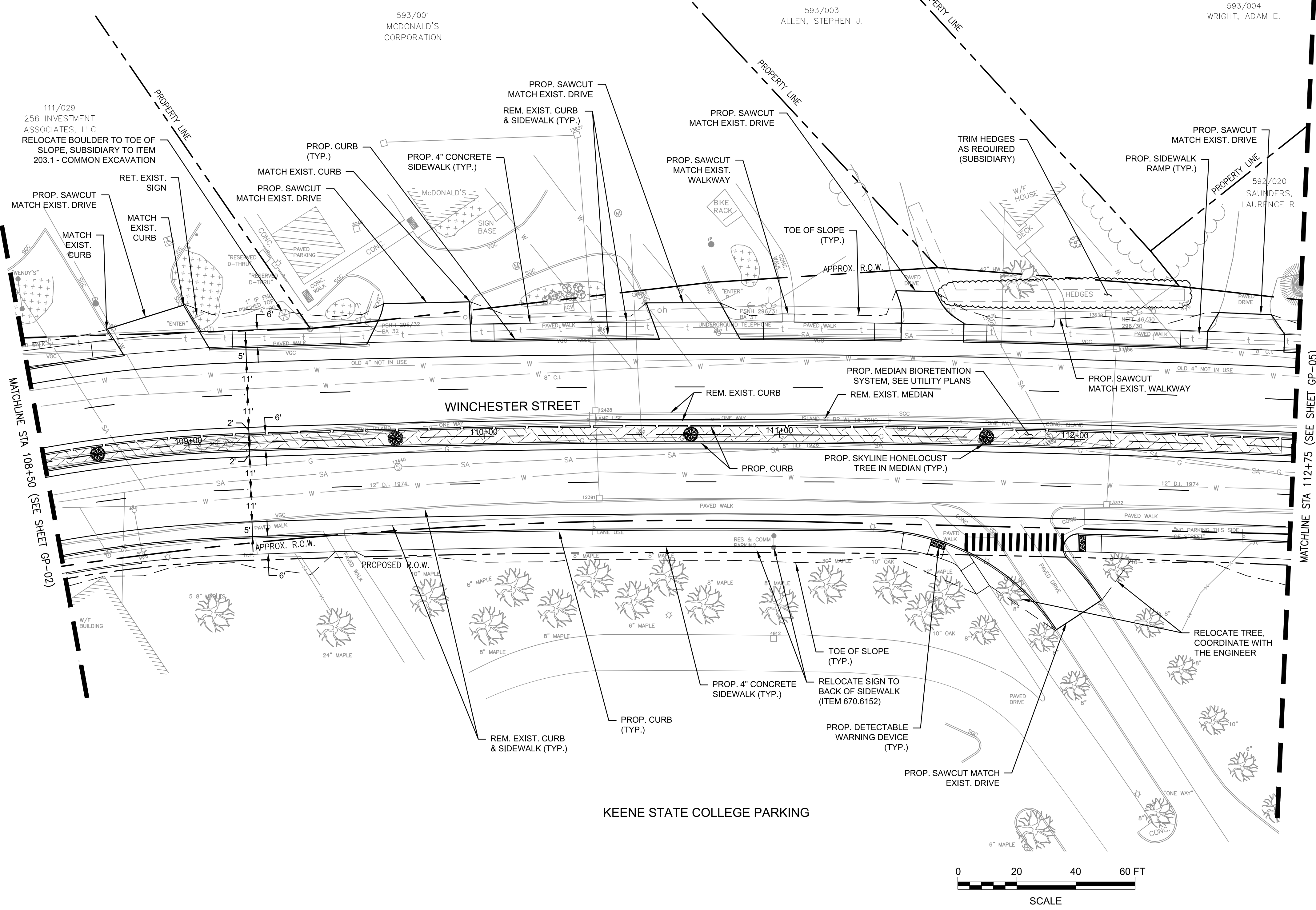
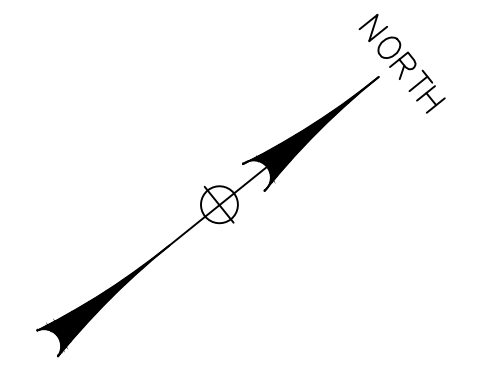
M:\18022.01 KEENE\DRAWINGS\SHEET FILES\18022.01-GENR.DWG



 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301			
---	--	--	--

CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
GENERAL PLAN (SHEET 3 OF 6)			
SCALE: 1"=20'	DESIGN: BEP	GP-03 <small>37 OF 143</small>	
DRAWN: MJF	PROJECT: 18022.01		
CHECKED: EWM	DATE: SEPTEMBER 2021		

M:\18022.01 KEENE WINCHESTER FINAL DRAWINGS\SHEET FILES\18022.01-GENR.DWG

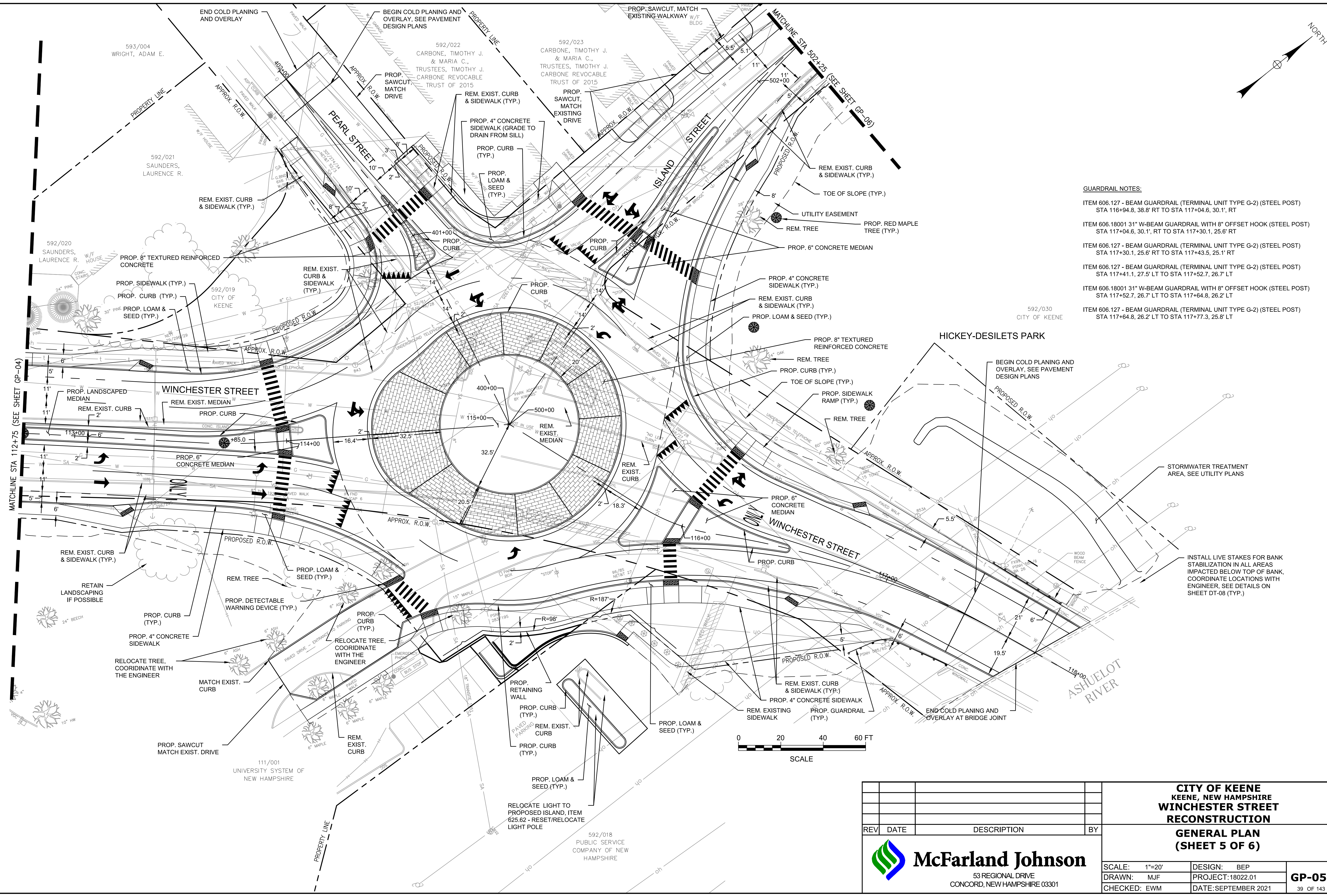
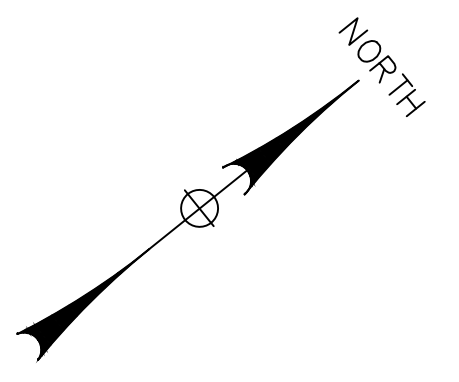


111/001
UNIVERSITY SYSTEM OF
NEW HAMPSHIRE

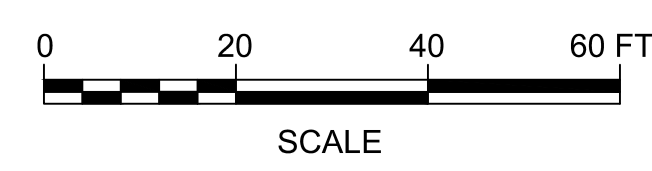
<p>McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301</p>			
REV	DATE	DESCRIPTION	BY

<p>CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION</p> <p>GENERAL PLAN (SHEET 4 OF 6)</p>	
SCALE: 1"=20'	DESIGN: BEP
DRAWN: MJF	PROJECT: 18022.01
CHECKED: EWM	DATE: SEPTEMBER 2021
<p>GP-04 38 OF 143</p>	

M:\18022.01 KEENE WINCHESTER FINAL DRAWINGS\SHEET FILES\18022.01-GENR.DWG



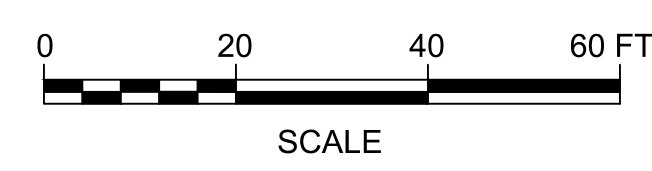
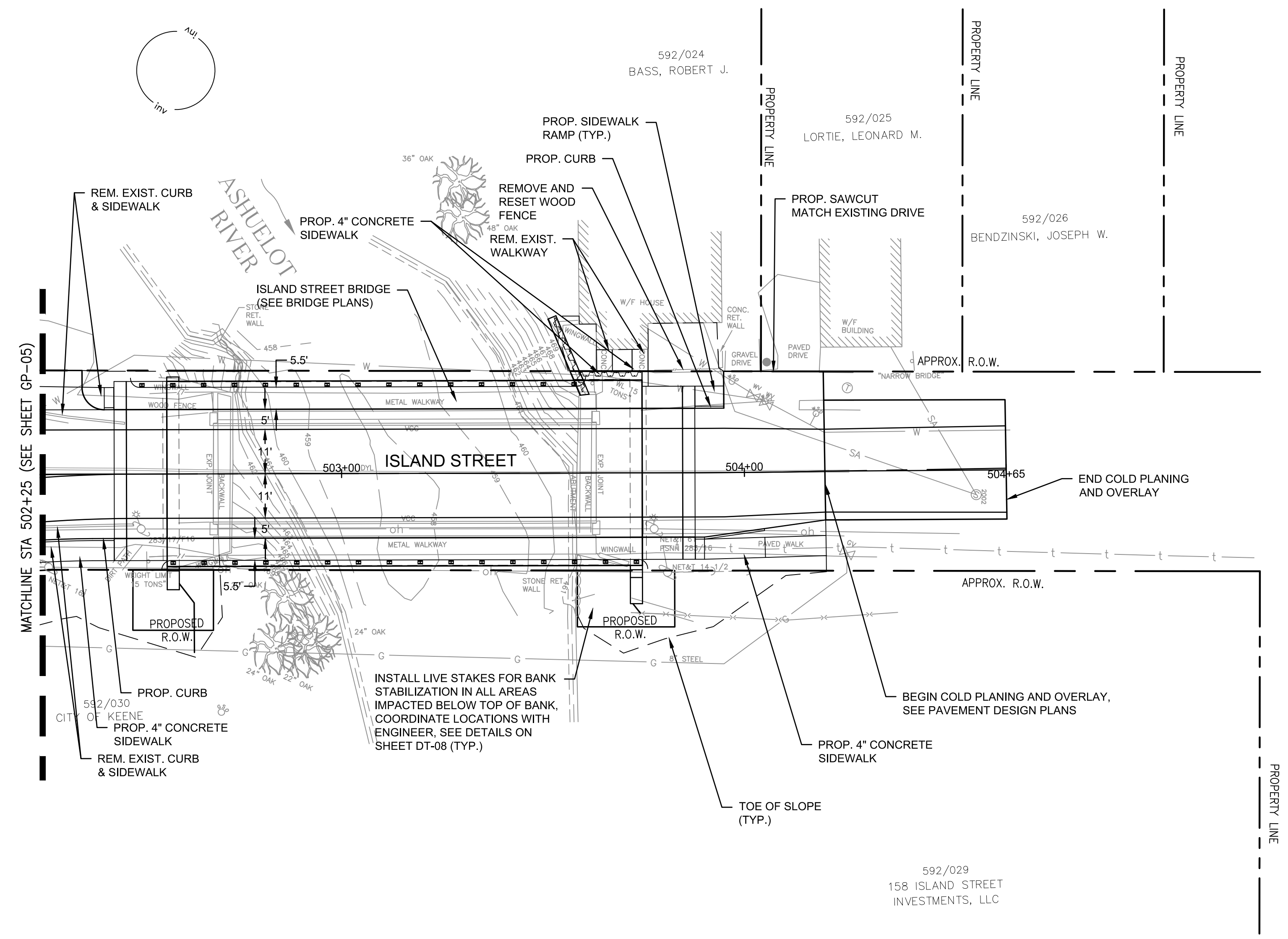
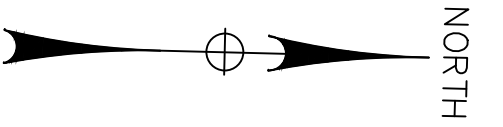
- GUARDRAIL NOTES:**
- ITEM 606.127 - BEAM GUARDRAIL (TERMINAL UNIT TYPE G-2) (STEEL POST) STA 116+94.8, 38.8' RT TO STA 117+04.6, 30.1' RT
 - ITEM 606.18001 31" W-BEAM GUARDRAIL WITH 8" OFFSET HOOK (STEEL POST) STA 117+04.6, 30.1' RT TO STA 117+30.1, 25.6' RT
 - ITEM 606.127 - BEAM GUARDRAIL (TERMINAL UNIT TYPE G-2) (STEEL POST) STA 117+30.1, 25.6' RT TO STA 117+43.5, 25.1' RT
 - ITEM 606.127 - BEAM GUARDRAIL (TERMINAL UNIT TYPE G-2) (STEEL POST) STA 117+41.1, 27.5' LT TO STA 117+52.7, 26.7' LT
 - ITEM 606.18001 31" W-BEAM GUARDRAIL WITH 8" OFFSET HOOK (STEEL POST) STA 117+52.7, 26.7' LT TO STA 117+64.8, 26.2' LT
 - ITEM 606.127 - BEAM GUARDRAIL (TERMINAL UNIT TYPE G-2) (STEEL POST) STA 117+64.8, 26.2' LT TO STA 117+77.3, 25.8' LT




CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
GENERAL PLAN (SHEET 5 OF 6)			
REV	DATE	DESCRIPTION	BY
McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301			

SCALE: 1"=20'	DESIGN: BEP	GP-05 39 OF 143
DRAWN: MJF	PROJECT: 18022.01	
CHECKED: EWM	DATE: SEPTEMBER 2021	

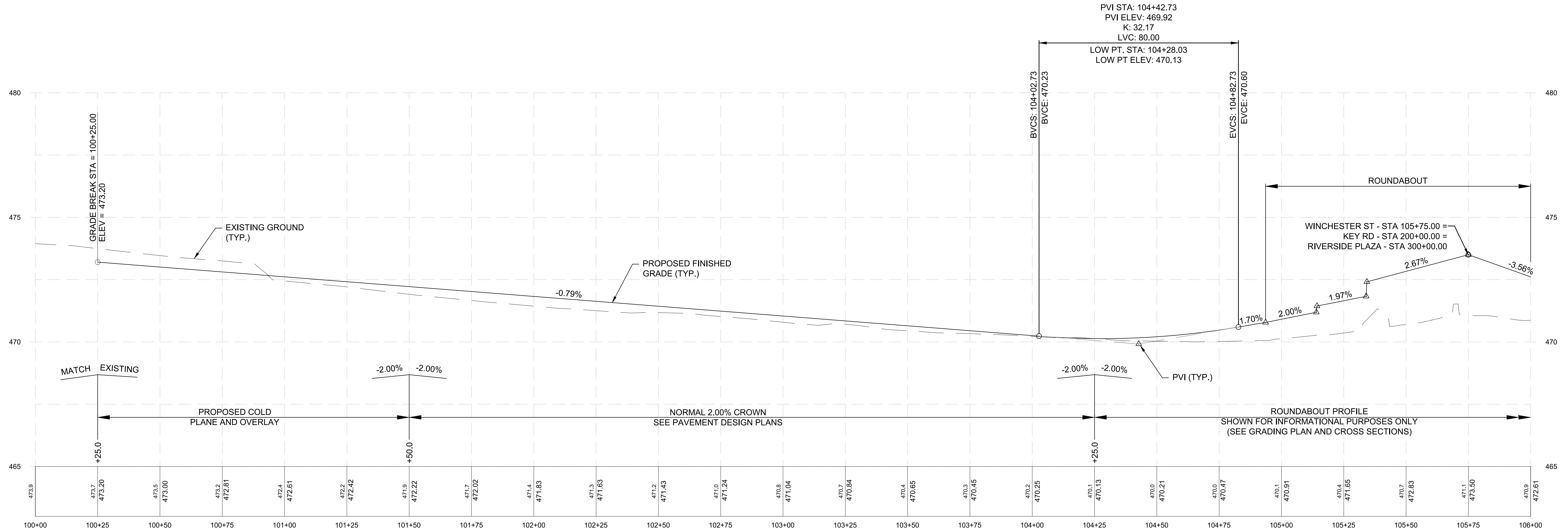
M:\18022.01 KEENE WINCHESTER FINAL DRAWINGS\GP-05 SHEET 5 OF 6.DWG



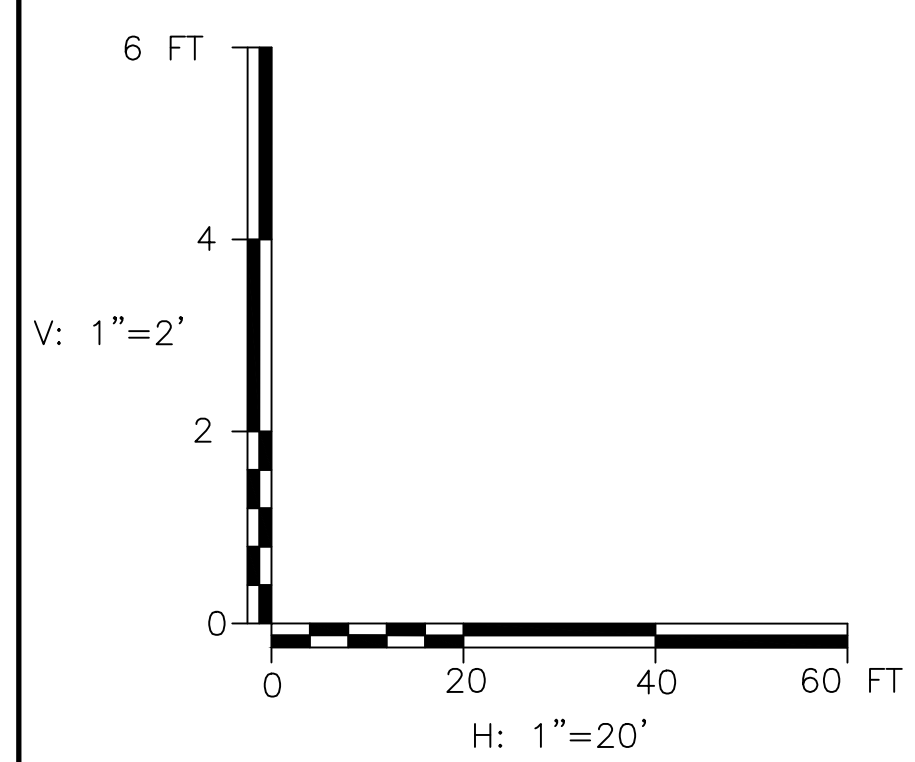
CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION GENERAL PLAN (SHEET 6 OF 6)			
REV	DATE	DESCRIPTION	BY
 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301			

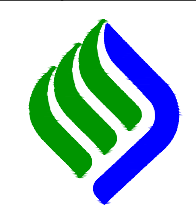
SCALE: 1" = 20'	DESIGN: BEP	GP-06
DRAWN: MJF	PROJECT: 18022.01	
CHECKED: EWM	DATE: SEPTEMBER 2021	
		40 OF 143

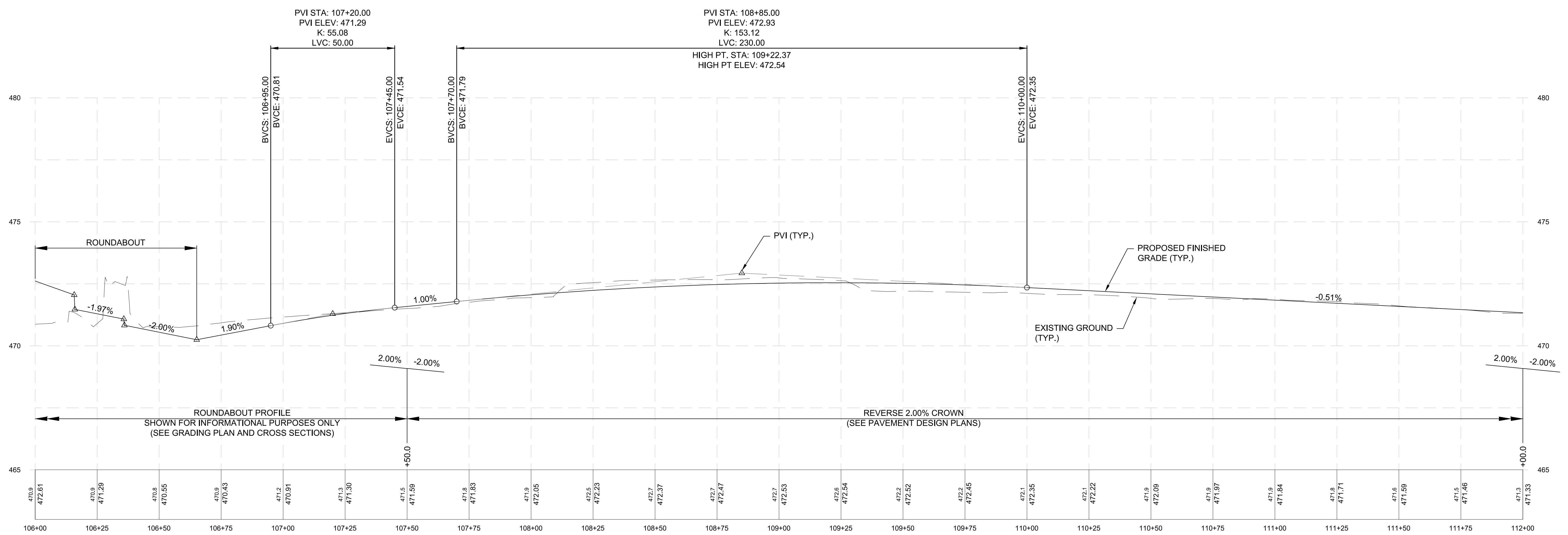
M:\18022.01 KEENE WINCHESTER FINAL DRAWINGS\SHEET FILES\18022.01-GENR.DWG



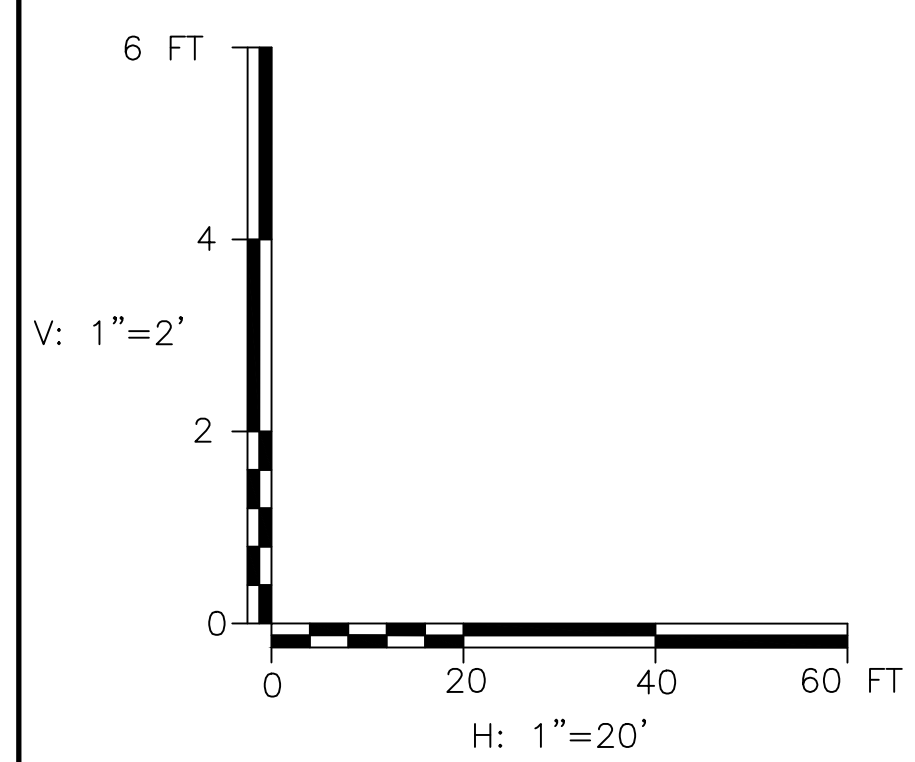
WINCHESTER STREET STA 100+00 TO 106+00




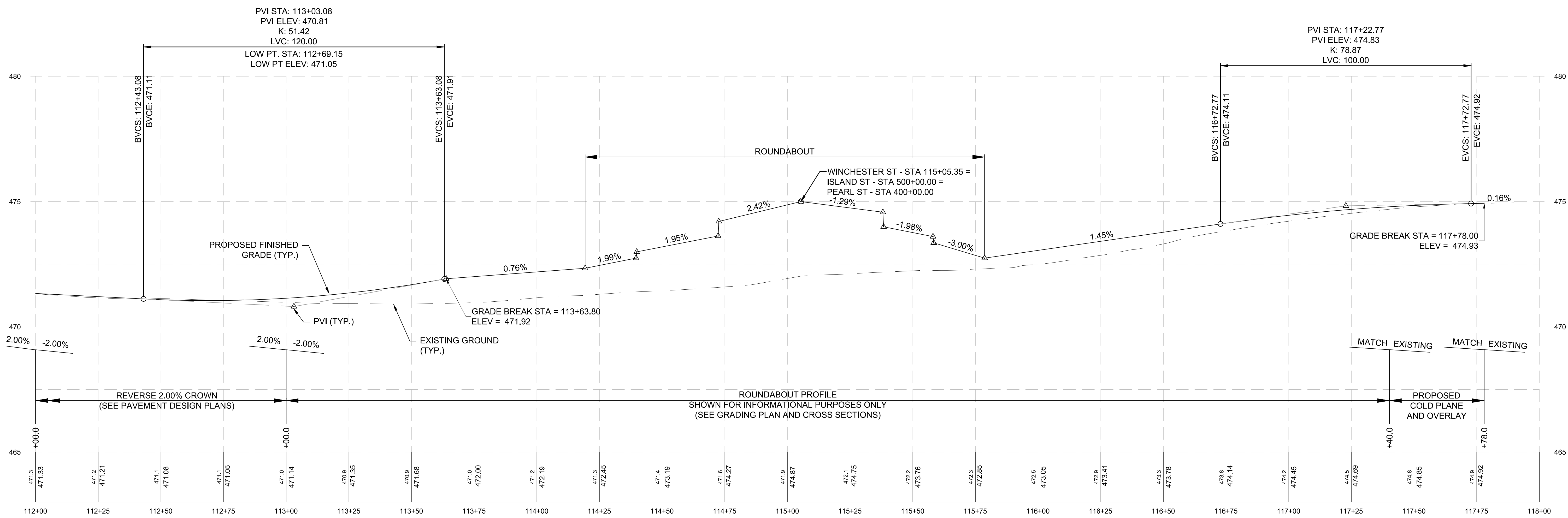
CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
PROFILE (SHEET 1 OF 7)			
REV	DATE	DESCRIPTION	BY
 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301		SCALE: AS SHOWN DESIGN: BEP DRAWN: MJF PROJECT: 18022.01 CHECKED: EWM DATE: SEPTEMBER 2021	PR-01 41 OF 143



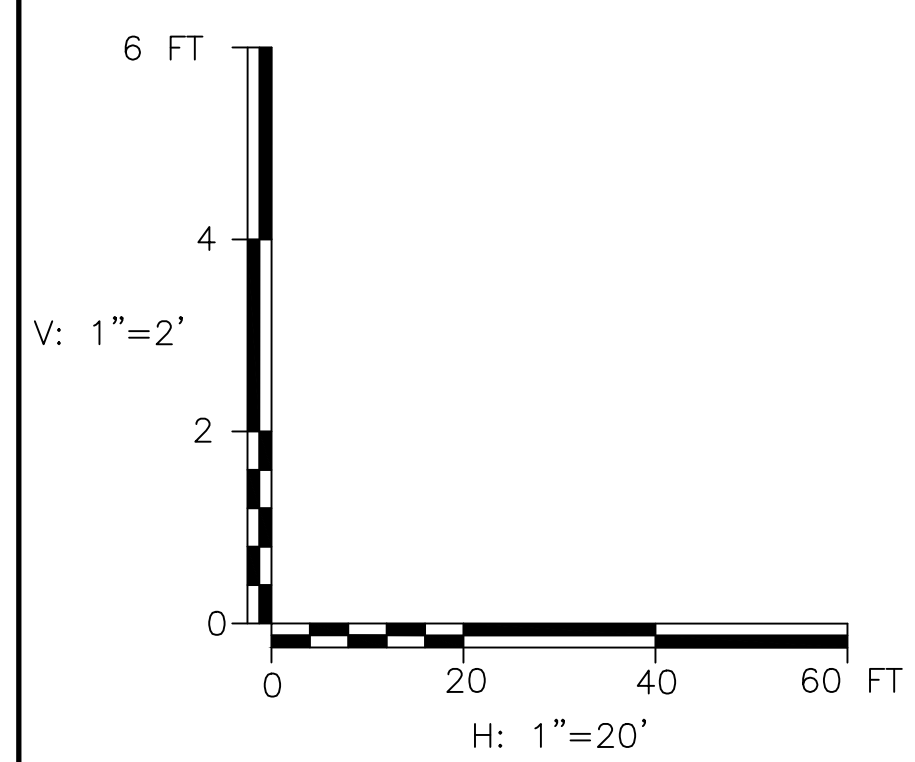
WINCHESTER STREET STA 106+00 TO 112+00




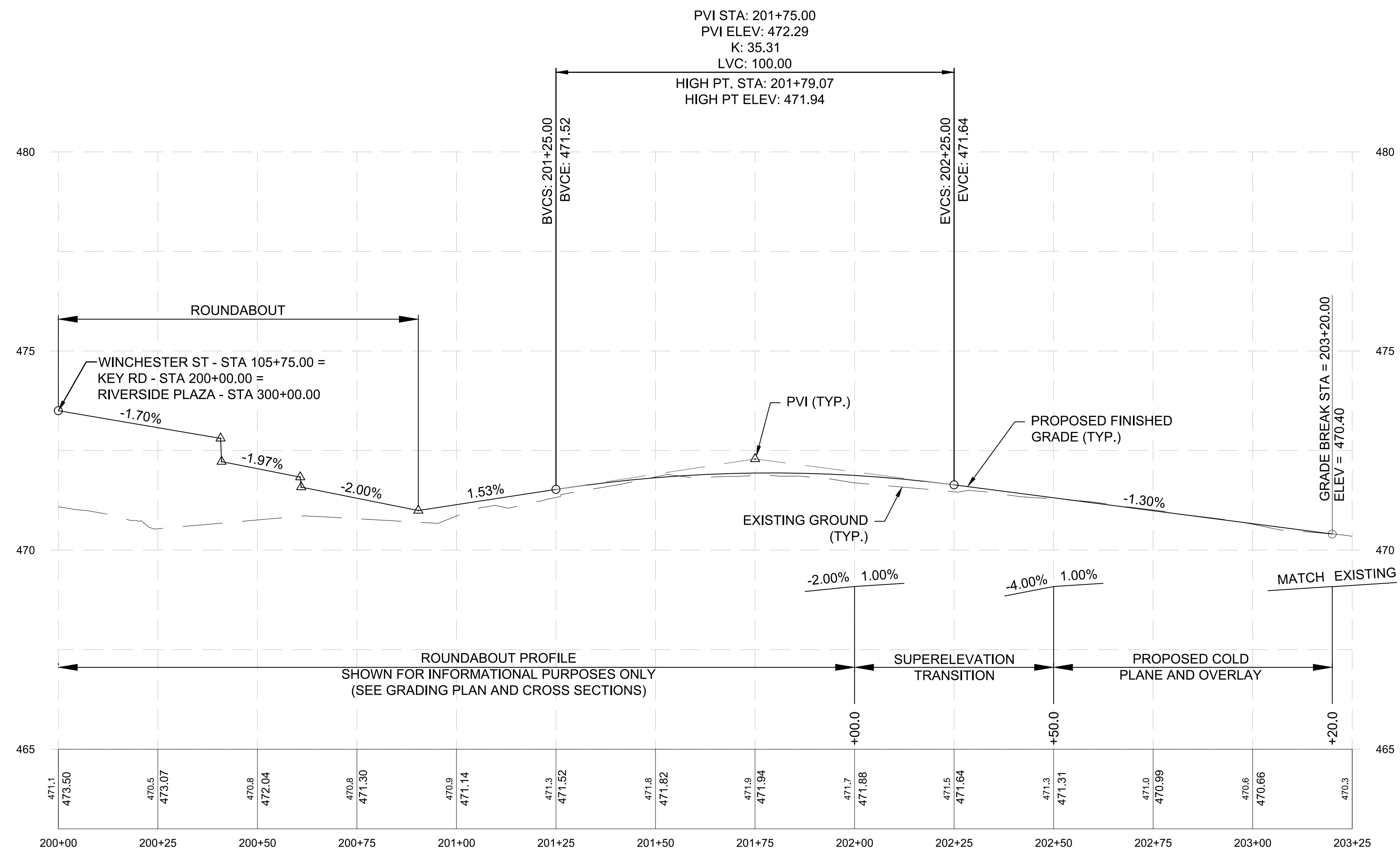
CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
PROFILE (SHEET 2 OF 7)			
REV	DATE	DESCRIPTION	BY
 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301		SCALE: AS SHOWN DESIGN: BEP DRAWN: MJF PROJECT: 18022.01 CHECKED: EWM DATE: SEPTEMBER 2021	PR-02 42 OF 143



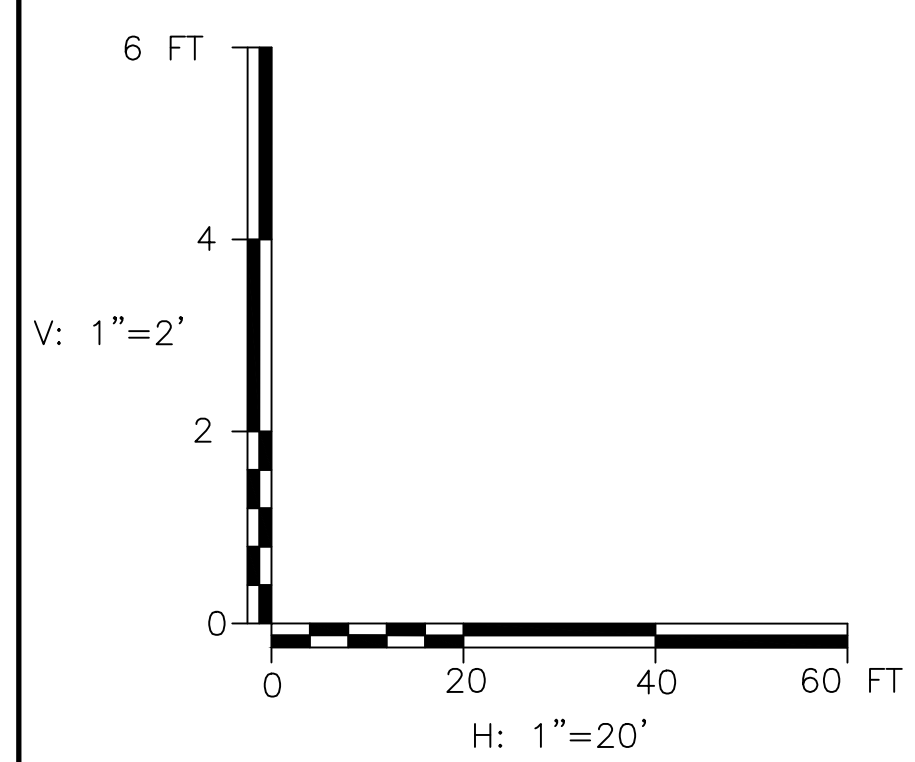
WINCHESTER STREET STA 112+00 TO 118+00



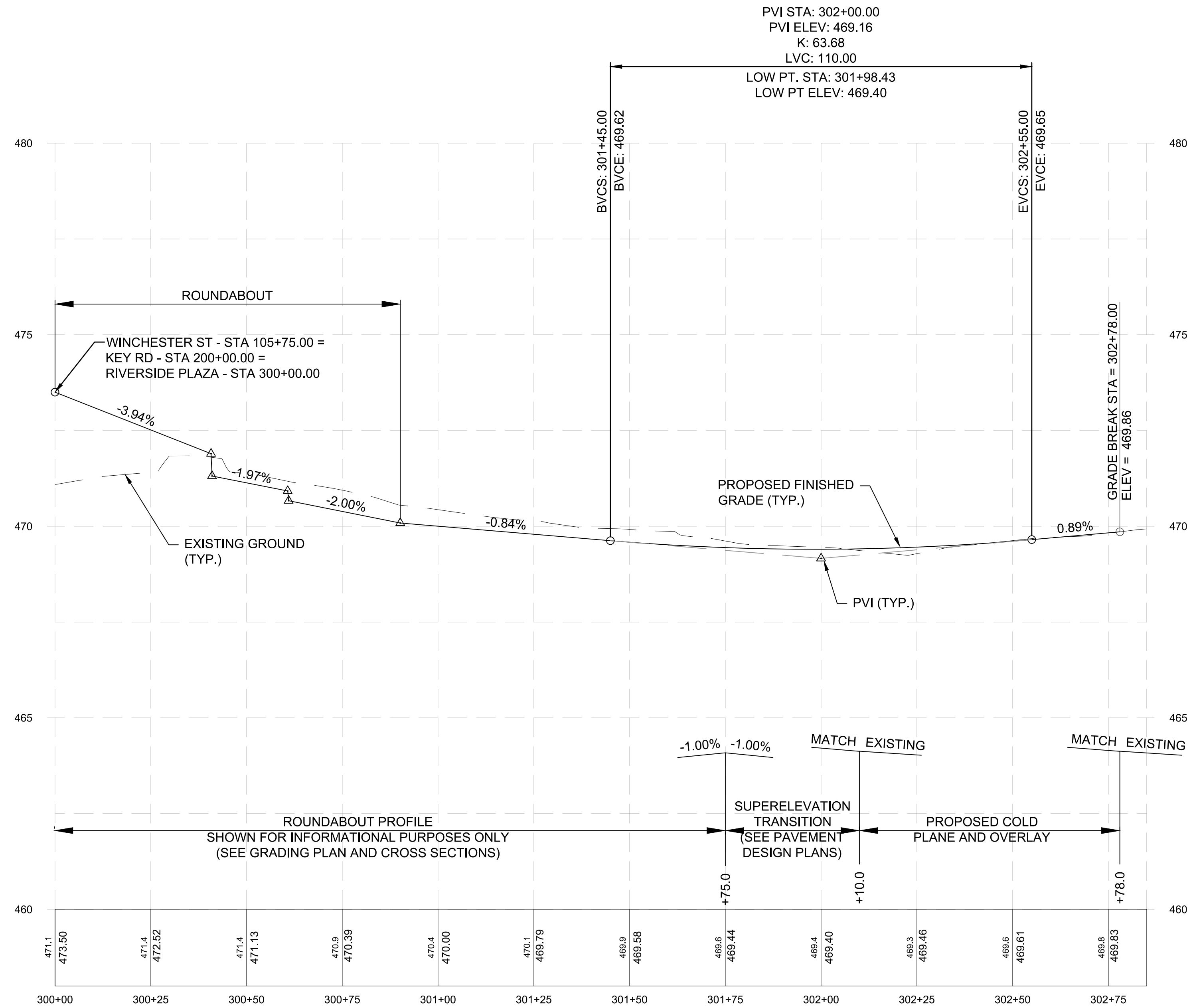
				CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION	
				PROFILE (SHEET 3 OF 7)	
REV	DATE	DESCRIPTION	BY	SCALE: AS SHOWN	DESIGN: BEP
				DRAWN: MJF	PROJECT: 18022.01
				CHECKED: EWM	DATE: SEPTEMBER 2021
 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301				PR-03	
				43 OF 143	



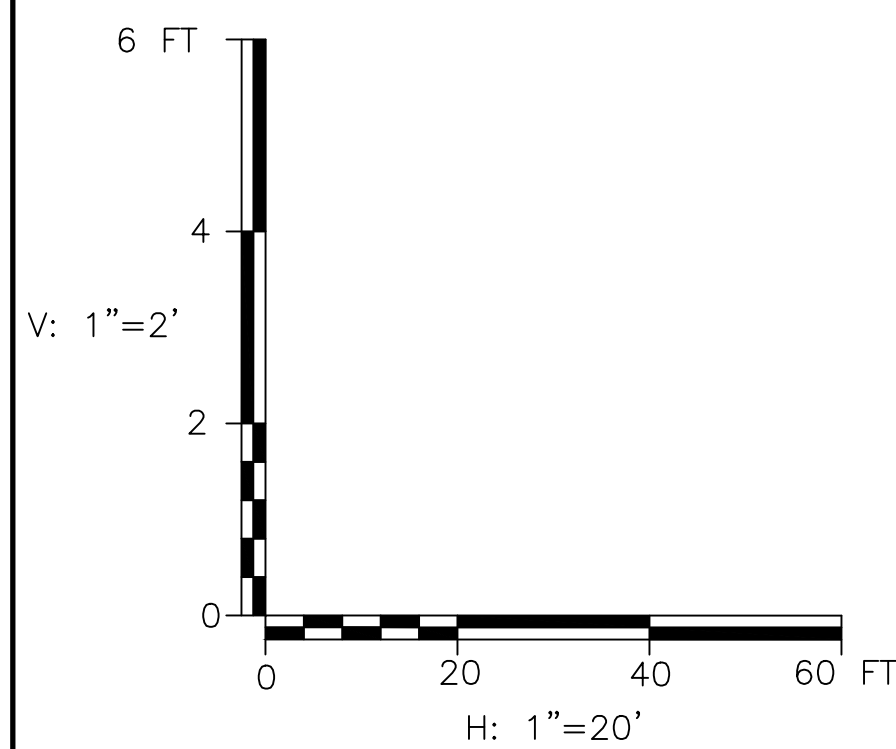
KEY ROAD STA 200+00 TO 203+25



CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
PROFILE (SHEET 4 OF 7)			
REV	DATE	DESCRIPTION	BY
McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301		SCALE: AS SHOWN DRAWN: MJF CHECKED: EWM	DESIGN: BEP PROJECT: 18022.01 DATE: SEPTEMBER 2021
			PR-04 44 OF 143



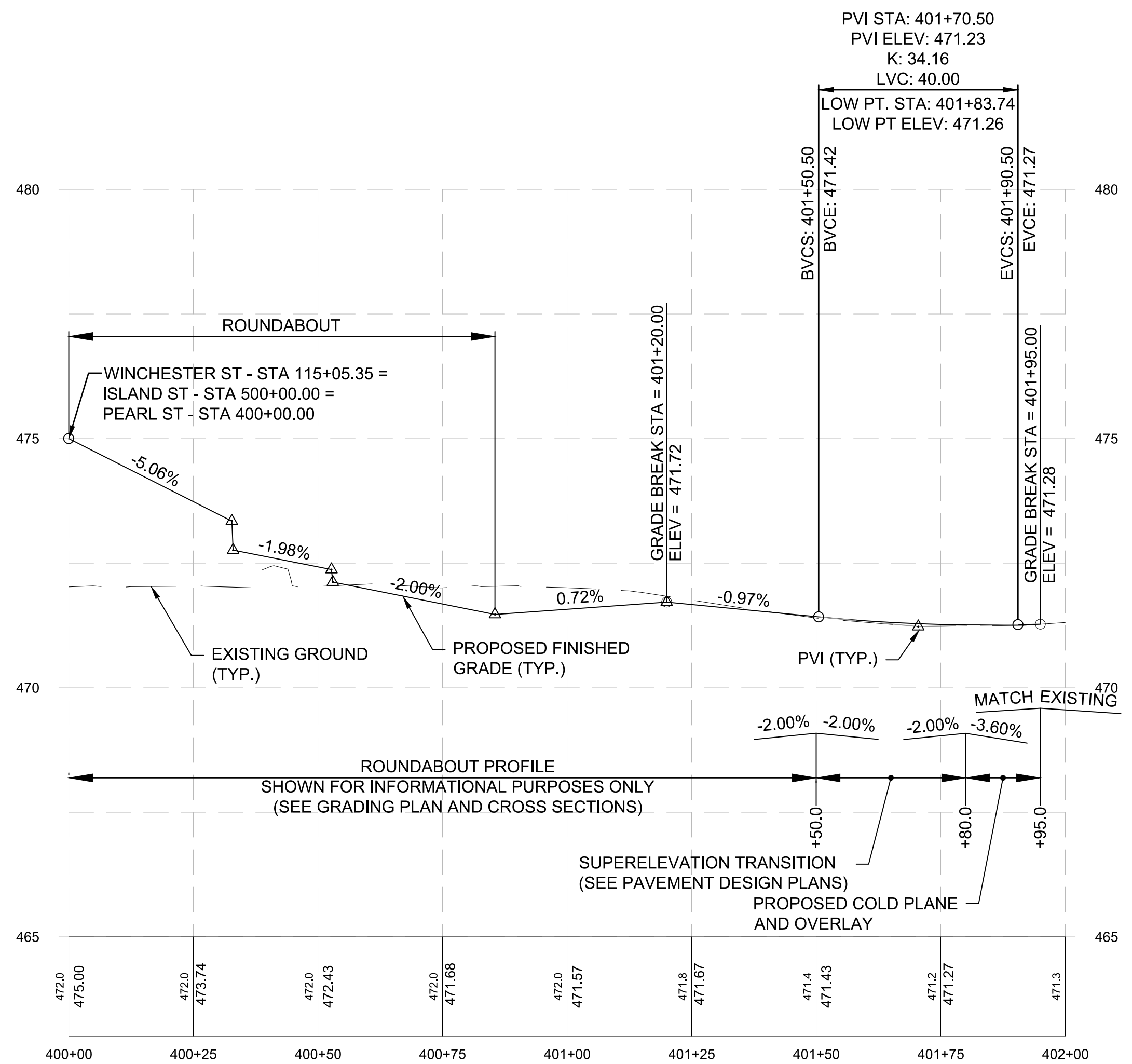
RIVERSIDE PLAZA STA 300+00 TO 302+85



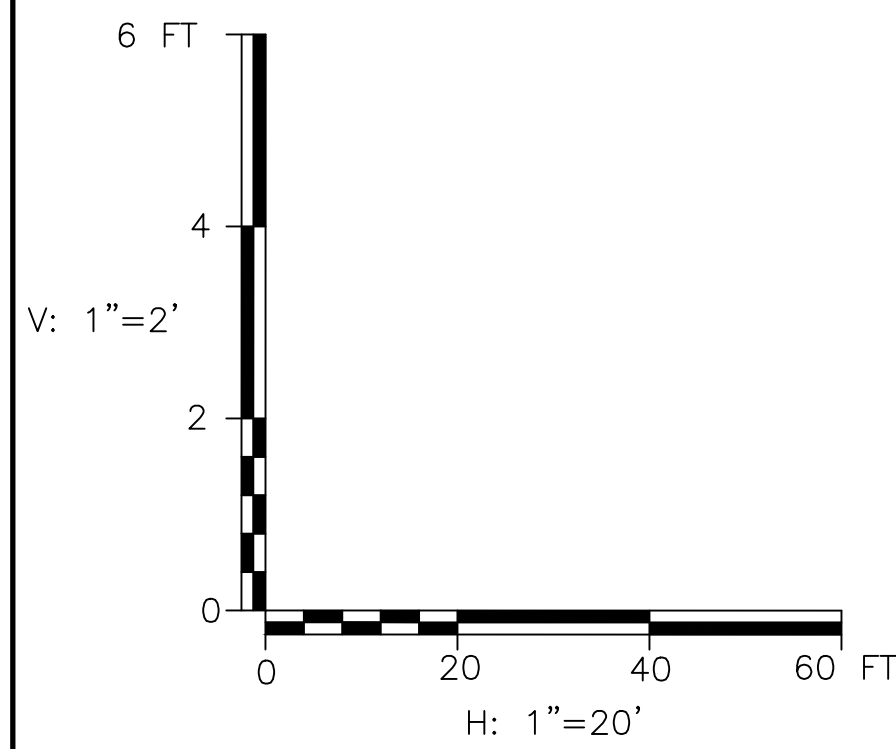
REV	DATE	DESCRIPTION	BY


CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION	
PROFILE (SHEET 5 OF 7)	
SCALE: AS SHOWN	DESIGN: BEP
DRAWN: MJF	PROJECT: 18022.01
CHECKED: EWM	DATE: SEPTEMBER 2021

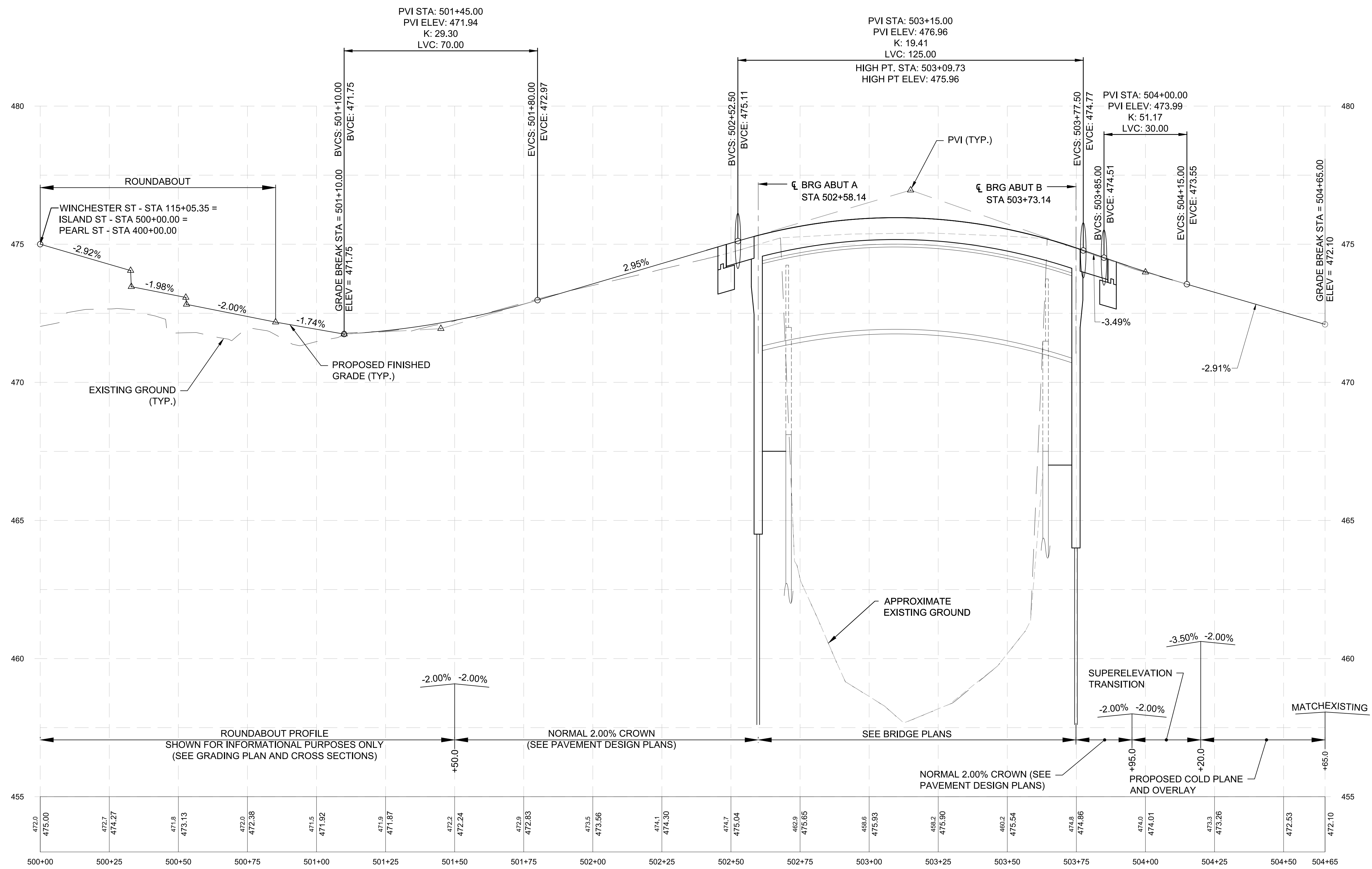
McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301		PR-05 45 OF 143
---	--	---------------------------



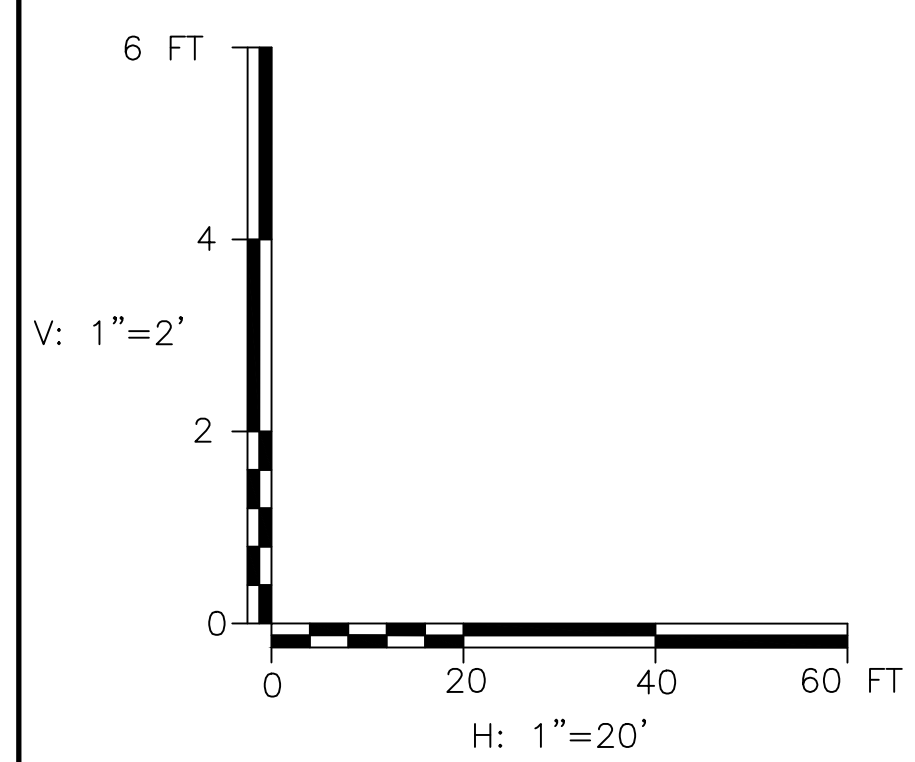
PEARL STREET STA 400+00 TO 402+00



				CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION	
				PROFILE (SHEET 6 OF 7)	
REV	DATE	DESCRIPTION	BY	SCALE: AS SHOWN	DESIGN: BEP
				DRAWN: MJF	PROJECT: 18022.01
				CHECKED: EWM	DATE: SEPTEMBER 2021
 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301				PR-06	
				46 OF 143	



ISLAND STREET STA 500+00 TO 504+30



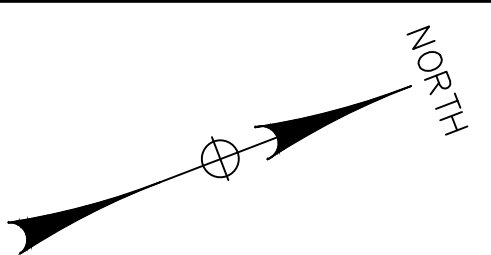
REV	DATE	DESCRIPTION	BY

McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

CITY OF KEENE
KEENE, NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION

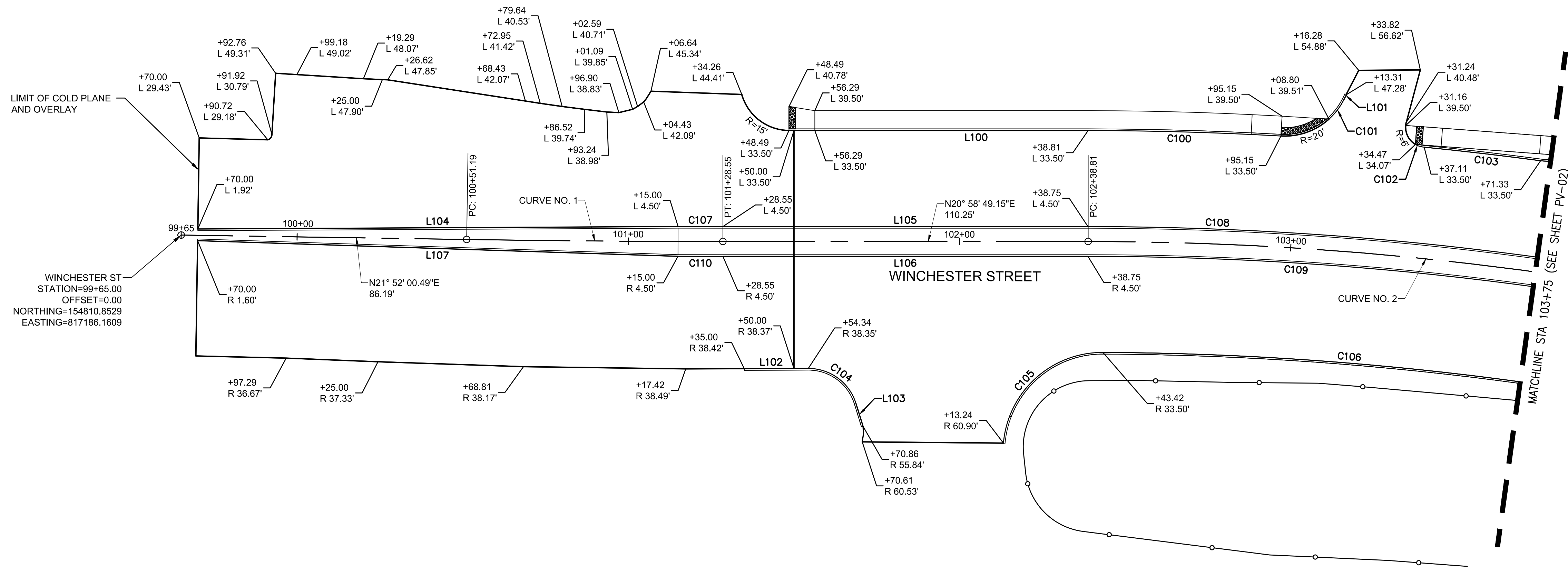
PROFILE
(SHEET 7 OF 7)

SCALE: AS SHOWN	DESIGN: BEP	PR-07 47 OF 143
DRAWN: MJF	PROJECT: 18022.01	
CHECKED: EWM	DATE: SEPTEMBER 2021	



STRAIGHT GRANITE CURB - LINEAR		
CURB #	LENGTH	
L100	90.06	
L101	1.71	
L102	19.34	
L103	7.25	
L104	144.97	
L105	110.20	
L106	110.20	
L107	145.08	

GRANITE CURB - CURVED			
CURB #	LENGTH	RADIUS	CURB TYPE
C100	58.24	1028.50	STRAIGHT
C101	7.46	20.00	CURVED
C102	2.81	6.00	CURVED
C103	35.38	1028.50	STRAIGHT
C104	19.12	15.00	CURVED
C105	44.65	30.00	STRAIGHT
C106	143.39	961.50	STRAIGHT
C107	13.54	4995.50	STRAIGHT
C108	214.86	999.50	STRAIGHT
C109	201.87	990.50	STRAIGHT
C110	13.57	5004.50	STRAIGHT



WINCHESTER STREET ALIGNMENT CURVE DATA							
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	ENDING STATION	NORTHING	EASTING
CURVE NO. 1	100+51.19	154890.8456	817218.2639	R=5000.00 Δ=0°53'11" L=77.36' T=38.68' PI STA=100+89.88 PI N=154926.7434 PI E=817232.6706	101+28.55	154962.8599	817246.5202
CURVE NO. 2	102+38.81	155065.8030	817285.9958	R=995.00' Δ=12°20'46" L=214.40' T=107.62' PI STA=103+46.42 PI N=155166.2855 PI E=817324.5278	104+53.21	155256.2056	817383.6534

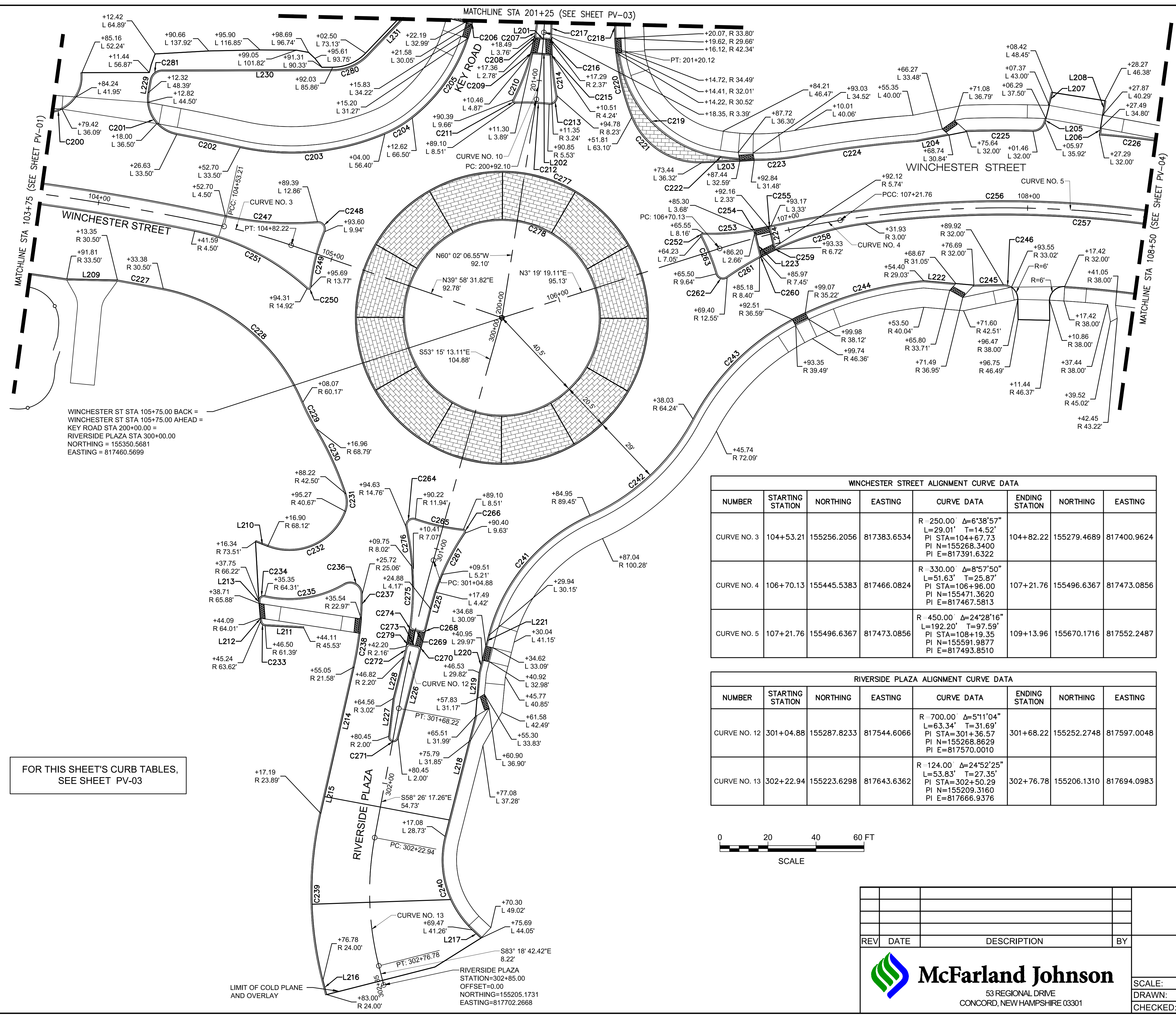


McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

CITY OF KEENE
KEENE, NEW HAMPSHIRE
WINCHESTER STREET RECONSTRUCTION
PAVEMENT LAYOUT PLAN (SHEET 1 OF 6)

SCALE: 1"=20'	DESIGN: BEP	PV-01 48 OF 143
DRAWN: MJF	PROJECT: 18022.01	
CHECKED: EWM	DATE: SEPTEMBER 2021	

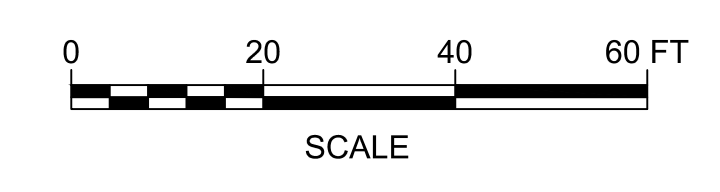
M:\18022.01 KEENE WINCHESTER FINALDRAWINGS\SHEET FILES\18022.01-PVMT - 2020.DWG



WINCHESTER ST STA 105+75.00 BACK =
WINCHESTER ST STA 105+75.00 AHEAD =
KEY ROAD STA 200+00.00 =
RIVERSIDE PLAZA STA 300+00.00
NORTHING = 155350.5681
EASTING = 817460.5699

WINCHESTER STREET ALIGNMENT CURVE DATA							
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	ENDING STATION	NORTHING	EASTING
CURVE NO. 3	104+53.21	155256.2056	817383.6534	R = 250.00' Δ=6°38'57" L = 29.01' T = 14.52' PI STA = 104+67.73 PI N = 155268.3400 PI E = 817391.6322	104+82.22	155279.4689	817400.9624
CURVE NO. 4	106+70.13	155445.5383	817466.0824	R = 330.00' Δ=8°57'50" L = 51.63' T = 25.87' PI STA = 106+96.00 PI N = 155471.3620 PI E = 817467.5813	107+21.76	155496.6367	817473.0856
CURVE NO. 5	107+21.76	155496.6367	817473.0856	R = 450.00' Δ=24°28'16" L = 192.20' T = 97.59' PI STA = 108+19.35 PI N = 155591.9877 PI E = 817493.8510	109+13.96	155670.1716	817552.2487

RIVERSIDE PLAZA ALIGNMENT CURVE DATA							
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	ENDING STATION	NORTHING	EASTING
CURVE NO. 12	301+04.88	155287.8233	817544.6066	R = 700.00' Δ=5°11'04" L = 63.34' T = 31.69' PI STA = 301+36.57 PI N = 155268.8629 PI E = 817570.0010	301+68.22	155252.2748	817597.0048
CURVE NO. 13	302+22.94	155223.6298	817643.6362	R = 124.00' Δ=24°52'25" L = 53.83' T = 27.35' PI STA = 302+50.29 PI N = 155209.3160 PI E = 817666.9376	302+76.78	155206.1310	817694.0983



REV	DATE	DESCRIPTION	BY

McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

**CITY OF KEENE
KEENE, NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION
PAVEMENT LAYOUT PLAN
(SHEET 2 OF 6)**

SCALE: 1"=20'	DESIGN: BEP	PV-02 49 OF 143
DRAWN: MJF	PROJECT: 18022.01	
CHECKED: EWM	DATE: SEPTEMBER 2021	

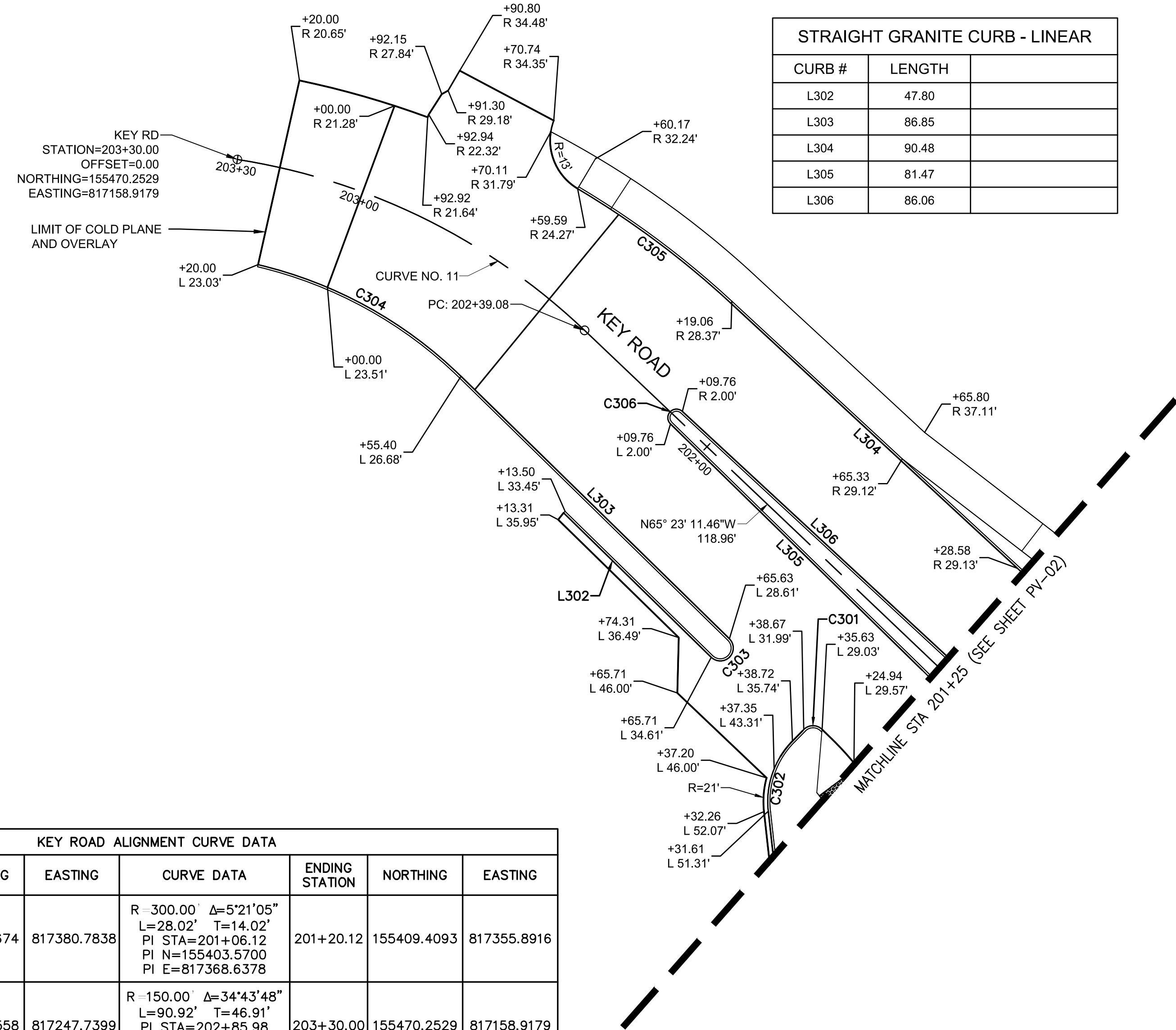
STRAIGHT GRANITE CURB - LINEAR		
CURB #	LENGTH	
L201	5.15	
L202	7.13	
L203	15.90	
L204	13.75	SPECIAL SLOPED
L205	1.62	
L206	2.81	
L207	5.57	
L208	6.11	
L209	21.07	
L210	5.43	SPECIAL SLOPED
L211	16.07	
L212	1.31	
L213	1.11	
L214	45.19	
L215	17.41	
L216	6.22	
L217	4.94	
L218	51.55	
L219	10.90	
L220	5.34	
L221	4.54	ROUNDED
L222	13.46	ROUNDED
L223	10.12	
L224	8.07	
L225	7.36	
L226	38.19	
L227	15.94	
L228	17.83	
L229	5.47	
L230	71.07	
L231	33.29	

GRANITE CURB - CURVED				
CURB #	LENGTH	RADIUS	CURB TYPE	
C200	27.31	15.00	CURVED	
C201	23.35	15.00	CURVED	
C202	26.95	1029.00	ROUNDED-STRAIGHT	
C203	61.44	100.00	ROUNDED-STRAIGHT	
C204	13.32	50.00	ROUNDED-STRAIGHT	
C205	41.15	70.00	ROUNDED-STRAIGHT	
C206	3.39	70.92	STRAIGHT	
C207	9.82	96.00	STRAIGHT	
C208	1.66	1.00	CURVED	
C209	1.39	1.00	CURVED	
C210	20.24	96.00	STRAIGHT	
C211	2.09	1.00	CURVED	
C212	14.16	90.25	STRAIGHT	
C213	5.61	3.00	CURVED	
C214	16.55	126.00	STRAIGHT	
C215	1.43	1.00	CURVED	
C216	1.65	1.00	CURVED	
C217	5.38	126.00	STRAIGHT	
C218	9.03	100.00	STRAIGHT	
C219	64.18	49.50	ROUNDED-STRAIGHT	
C220	27.86	100.00	SPECIAL SLOPED	
C221	36.97	30.00	SPECIAL SLOPED	
C222	8.59	99.50	ROUNDED-STRAIGHT	
C223	18.83	100.00	STRAIGHT	
C224	49.28	479.00	STRAIGHT	
C225	27.65	482.00	STRAIGHT	
C226	58.10	482.00	STRAIGHT	
C227	19.41	964.50	STRAIGHT	
C228	77.96	80.00	ROUNDED-STRAIGHT	
C229	12.39	90.00	ROUNDED-STRAIGHT	
C230	29.95	135.00	ROUNDED-STRAIGHT	
C231	7.43	11.00	CURVED	
C232	39.61	25.00	STRAIGHT	
C233	2.86	2.00	CURVED	
C234	3.77	2.00	CURVED	
C235	34.23	45.00	STRAIGHT	
C236	10.49	5.00	CURVED	
C237	10.36	135.00	STRAIGHT	
C238	14.19	135.00	STRAIGHT	
C239	70.00	148.00	STRAIGHT	
C240	42.52	40.00	STRAIGHT	
C241	67.78	75.00	ROUNDED-STRAIGHT	
C242	59.87	89.79	ROUNDED-STRAIGHT	
C243	59.44	100.00	ROUNDED-STRAIGHT	
C244	51.34	149.78	STRAIGHT	
C245	12.28	418.00	STRAIGHT	
C246	3.57	6.13	CURVED	
C247	38.65	129.00	STRAIGHT	
C248	6.14	3.00	CURVED	

GRANITE CURB - CURVED				
CURB #	LENGTH	RADIUS	CURB TYPE	
C249	23.89	81.25	STRAIGHT	
C250	2.21	1.00	CURVED	
C251	53.15	99.00	STRAIGHT	
C252	2.08	1.00	CURVED	
C253	20.53	99.00	STRAIGHT	
C254	1.51	1.00	CURVED	
C255	1.59	1.00	CURVED	
C256	222.34	453.00	STRAIGHT	
C257	180.81	447.00	STRAIGHT	
C258	38.37	129.00	STRAIGHT	
C259	1.76	1.00	CURVED	
C260	1.32	1.00	CURVED	
C261	15.87	129.00	STRAIGHT	
C262	5.68	3.00	CURVED	
C263	16.77	90.25	STRAIGHT	
C264	6.36	3.00	CURVED	
C265	20.52	90.25	STRAIGHT	
C266	2.07	1.00	CURVED	
C267	27.57	99.00	STRAIGHT	
C268	1.52	1.00	CURVED	
C269	4.71	135.25	STRAIGHT	
C270	1.62	1.00	CURVED	
C271	6.03	2.00	CURVED	
C272	4.63	118.00	STRAIGHT	
C273	4.07	141.25	STRAIGHT	
C274	1.48	1.00	CURVED	
C275	25.37	118.00	STRAIGHT	
C276	16.63	118.00	STRAIGHT	
C277	383.24	61.00	SPECIAL SLOPED	
C278	257.32	41.00	ROUNDED-STRAIGHT	
C279	1.59	1.00	CURVED	
C280	16.10	20.00	CURVED	
C281	6.97	5.00	CURVED	

GRANITE CURB - CURVED				
CURB #	LENGTH	RADIUS	CURB TYPE	
C301	4.71	3.00	CURVED	
C302	17.69	20.00	CURVED	
C303	9.42	3.00	CURVED	
C304	54.26	100.00	STRAIGHT	
C305	44.18	210.00	STRAIGHT	
C306	6.23	2.00	CURVED	

STRAIGHT GRANITE CURB - LINEAR		
CURB #	LENGTH	
L302	47.80	
L303	86.85	
L304	90.48	
L305	81.47	
L306	86.06	



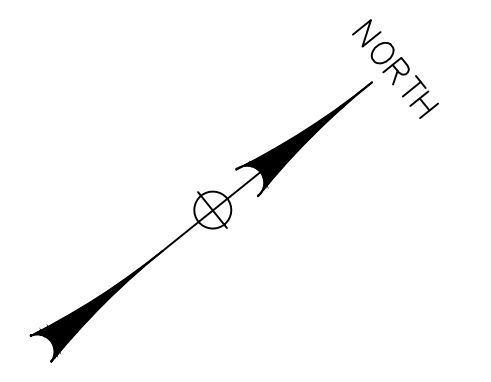
KEY ROAD ALIGNMENT CURVE DATA							
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	ENDING STATION	NORTHING	EASTING
CURVE NO. 10	200+92.10	155396.5674	817380.7838	R=300.00 Δ=5°21'05" L=28.02' T=14.02' PI STA=201+06.12 PI N=155403.5700 PI E=817368.6378	201+20.12	155409.4093	817355.8916
CURVE NO. 11	202+39.08	155458.9558	817247.7399	R=150.00 Δ=34°43'48" L=90.92' T=46.91' PI STA=202+85.98 PI N=155478.4922 PI E=817205.0953	203+30.00	155470.2529	817158.9179



McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

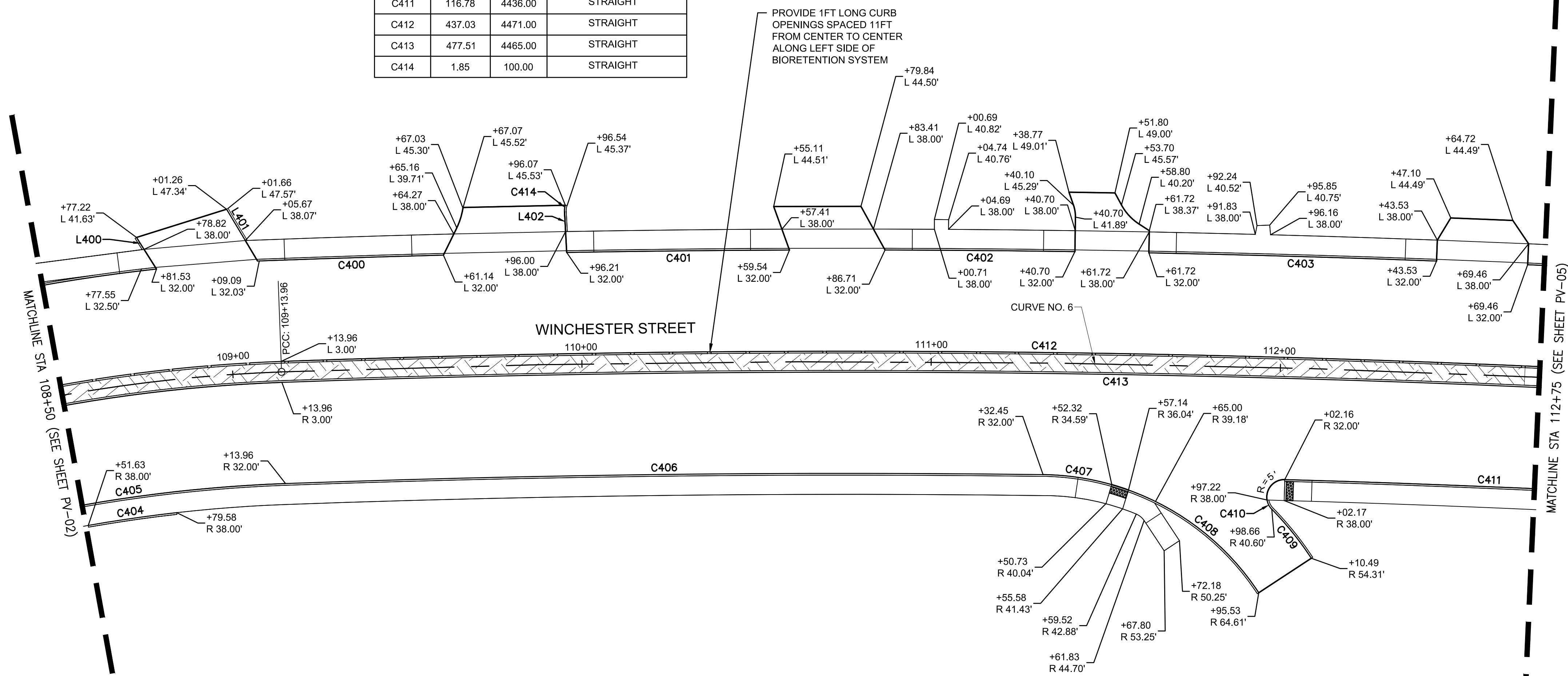
**CITY OF KEENE
KEENE, NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION
PAVEMENT LAYOUT PLAN
(SHEET 3 OF 6)**

SCALE: 1"=20'	DESIGN: BEP	PV-03 50 OF 143
DRAWN: MJF	PROJECT: 18022.01	
CHECKED: EWM	DATE: SEPTEMBER 2021	



STRAIGHT GRANITE CURB - LINEAR		
CURB #	LENGTH	
L400	4.03	
L401	10.44	
L402	5.72	

GRANITE CURB - CURVED			
CURB #	LENGTH	RADIUS	CURB TYPE
C400	52.74	4500.00	STRAIGHT
C401	63.78	4500.00	STRAIGHT
C402	54.37	4500.00	STRAIGHT
C403	82.40	4500.00	STRAIGHT
C404	25.59	412.00	STRAIGHT
C405	89.67	418.00	STRAIGHT
C406	216.93	4436.00	STRAIGHT
C407	19.95	75.00	STRAIGHT
C408	48.34	75.00	STRAIGHT
C409	18.06	93.00	STRAIGHT
C410	3.01	5.00	CURVED
C411	116.78	4436.00	STRAIGHT
C412	437.03	4471.00	STRAIGHT
C413	477.51	4465.00	STRAIGHT
C414	1.85	100.00	STRAIGHT



WINCHESTER STREET ALIGNMENT CURVE DATA							
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	ENDING STATION	NORTHING	EASTING
CURVE NO. 6	109+13.96	155670.1716	817552.2487	R = 4468.00' Δ = 5°41'09" L = 443.38' T = 221.87' PI STA = 111+35.83 PI N = 155847.9305 PI E = 817885.0218	113+57.33	156011.6608	817834.7526



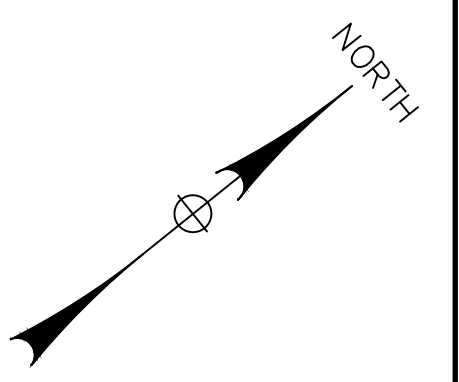
CITY OF KEENE
KEENE, NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION
PAVEMENT LAYOUT PLAN
(SHEET 4 OF 6)

McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

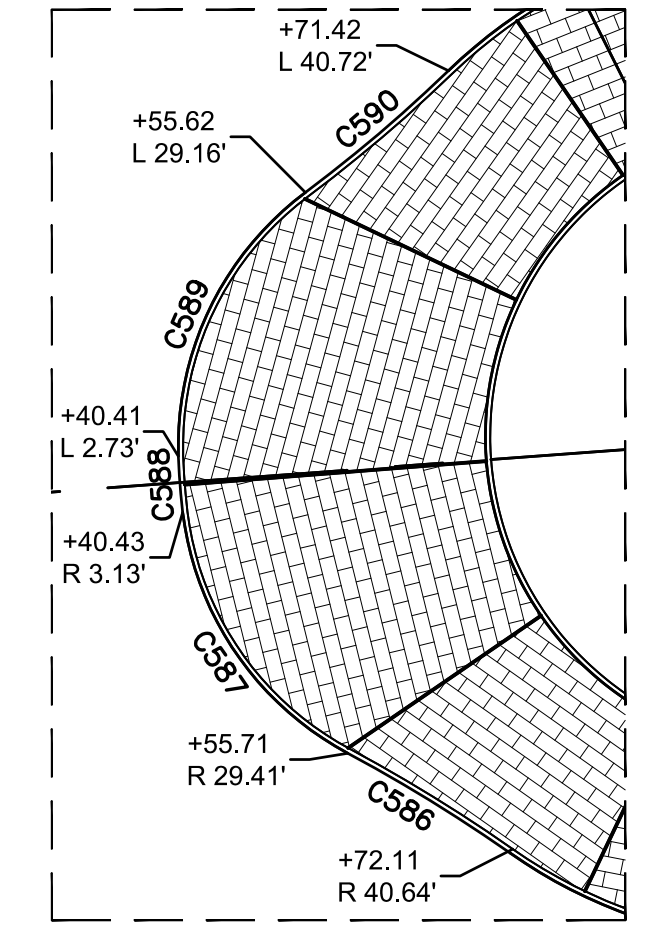
REV	DATE	DESCRIPTION	BY

SCALE: 1"=20'	DESIGN: BEP	PV-04 51 OF 143
DRAWN: MJF	PROJECT: 18022.01	
CHECKED: EWM	DATE: SEPTEMBER 2021	

M:\18022.01 KEENE WINCHESTER FINAL\DRAWINGS\SHEET FILES\18022.01-PVMT - 2020.DWG



FOR THIS SHEET'S CURB TABLES, SEE SHEET PV-06



INSET

ISLAND STREET ALIGNMENT CURVE DATA							
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	ENDING STATION	NORTHING	EASTING
CURVE NO. 15	501+53.25	156279.3404	817878.1822	R = 320.00' Δ=14°28'19" L=80.83' T=40.63' PI STA=501+93.88 PI N=156318.3784 PI E=817866.9210	502+34.08	156358.9919	817865.7729

PEARL STREET ALIGNMENT CURVE DATA							
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	ENDING STATION	NORTHING	EASTING
CURVE NO. 14	400+86.92	156150.4988	817835.7114	R = 120.00' Δ=12°57'11" L=27.13' T=13.62' PI STA=401+00.54 PI N=156153.3838 PI E=817822.3979	401+14.05	156153.2112	817808.7765

WINCHESTER STREET ALIGNMENT CURVE DATA							
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	ENDING STATION	NORTHING	EASTING
CURVE NO. 7	113+57.33	156011.6608	817834.7526	R = 250.00' Δ=7°50'54" L=34.24' T=17.15' PI STA=113+74.48 PI N=156024.3160 PI E=817846.3257	113+91.58	156038.4330	817856.0624
CURVE NO. 8	115+79.07	156156.2912	817990.2924	R = 90.00' Δ=23°25'45" L=36.80' T=18.66' PI STA=115+97.73 PI N=156162.4177 PI E=818007.9203	116+15.87	156175.0481	818021.6587
CURVE NO. 9	116+15.87	156175.0481	818021.6587	R = 390.00' Δ=21°00'18" L=142.98' T=72.30' PI STA=116+88.17 PI N=156223.9802 PI E=818074.8834	117+58.85	156250.5825	818142.1109



McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

**CITY OF KEENE
KEENE, NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION
PAVEMENT LAYOUT PLAN
(SHEET 5 OF 6)**

SCALE: 1"=20'	DESIGN: BEP	PV-05 52 OF 143
DRAWN: MJF	PROJECT: 18022.01	
CHECKED: EWM	DATE: SEPTEMBER 2021	

M:\18022.01\KEENE\WINCHESTER\DRAWINGS\SHEET FILES\18022.01-PVMT - 2020.DWG

STRAIGHT GRANITE CURB - LINEAR		
CURB #	LENGTH	
L500	20.66	
L501	21.46	
L502	17.93	
L503	13.56	ROUNDED
L504	21.61	
L505	13.61	
L506	32.86	
L507	12.93	
L508	45.00	
L509	12.08	
L510	12.88	

STRAIGHT GRANITE CURB - LINEAR		
CURB #	LENGTH	
L511	19.24	
L512	36.05	
L513	36.05	
L514	30.00	
L515	25.81	
L516	17.05	
L517	13.19	
L518	13.84	
L519	10.49	
L520	13.44	
L521	7.95	

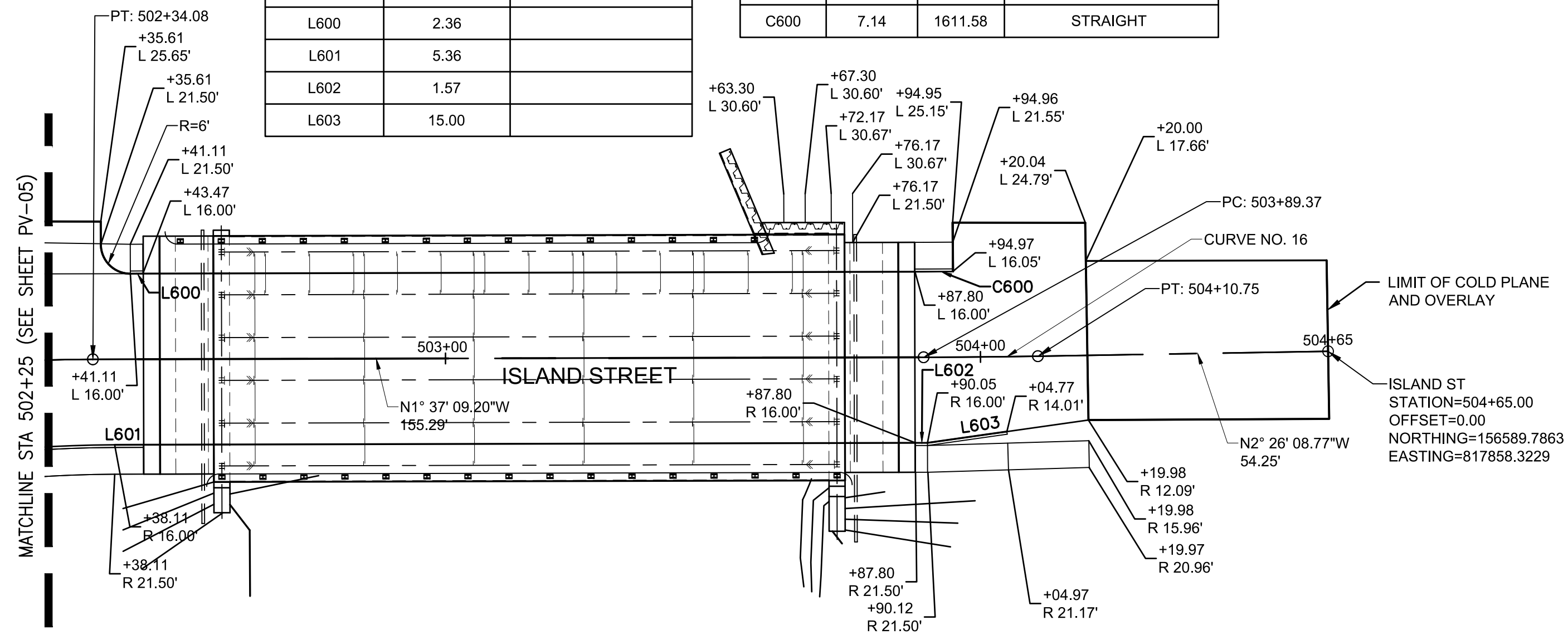
STRAIGHT GRANITE CURB - LINEAR		
CURB #	LENGTH	
L522	12.54	
L523	7.97	
L524	0.64	
L525	1.38	
L526	5.86	
L527	8.14	
L528	24.64	
L529	18.77	

GRANITE CURB - CURVED			
CURB #	LENGTH	RADIUS	CURB TYPE
C500	54.62	4500.00	STRAIGHT
C501	17.40	4500.00	STRAIGHT
C502	36.85	120.00	STRAIGHT
C503	38.27	120.00	ROUNDED-STRAIGHT
C504	42.81	35.00	ROUNDED-STRAIGHT
C505	6.88	35.00	STRAIGHT
C506	34.19	31.00	ROUNDED-STRAIGHT
C507	23.65	65.00	ROUNDED-STRAIGHT
C508	10.43	91.00	ROUNDED-STRAIGHT
C509	20.35	405.00	STRAIGHT
C510	31.97	4439.00	STRAIGHT
C511	22.49	170.00	STRAIGHT
C512	31.01	170.00	ROUNDED-STRAIGHT
C513	28.72	120.00	ROUNDED-STRAIGHT
C514	1.74	85.00	STRAIGHT
C515	4.66	3.00	CURVED
C516	32.95	300.00	STRAIGHT
C517	2.22	282.00	STRAIGHT
C518	4.71	3.00	CURVED
C519	32.86	40.00	STRAIGHT
C520	6.76	25.00	STRAIGHT
C521	9.42	3.00	CURVED
C522	7.15	75.00	STRAIGHT
C523	10.03	75.00	STRAIGHT
C524	16.73	75.88	ROUNDED-STRAIGHT
C525	32.39	83.86	ROUNDED-STRAIGHT
C526	49.08	200.00	ROUNDED-STRAIGHT
C527	24.09	272.00	STRAIGHT
C528	1.07	270.00	STRAIGHT
C529	50.85	200.00	STRAIGHT
C530	99.07	1205.00	STRAIGHT
C531	23.49	1202.00	STRAIGHT
C532	21.91	83.00	STRAIGHT
C533	24.25	83.00	ROUNDED-STRAIGHT
C534	29.73	55.51	ROUNDED-STRAIGHT
C535	33.13	145.00	ROUNDED-STRAIGHT
C536	16.25	145.00	STRAIGHT
C537	39.49	230.00	STRAIGHT
C538	59.65	230.00	STRAIGHT
C539	43.40	155.00	STRAIGHT
C540	1.68	1.00	CURVED
C541	1.41	1.00	CURVED
C542	13.40	155.00	STRAIGHT
C543	5.78	3.00	CURVED
C544	19.19	53.75	STRAIGHT
C545	2.18	1.00	CURVED
C546	17.76	165.00	STRAIGHT
C547	1.32	1.00	CURVED
C548	1.77	1.00	CURVED
C549	3.79	165.00	STRAIGHT
C550	3.06	1.00	CURVED

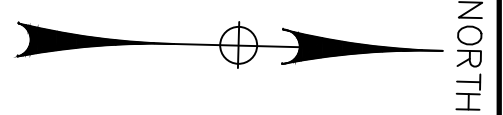
GRANITE CURB - CURVED			
CURB #	LENGTH	RADIUS	CURB TYPE
C551	1.57	1.00	CURVED
C552	1.57	1.00	CURVED
C553	5.31	45.00	STRAIGHT
C554	5.39	3.00	CURVED
C555	8.28	85.25	STRAIGHT
C556	2.26	1.00	CURVED
C557	21.31	39.00	STRAIGHT
C558	1.42	1.00	CURVED
C559	1.65	1.00	CURVED
C560	2.07	1.00	CURVED
C561	18.87	120.00	STRAIGHT
C562	1.41	1.00	CURVED
C563	1.65	1.00	CURVED
C564	18.08	120.00	STRAIGHT
C565	39.72	228.00	STRAIGHT
C566	4.58	1.50	CURVED
C567	57.68	342.00	STRAIGHT
C568	1.72	1.00	CURVED
C569	1.39	1.00	CURVED
C570	14.74	150.00	STRAIGHT
C571	5.49	3.00	CURVED
C572	14.06	85.25	STRAIGHT
C573	7.28	3.00	CURVED
C574	36.83	73.25	STRAIGHT
C575	2.19	1.00	CURVED
C576	19.43	112.00	STRAIGHT
C577	1.44	1.00	CURVED
C578	1.63	1.00	CURVED
C579	36.88	112.00	STRAIGHT
C580	6.80	498.00	STRAIGHT
C581	6.01	2.00	CURVED
C582	49.29	312.00	STRAIGHT
C583	2.12	1.00	CURVED
C584	0.99	1.00	CURVED
C585	16.95	224.00	STRAIGHT
C586	19.85	165.00	SPECIAL SLOPED
C587	31.59	33.00	SPECIAL SLOPED
C588	5.87	65.00	SPECIAL SLOPED
C589	31.70	33.00	SPECIAL SLOPED
C590	19.59	155.00	SPECIAL SLOPED
C591	239.66	53.00	SPECIAL SLOPED
C592	207.32	33.00	ROUNDED-STRAIGHT
C593	9.42	3.00	CURVED

STRAIGHT GRANITE CURB - LINEAR		
CURB #	LENGTH	
L600	2.36	
L601	5.36	
L602	1.57	
L603	15.00	

GRANITE CURB - CURVED			
CURB #	LENGTH	RADIUS	CURB TYPE
C600	7.14	1611.58	STRAIGHT



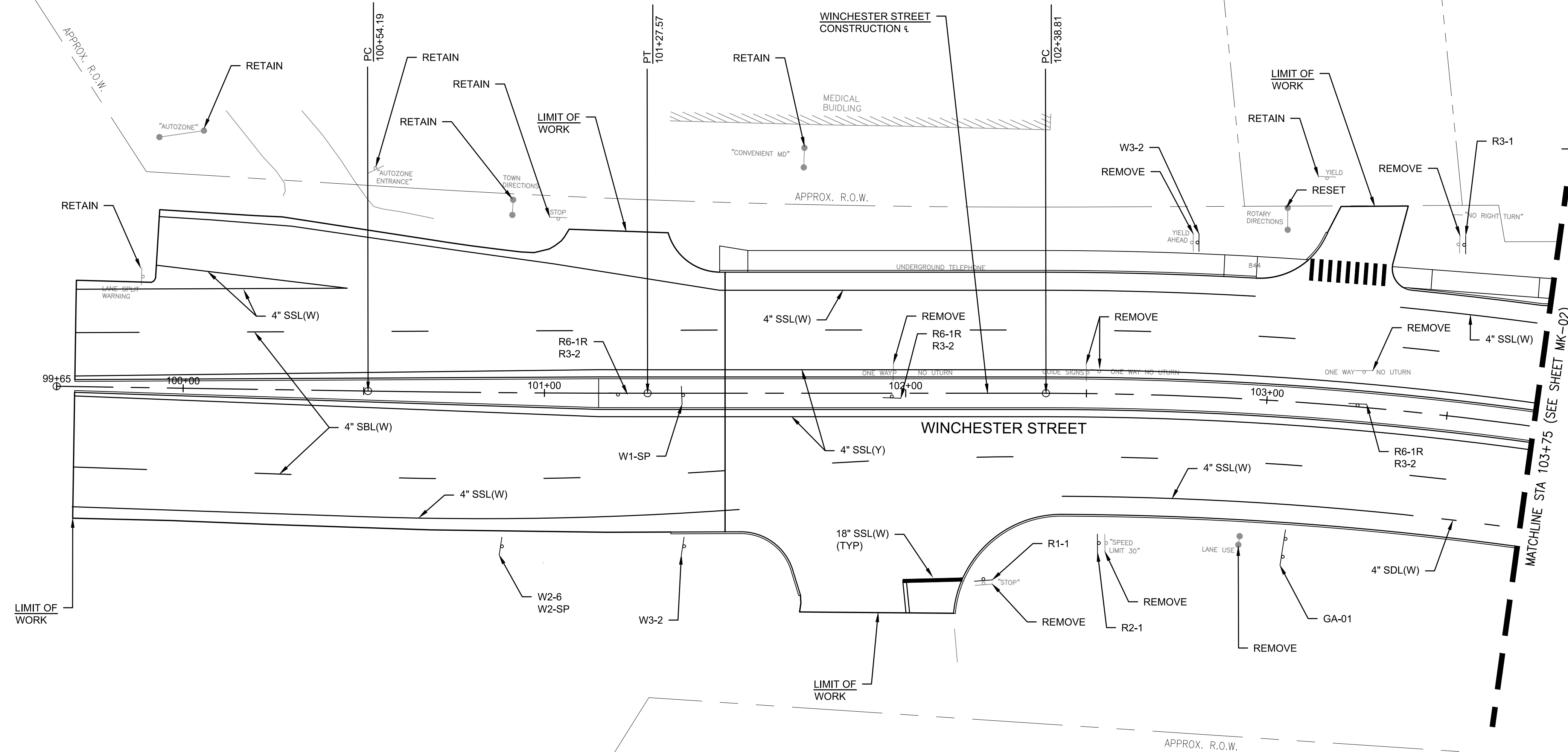
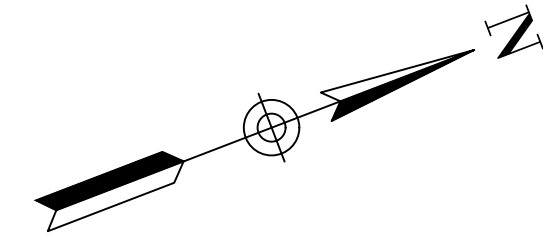
ISLAND STREET ALIGNMENT CURVE DATA							
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	ENDING STATION	NORTHING	EASTING
CURVE NO. 16	503+89.37	156514.2204	817861.3849	R=1500.00' Δ=0°49'00" L=21.38' T=10.69' PI STA=504+00.06 PI N=156524.9050 PI E=817861.0828	504+10.75	156535.5841	817860.6286



McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

**CITY OF KEENE
KEENE, NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION
PAVEMENT LAYOUT PLAN
(SHEET 6 OF 6)**

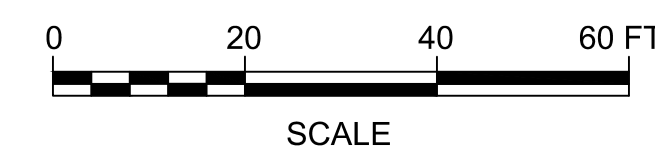
SCALE: 1"=20'	DESIGN: BEP	PV-06 53 OF 143
DRAWN: MJF	PROJECT: 18022.01	
CHECKED: EWM	DATE: SEPTEMBER 2021	



LEGEND

- { }SSL()* = {SIZE IN INCHES} SINGLE SOLID LINE (COLOR W=WHITE, Y=YELLOW)
- { }DSL()* = {SIZE IN INCHES} DOUBLE SOLID LINE (COLOR W=WHITE, Y=YELLOW)
- { }SSB()* = {SIZE IN INCHES} SINGLE SOLID W/ BROKEN LINE (COLOR W=WHITE, Y=YELLOW)
- { }SBL()* = {SIZE IN INCHES} SINGLE BROKEN LINE (COLOR W=WHITE, Y=YELLOW)
- { }DBL()* = {SIZE IN INCHES} DOUBLE BROKEN LINE (COLOR W=WHITE, Y=YELLOW)
- { }SDL()* = {SIZE IN INCHES} SINGLE DOTTED LINE (COLOR W=WHITE, Y=YELLOW)

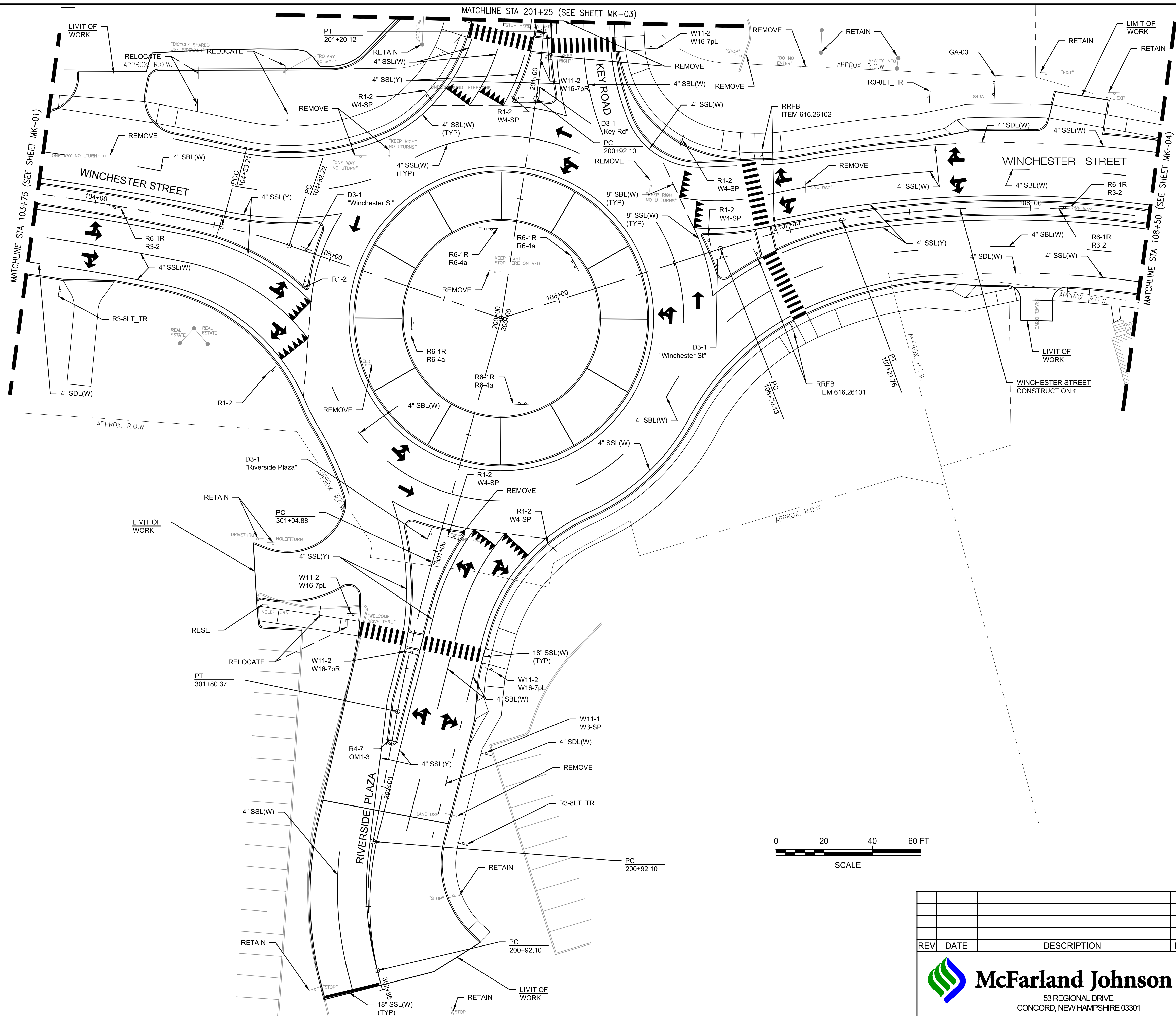
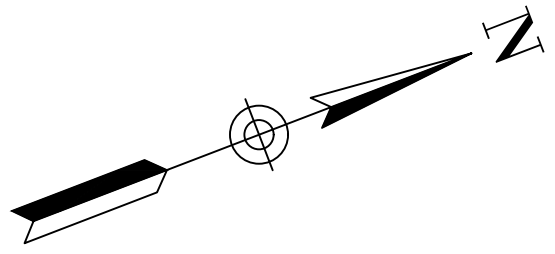
NOTES:
 1. ALL SIGN LOCATIONS ARE APPROXIMATE AND ARE TO BE FIELD LOCATED AND APPROVED BY ENGINEER.



McFarland Johnson
 53 REGIONAL DRIVE
 CONCORD, NEW HAMPSHIRE 03301

CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
SIGNING AND MARKING PLAN (SHEET 1 OF 6)			
SCALE: 1"=20'	DESIGN: BEP	MK-01 54 OF 143	
DRAWN: MJF	PROJECT: 18022.01		
CHECKED: EWM	DATE: SEPTEMBER 2021		

M:\18022.01 KEENE WINCHESTER FINAL DRAWINGS\SHSHEET FILES\18022.01-MARK.DWG



REV	DATE	DESCRIPTION	BY

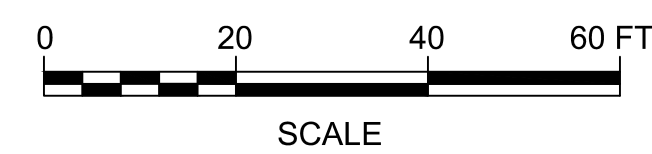
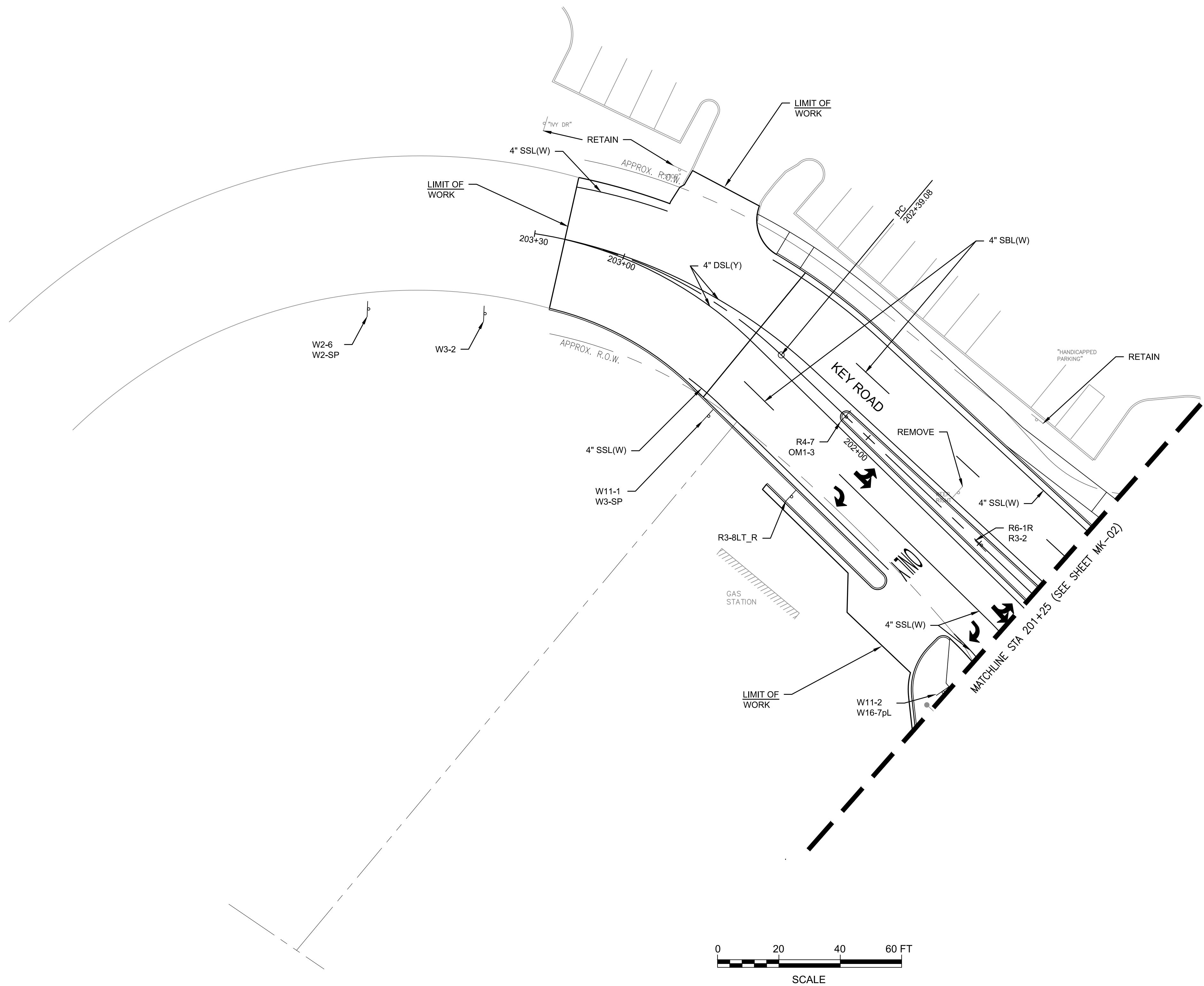
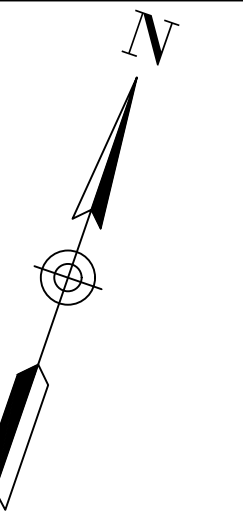
McFarland Johnson
 53 REGIONAL DRIVE
 CONCORD, NEW HAMPSHIRE 03301

**CITY OF KEENE
 KEENE, NEW HAMPSHIRE
 WINCHESTER STREET
 RECONSTRUCTION**

**SIGNING AND MARKING PLAN
 (SHEET 2 OF 6)**

SCALE: 1"=20'	DESIGN: BEP	MK-02 55 OF 143
DRAWN: MJF	PROJECT: 18022.01	
CHECKED: EWM	DATE: SEPTEMBER 2021	

M:\18022.01 KEENE WINCHESTER FINAL DRAWINGS\SHSHEET FILES\18022.01-MARK.DWG



REV	DATE	DESCRIPTION	BY

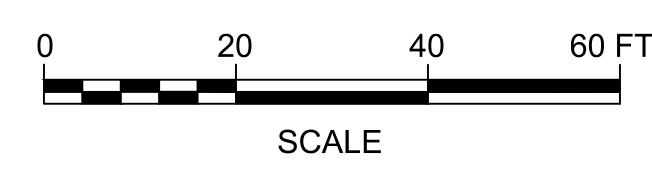
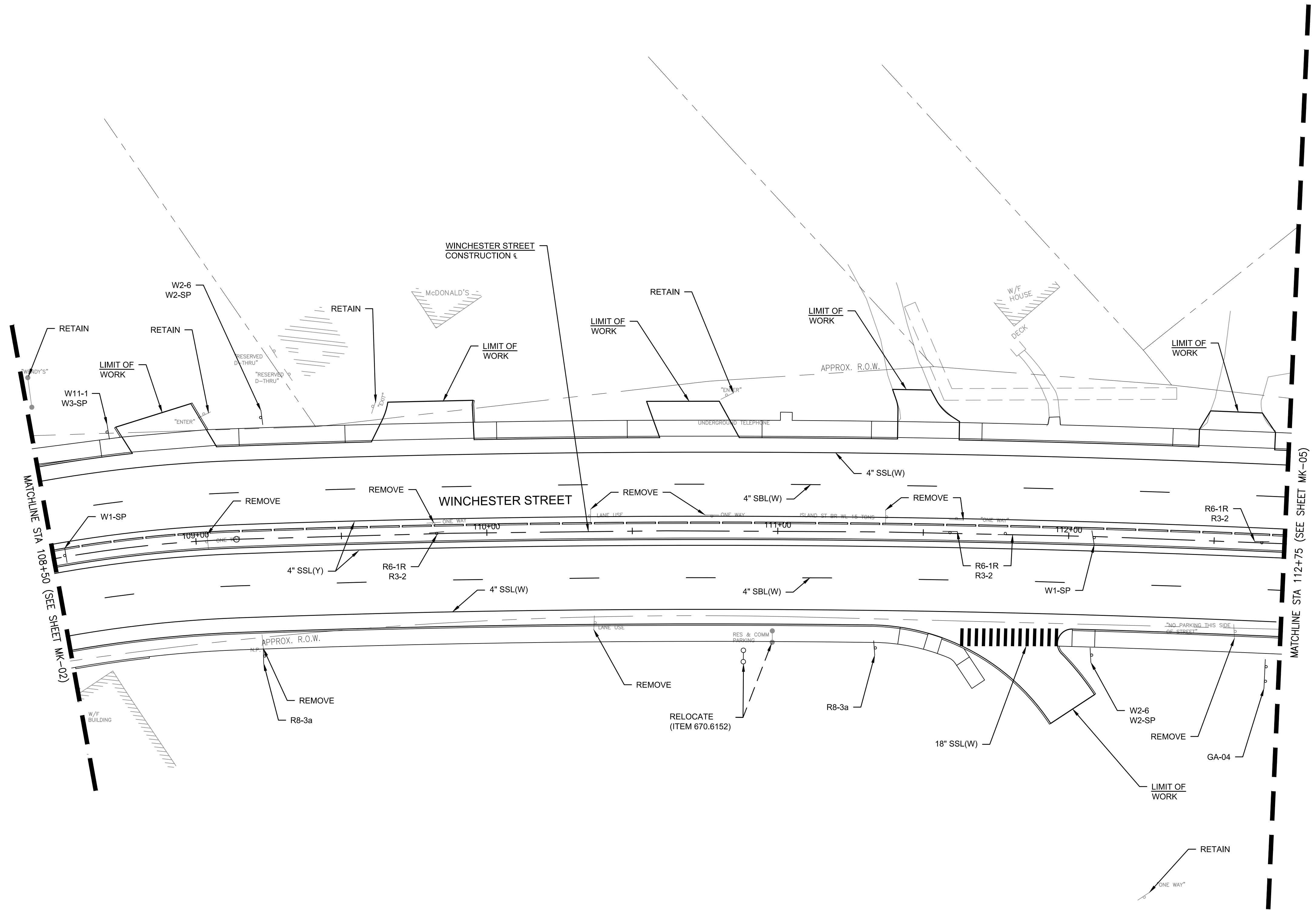
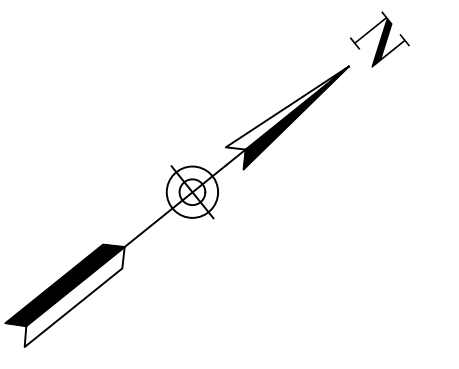
McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301


**CITY OF KEENE
KEENE, NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION**

**SIGNING AND MARKING PLAN
(SHEET 3 OF 6)**

SCALE: 1"=20'	DESIGN: BEP	MK-03 56 OF 143
DRAWN: MJF	PROJECT: 18022.01	
CHECKED: EWM	DATE: SEPTEMBER 2021	

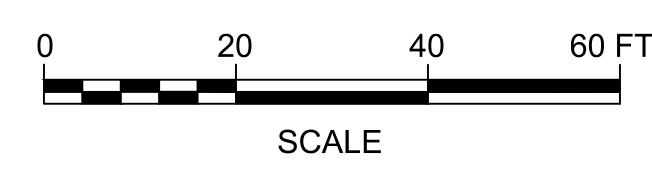
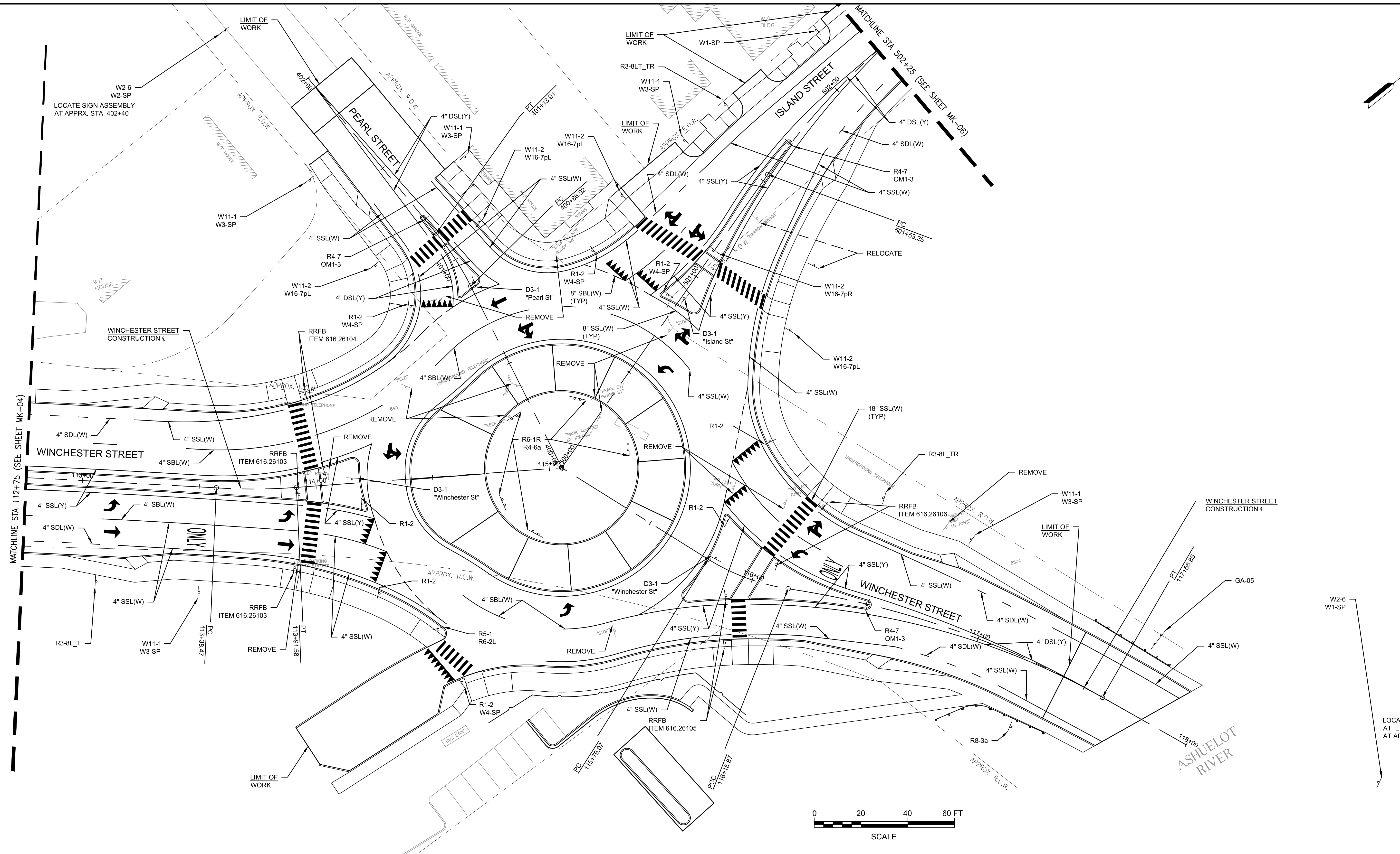
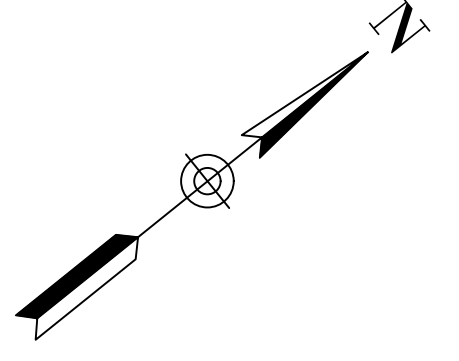
M:\18022.01 KEENE WINCHESTER FINAL DRAWINGS\SHSHEET FILES\18022.01-MARK.DWG



 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301			
REV	DATE	DESCRIPTION	BY

CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION		
SIGNING AND MARKING PLAN (SHEET 4 OF 6)		
SCALE: 1"=20'	DESIGN: BEP	MK-04 <small>57 OF 143</small>
DRAWN: MJF	PROJECT: 18022.01	
CHECKED: EWM	DATE: SEPTEMBER 2021	

M:\18022.01 KEENE WINCHESTER FINAL DRAWINGS\SHEET FILES\18022.01-MARK.DWG



REV	DATE	DESCRIPTION	BY

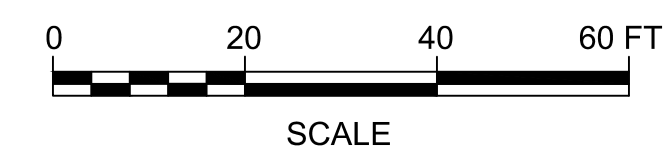
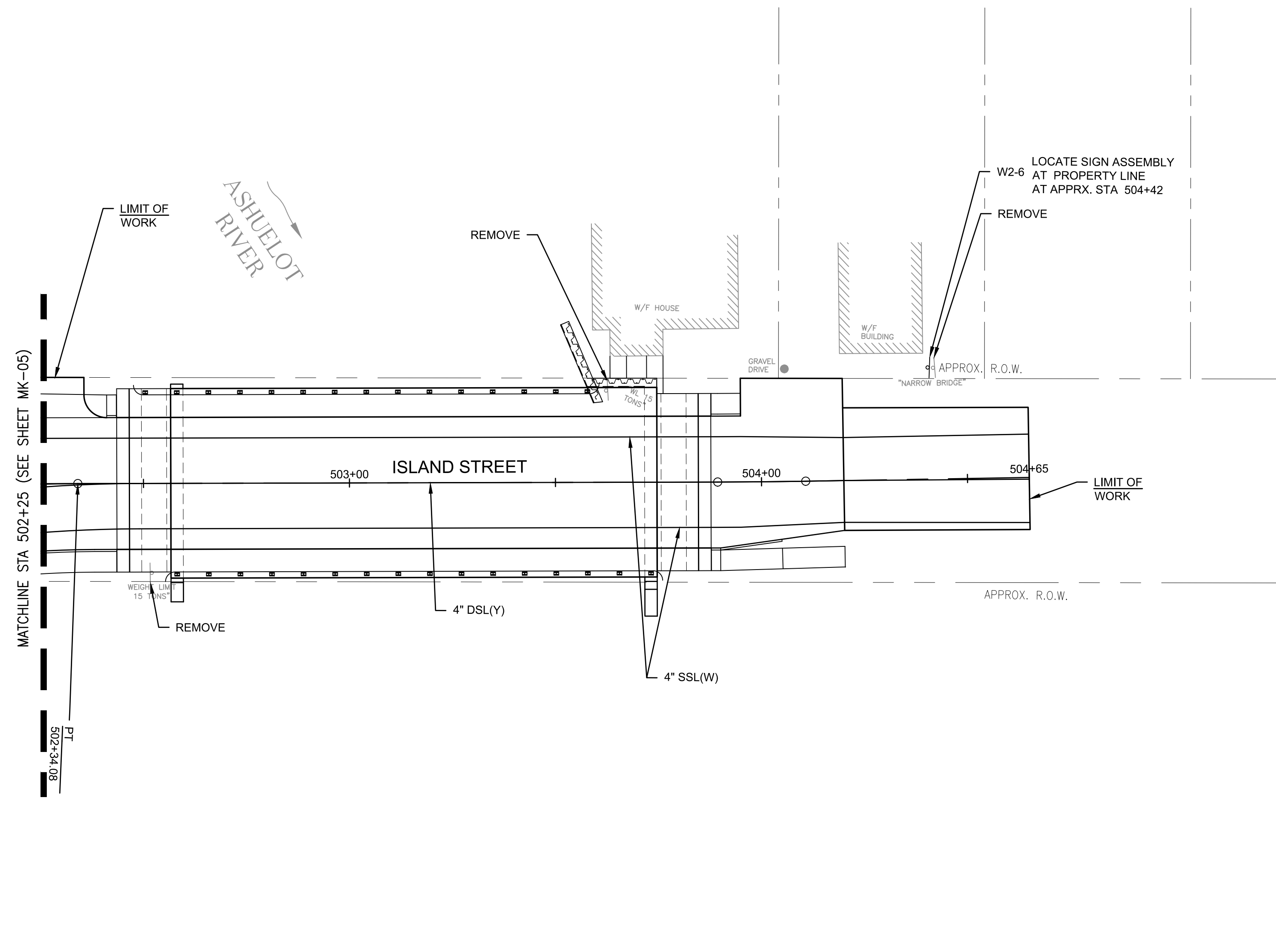
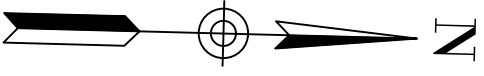
McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

**CITY OF KEENE
KEENE, NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION**

**SIGNING AND MARKING PLAN
(SHEET 5 OF 6)**

SCALE: 1"=20'	DESIGN: BEP	MK-05 58 OF 143
DRAWN: MJF	PROJECT: 18022.01	
CHECKED: EWM	DATE: SEPTEMBER 2021	

M:\18022.01 KEENE WINCHESTER FINAL\DRAWINGS\SHEET FILES\18022.01-MARK.DWG



REV	DATE	DESCRIPTION	BY

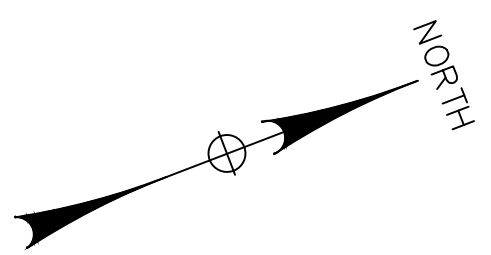
McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

**CITY OF KEENE
KEENE, NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION**

**SIGNING AND MARKING PLAN
(SHEET 6 OF 6)**

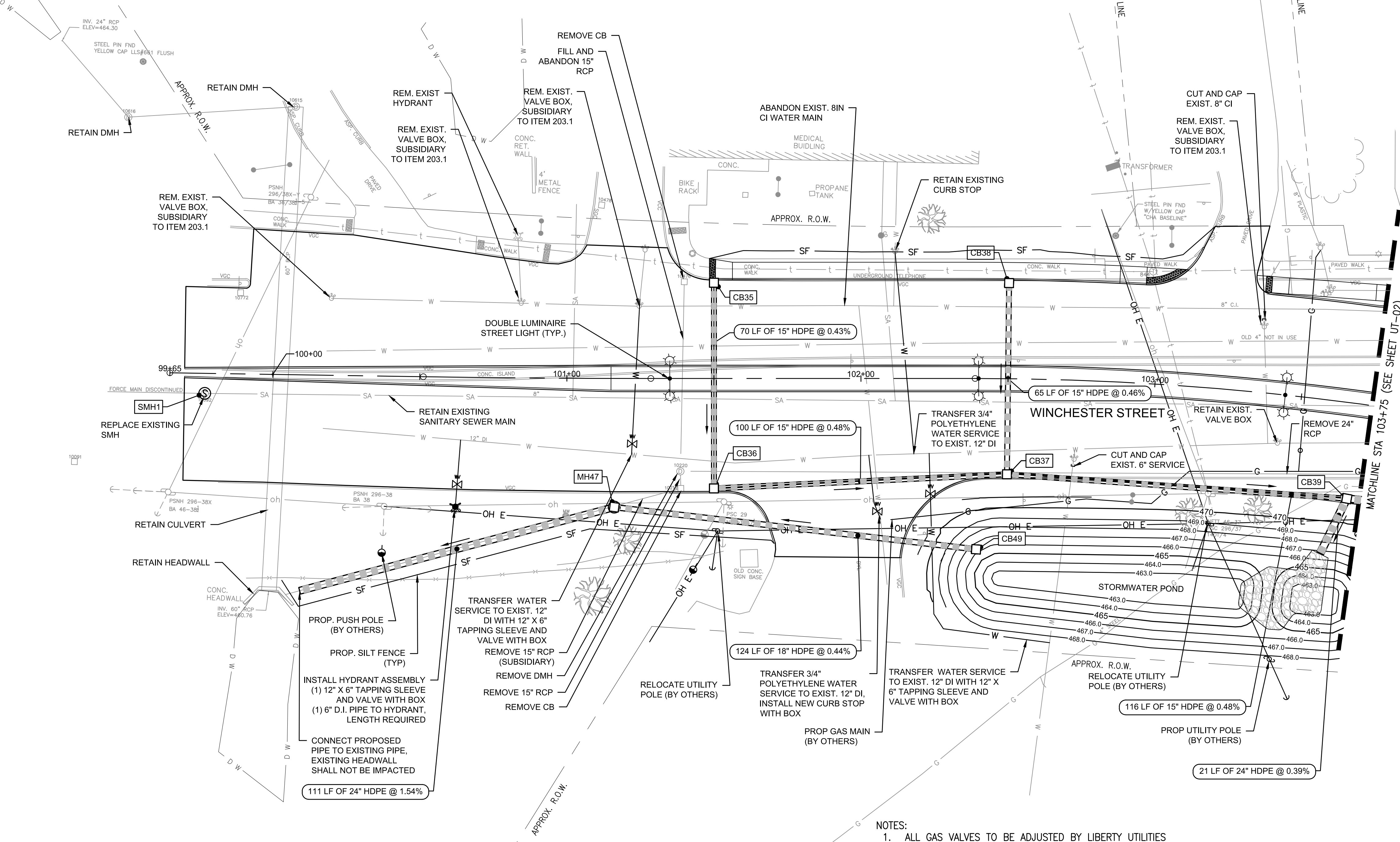
SCALE: 1"=20'	DESIGN: BEP	MK-06 59 OF 143
DRAWN: MJF	PROJECT: 18022.01	
CHECKED: EWM	DATE: SEPTEMBER 2021	

M:\18022.01 KEENE WINCHESTER FINAL DRAWINGS\SHEET FILES\18022.01-MARK.DWG



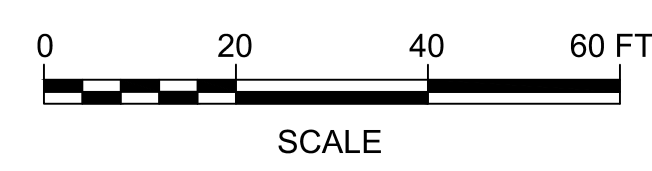
SANITARY SEWER STRUCTURE TABLE						
STRUCTURE	RIM	INV(S) IN	INV OUT	NORTHING	EASTING	STATION
SMH1	473.55		464.90(N)	154819.42	817196.94	99+77.0, 6.8 R


CB 10219 RIM=471.31
 INV. 15" RCP(NW)=466.29
 SUMP=463.16
 CB 10476 RIM=471.27
 INV. 15" RCP(SE)=464.62
 SUMP=461.42
 SMH 10092 RIM=473.55
 INV. 8" (NE)=464.90
 INV. 8" (SW)=464.80
 DMH 10615 RIM=471.31
 FILLED WITH WATER



DRAINAGE STRUCTURE TABLE							
STRUCTURE	RIM	INV(S) IN	INV OUT	NORTHING	EASTING	STATION	DESCRIPTION
CB35	471.42		467.55(E)	154994.54	817223.80	101+50.0, 32.6 L	SLAB TOP, DEEP SUMP
CB36	471.33	467.25(W)	465.62(N)	154969.50	817289.09	101+50.0, 37.4 R	SLAB TOP
CB37	470.64	466.60(W) 465.14(S)	464.89(NE)	155064.25	817320.27	102+50.0, 32.5 R	SLAB TOP
CB38	470.64		466.90(E)	155088.21	817259.85	102+50.0, 32.5 L	SLAB TOP, DEEP SUMP
CB39	469.70	464.33(SW) 463.08(NE)	463.08(SE)	155169.19	817369.38	103+69.8, 32.5 R	5' DIA.
CB49	467.75		464.50(SW)	155045.34	817340.33	102+39.2, 58.1 R	OUTLET CONTROL STRUCTURE
MH47	472.01	463.95(NE)	463.70(S)	154935.59	817282.89	101+16.2, 43.7 R	

- NOTES:
1. ALL GAS VALVES TO BE ADJUSTED BY LIBERTY UTILITIES
 2. ALL WATER VALVES TO BE ADJUSTED BY CONTRACTOR
 3. ALL TELEPHONE MANHOLES TO BE ADJUSTED BY CONTRACTOR
 4. ALL SEWER MANHOLES TO BE ADJUSTED BY CONTRACTOR




McFarland Johnson
 53 REGIONAL DRIVE
 CONCORD, NEW HAMPSHIRE 03301

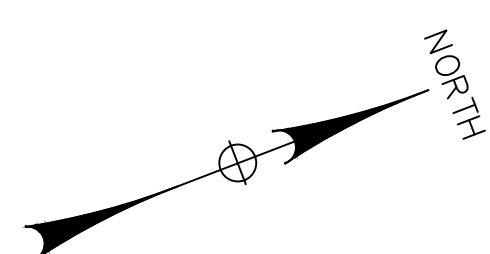
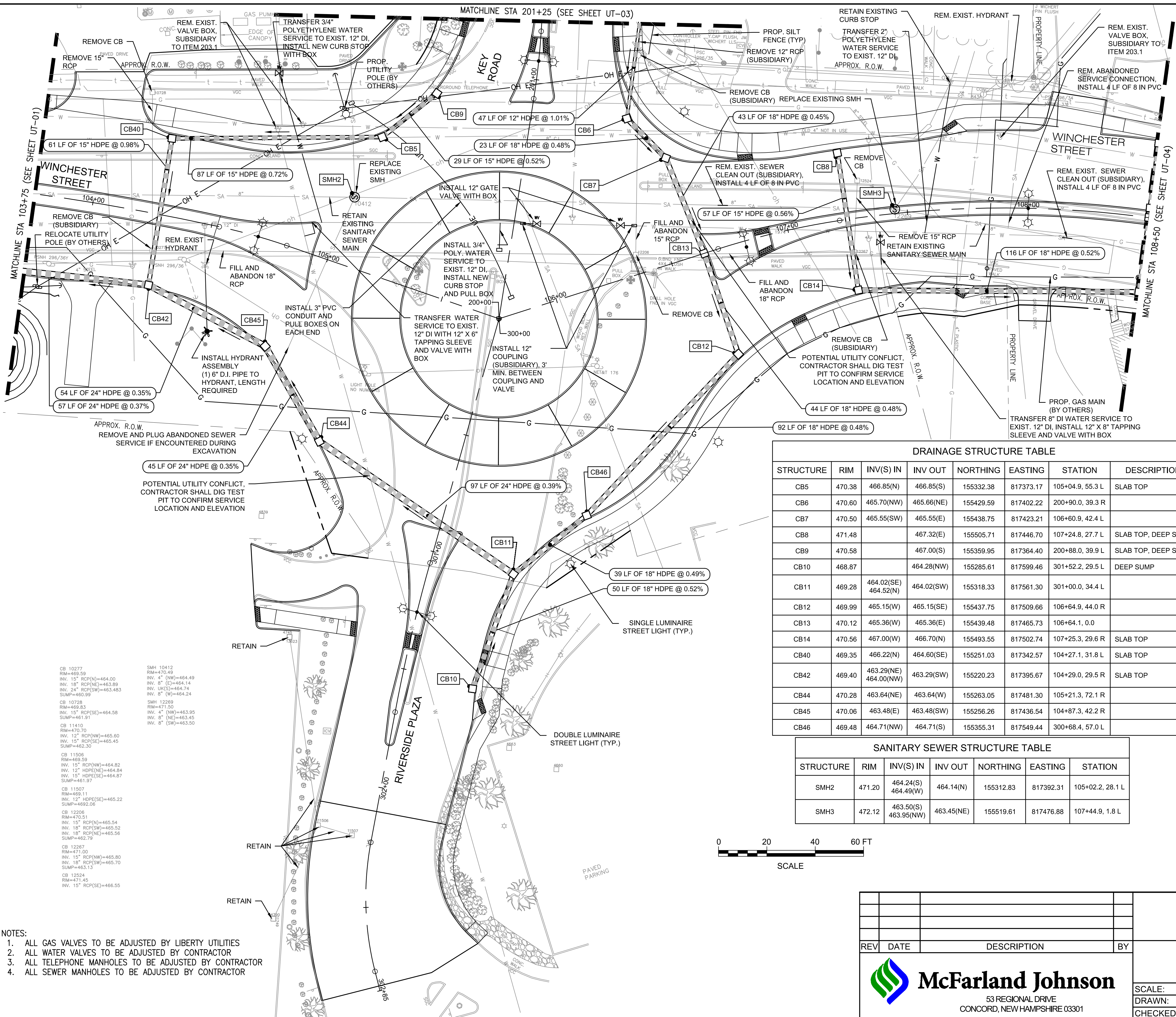
CITY OF KEENE
 KEENE, NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION
UTILITY PLAN
(SHEET 1 OF 6)

REV	DATE	DESCRIPTION	BY

SCALE: 1"=20'
 DESIGN: BEP
 DRAWN: MJF
 PROJECT: 18022.01
 CHECKED: EWM
 DATE: SEPTEMBER 2021

UT-01
 62 OF 143

M:\18022.01 KEENE WINCHESTER FINAL DRAWINGS\SHSHEET FILES\18022.01-UTL.DWG

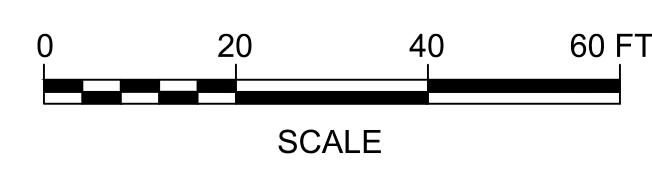


- NOTES:
1. ALL GAS VALVES TO BE ADJUSTED BY LIBERTY UTILITIES
 2. ALL WATER VALVES TO BE ADJUSTED BY CONTRACTOR
 3. ALL TELEPHONE MANHOLES TO BE ADJUSTED BY CONTRACTOR
 4. ALL SEWER MANHOLES TO BE ADJUSTED BY CONTRACTOR

CB 10277 RM=469.59 INV. 15" RCP(N)=464.00 INV. 18" RCP(NE)=463.89 INV. 24" RCP(SW)=463.483 SUMP=460.99	SMH 10412 RM=470.18 INV. 4" (NW)=464.49 INV. 8" (E)=464.14 INV. UN(S)=464.74 INV. 8" (W)=464.24
CB 10728 RM=469.83 INV. 15" RCP(SE)=464.58 SUMP=461.91	SMH 12269 RM=471.55 INV. 4" (NW)=463.95 INV. 8" (NE)=463.45 INV. 8" (SW)=463.50
CB 11410 RM=470.70 INV. 12" RCP(NW)=465.60 INV. 15" RCP(SE)=465.45 SUMP=462.30	
CB 11506 RM=469.59 INV. 15" RCP(NW)=464.82 INV. 12" HDPE(NE)=464.84 INV. 15" HDPE(SE)=464.87 SUMP=461.97	
CB 11507 RM=469.11 INV. 12" HDPE(SE)=465.22 SUMP=4692.06	
CB 12206 RM=470.51 INV. 15" RCP(N)=465.54 INV. 18" RCP(SW)=465.52 INV. 18" RCP(NE)=465.56 SUMP=462.79	
CB 12267 RM=471.00 INV. 15" RCP(NW)=465.80 INV. 18" RCP(SW)=465.70 SUMP=463.13	
CB 12524 RM=471.45 INV. 15" RCP(SE)=466.55	

DRAINAGE STRUCTURE TABLE							
STRUCTURE	RIM	INV(S) IN	INV OUT	NORTHING	EASTING	STATION	DESCRIPTION
CB5	470.38	466.85(N)	466.85(S)	155332.38	817373.17	105+04.9, 55.3 L	SLAB TOP
CB6	470.60	465.70(NW)	465.66(NE)	155429.59	817402.22	200+90.0, 39.3 R	
CB7	470.50	465.55(SW)	465.55(E)	155438.75	817423.21	106+60.9, 42.4 L	
CB8	471.48		467.32(E)	155505.71	817446.70	107+24.8, 27.7 L	SLAB TOP, DEEP SUMP
CB9	470.58		467.00(S)	155359.95	817364.40	200+88.0, 39.9 L	SLAB TOP, DEEP SUMP
CB10	468.87		464.28(NW)	155285.61	817599.46	301+52.2, 29.5 L	DEEP SUMP
CB11	469.28	464.02(SE) 464.52(N)	464.02(SW)	155318.33	817561.30	301+00.0, 34.4 L	
CB12	469.99	465.15(W)	465.15(SE)	155437.75	817509.66	106+64.9, 44.0 R	
CB13	470.12	465.36(W)	465.36(E)	155439.48	817465.73	106+64.1, 0.0	
CB14	470.56	467.00(W)	466.70(N)	155493.55	817502.74	107+25.3, 29.6 R	SLAB TOP
CB40	469.35	466.22(N)	464.60(SE)	155251.03	817342.57	104+27.1, 31.8 L	SLAB TOP
CB42	469.40	463.29(NE) 464.00(NW)	463.29(SW)	155220.23	817395.67	104+29.0, 29.5 R	SLAB TOP
CB44	470.28	463.64(NE)	463.64(W)	155263.05	817481.30	105+21.3, 72.1 R	
CB45	470.06	463.48(E)	463.48(SW)	155256.26	817436.54	104+87.3, 42.2 R	
CB46	469.48	464.71(NW)	464.71(S)	155355.31	817549.44	300+68.4, 57.0 L	

SANITARY SEWER STRUCTURE TABLE						
STRUCTURE	RIM	INV(S) IN	INV OUT	NORTHING	EASTING	STATION
SMH2	471.20	464.24(S) 464.49(W)	464.14(N)	155312.83	817392.31	105+02.2, 28.1 L
SMH3	472.12	463.50(S) 463.95(NW)	463.45(NE)	155519.61	817476.88	107+44.9, 1.8 L

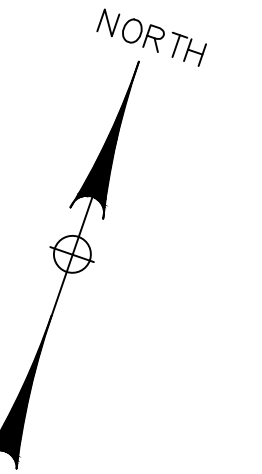


McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

**CITY OF KEENE
KEENE, NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION
UTILITY PLAN
(SHEET 2 OF 6)**

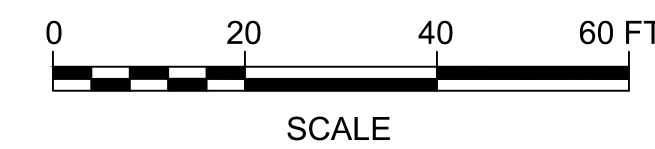
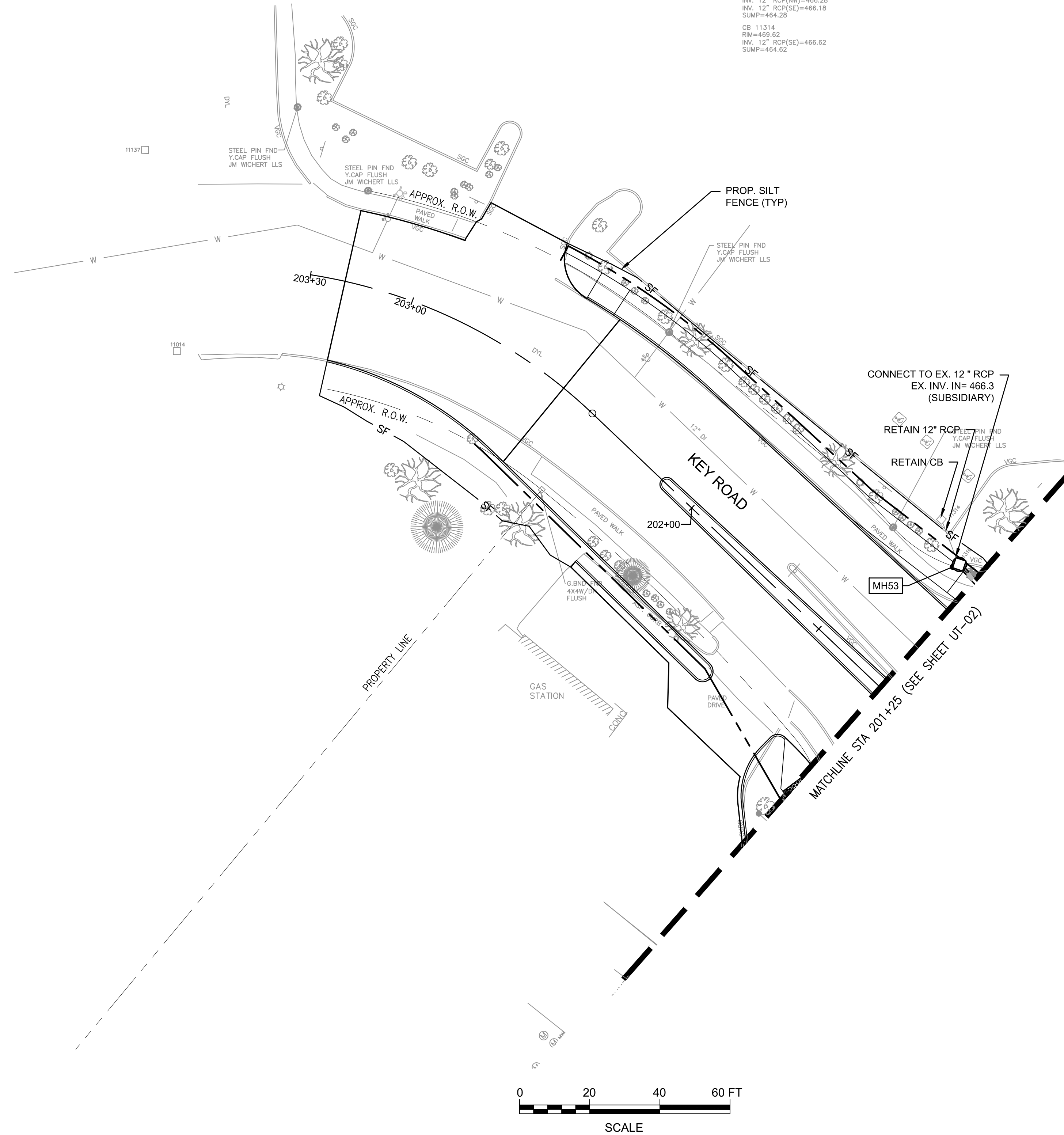
SCALE: 1"=20'	DESIGN: BEP	UT-02 63 OF 143
DRAWN: MJF	PROJECT:18022.01	
CHECKED: EWM	DATE:SEPTEMBER 2021	

M:\18022.01 KEENE WINCHESTER FINAL\DRAWINGS\SHEET FILES\18022.01-UT11.DWG




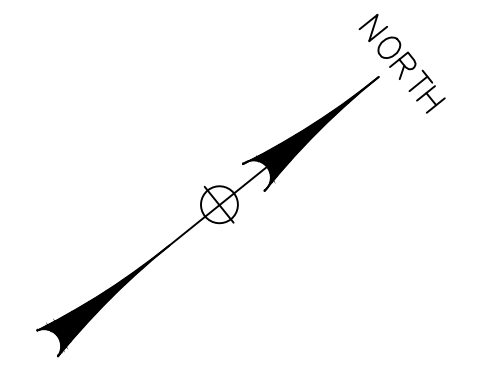
CB 11316
RIM=470.18
INV. 12" RCP(NW)=466.28
INV. 12" RCP(SE)=466.18
SUMP=464.28
CB 11314
RIM=469.62
INV. 12" RCP(SE)=466.62
SUMP=464.62

DRAINAGE STRUCTURE TABLE							
STRUCTURE	RIM	INV(S) IN	INV OUT	NORTHING	EASTING	STATION	DESCRIPTION
MH53	471.83		466.18(SE)	155452.25	817360.65	201+33.6, 40.9 R	



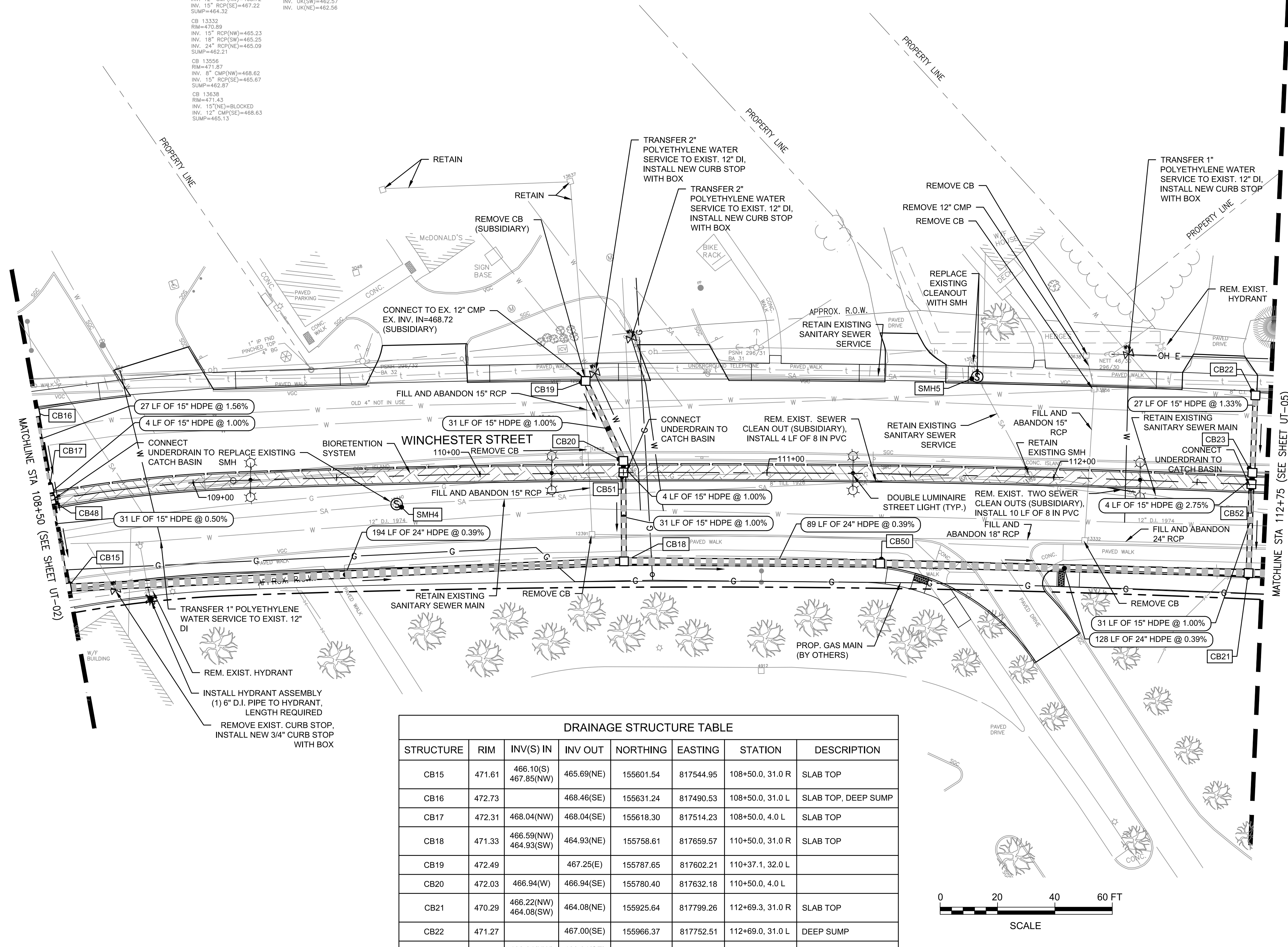
- NOTES:
1. ALL GAS VALVES TO BE ADJUSTED BY LIBERTY UTILITIES
 2. ALL WATER VALVES TO BE ADJUSTED BY CONTRACTOR
 3. ALL TELEPHONE MANHOLES TO BE ADJUSTED BY CONTRACTOR
 4. ALL SEWER MANHOLES TO BE ADJUSTED BY CONTRACTOR

				CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION	
				UTILITY PLAN (SHEET 3 OF 6)	
REV	DATE	DESCRIPTION	BY		
 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301				SCALE: 1"=20'	DESIGN: BEP
				DRAWN: MJF	PROJECT:18022.01
				CHECKED: EWM	DATE:SEPTEMBER 2021
					UT-03 64 OF 143



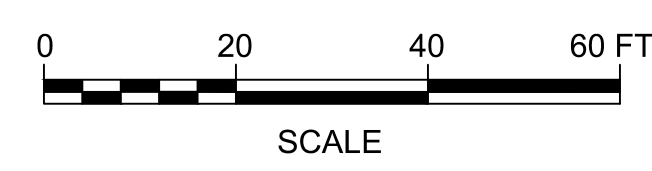
SANITARY SEWER STRUCTURE TABLE						
STRUCTURE	RIM	INV(S) IN	INV OUT	NORTHING	EASTING	STATION
SMH4	472.17	462.66(SW)	462.61(NE)	155709.42	817594.36	109+70.7, 9.9 R
SMH5	475.54			155894.89	817686.66	111+72.6, 34.3 L

CB 12391 RIM=471.41 INV. 15" RCP(N)=465.91 INV. 18" RCP(NE)=465.86 SUMP=462.89
 CB 12428 RIM=472.03 INV. 15" RCP(NW)=465.88 INV. 15" RCP(SE)=466.03
 CB 12999 RIM=472.82 INV. 12" CMP(NW)=468.72 INV. 15" RCP(SE)=467.22 SUMP=464.32
 CB 13332 RIM=470.89 INV. 15" RCP(NW)=465.23 INV. 18" RCP(SW)=465.25 INV. 24" RCP(NE)=465.09 SUMP=462.23
 CB 13556 RIM=471.87 INV. 8" CMP(NW)=468.62 INV. 15" RCP(SE)=465.67 SUMP=462.87
 CB 13639 RIM=471.43 INV. 15"(NE)=BLOCKED INV. 12" CMP(SE)=468.63 SUMP=465.13
 SMH 12440 RIM=471.91 INV. 8" (NE)=462.61 INV. 8" (SE)=462.66
 SMH 13235 RIM=472.63 FILLED WITH GRAVEL
 SMH 13359 RIM=471.32 INV. 6" PVC(W)=464.82 INV. UK(SW)=462.57 INV. UK(NE)=462.56



DRAINAGE STRUCTURE TABLE							
STRUCTURE	RIM	INV(S) IN	INV OUT	NORTHING	EASTING	STATION	DESCRIPTION
CB15	471.61	466.10(S) 467.85(NW)	465.69(NE)	155601.54	817544.95	108+50.0, 31.0 R	SLAB TOP
CB16	472.73		468.46(SE)	155631.24	817490.53	108+50.0, 31.0 L	SLAB TOP, DEEP SUMP
CB17	472.31	468.04(NW)	468.04(SE)	155618.30	817514.23	108+50.0, 4.0 L	SLAB TOP
CB18	471.33	466.59(NW) 464.93(SW)	464.93(NE)	155758.61	817659.57	110+50.0, 31.0 R	SLAB TOP
CB19	472.49		467.25(E)	155787.65	817602.21	110+37.1, 32.0 L	
CB20	472.03	466.94(W)	466.94(SE)	155780.40	817632.18	110+50.0, 4.0 L	
CB21	470.29	466.22(NW) 464.08(SW)	464.08(NE)	155925.64	817799.26	112+69.3, 31.0 R	SLAB TOP
CB22	471.27		467.00(SE)	155966.37	817752.51	112+69.0, 31.0 L	DEEP SUMP
CB23	470.99	466.64(NW)	466.64(SE)	155948.63	817772.87	112+69.1, 4.0 L	SLAB TOP
CB48	472.12	468.00(NW)	468.00(SE)	155616.39	817517.74	108+50.0, 0.0	
CB50	470.87	464.58(SW)	464.58(NE)	155827.71	817716.14	111+39.9, 31.4 R	
CB51	471.84	466.90(NW)	466.90(SE)	155777.91	817635.31	110+50.0, 0.0	
CB52	470.80	466.53(NW)	466.53(SE)	155945.87	817775.77	112+69.0, 0.0	

- NOTES:
1. ALL GAS VALVES TO BE ADJUSTED BY LIBERTY UTILITIES
 2. ALL WATER VALVES TO BE ADJUSTED BY CONTRACTOR
 3. ALL TELEPHONE MANHOLES TO BE ADJUSTED BY CONTRACTOR
 4. ALL SEWER MANHOLES TO BE ADJUSTED BY CONTRACTOR



McFarland Johnson
 53 REGIONAL DRIVE
 CONCORD, NEW HAMPSHIRE 03301

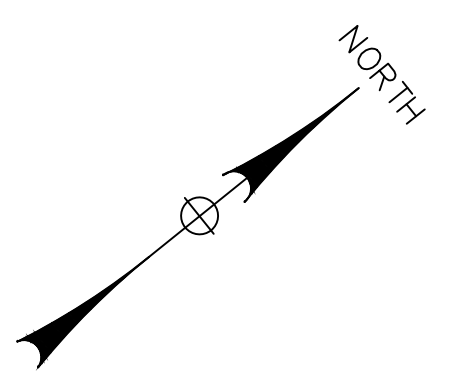
CITY OF KEENE
KEENE, NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION
UTILITY PLAN
(SHEET 4 OF 6)

REV	DATE	DESCRIPTION	BY

SCALE: 1"=20'
 DESIGN: BEP
 DRAWN: MJF
 PROJECT: 18022.01
 CHECKED: EWM
 DATE: SEPTEMBER 2021

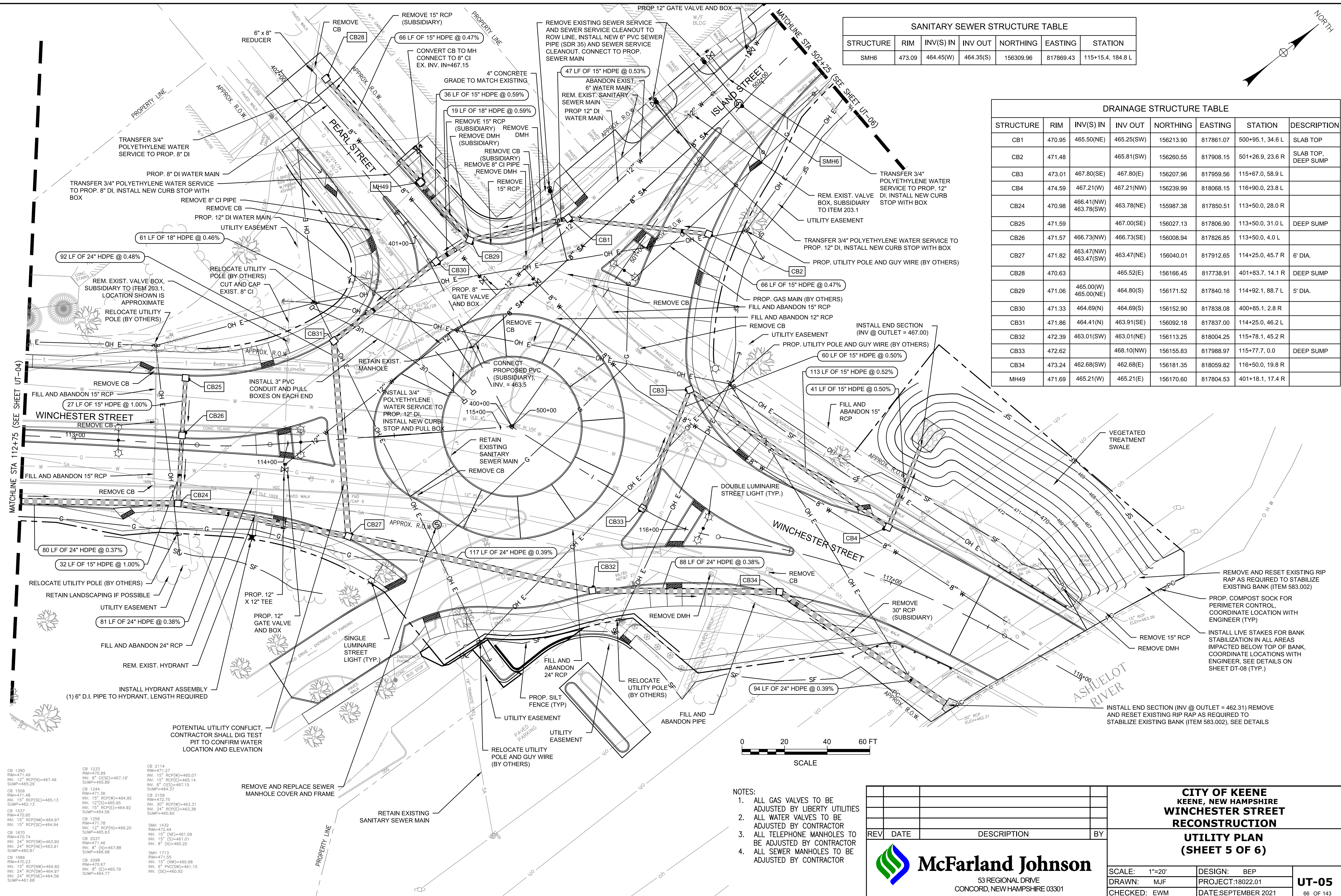
UT-04
 65 OF 143

M:\18022.01 KEENE\DRAWINGS\SHEET FILES\18022.01-UTL.DWG

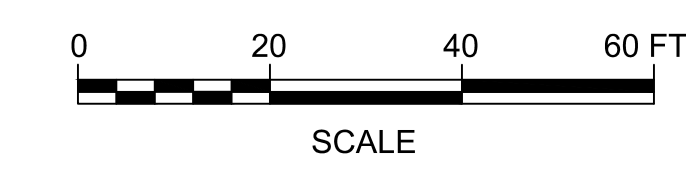


SANITARY SEWER STRUCTURE TABLE						
STRUCTURE	RIM	INV(S) IN	INV OUT	NORTHING	EASTING	STATION
SMH6	473.09	464.45(W)	464.35(S)	156309.96	817869.43	115+15.4, 184.8 L

DRAINAGE STRUCTURE TABLE							
STRUCTURE	RIM	INV(S) IN	INV OUT	NORTHING	EASTING	STATION	DESCRIPTION
CB1	470.95	465.50(N)	465.25(S)	156213.90	817861.07	500+95.1, 34.6 L	SLAB TOP
CB2	471.48		465.81(S)	156260.55	817908.15	501+26.9, 23.6 R	SLAB TOP, DEEP SUMP
CB3	473.01	467.80(SE)	467.80(E)	156207.96	817959.56	115+67.0, 58.9 L	
CB4	474.59	467.21(W)	467.21(N)	156239.99	818068.15	116+90.0, 23.8 L	
CB24	470.98	466.41(N)	463.78(S)	155987.38	817850.51	113+50.0, 28.0 R	
CB25	471.59		467.00(SE)	156027.13	817806.90	113+50.0, 31.0 L	DEEP SUMP
CB26	471.57	466.73(N)	466.73(S)	156008.94	817826.85	113+50.0, 4.0 L	
CB27	471.82	463.47(N)	463.47(S)	156040.01	817912.65	114+25.0, 45.7 R	6' DIA.
CB28	470.63		465.52(E)	156166.45	817738.91	401+83.7, 14.1 R	DEEP SUMP
CB29	471.06	465.00(W)	464.80(S)	156171.52	817840.16	114+92.1, 88.7 L	5' DIA.
CB30	471.33	464.69(N)	464.69(S)	156152.90	817838.08	400+85.1, 2.8 R	
CB31	471.86	464.41(N)	463.91(S)	156092.18	817837.00	114+25.0, 46.2 L	
CB32	472.39	463.01(S)	463.01(N)	156113.25	818004.25	115+77.7, 45.2 R	
CB33	472.62		468.10(N)	156155.83	817988.97	115+77.7, 0.0	DEEP SUMP
CB34	473.24	462.68(S)	462.68(E)	156181.35	818059.82	116+50.0, 19.8 R	
MH49	471.69	465.21(W)	465.21(E)	156170.60	817804.53	401+18.1, 17.4 R	



CB 1390 RIM=471.49 INV. 12" RCP(N)=467.49 SUMP=465.29	CB 1233 RIM=470.99 INV. 8" RCP(S)=467.19 SUMP=465.89	CB 2114 RIM=471.27 INV. 15" RCP(W)=465.07 INV. 15" RCP(S)=465.14 INV. 8" RCP(S)=467.15 SUMP=464.37
CB 1506 RIM=471.48 INV. 15" RCP(SE)=465.13 SUMP=462.13	CB 1244 RIM=471.36 INV. 15" RCP(W)=464.95 INV. 12"(S)=465.95 INV. 15" RCP(S)=464.92 SUMP=464.56	CB 2159 RIM=472.75 INV. 30" RCP(W)=463.31 INV. 24" RCP(E)=463.38 SUMP=460.60
CB 1537 RIM=470.95 INV. 15" RCP(N)=464.97 INV. 15" RCP(SE)=464.94	CB 1258 RIM=471.78 INV. 12" RCP(N)=466.20 SUMP=465.63	SMH 1432 RIM=472.44 INV. 15" (NE)=461.09 INV. 15" (S)=461.01 INV. 8" (N)=465.20
CB 1670 RIM=470.74 INV. 24" RCP(SW)=463.90 INV. 24" RCP(NE)=463.91 SUMP=460.81	CB 2037 RIM=471.46 INV. 8" (N)=467.88 SUMP=466.66	SMH 1713 RIM=471.55 INV. 15" (NW)=460.98 INV. 6" RCP(SW)=461.15 INV. (SE)=460.92
CB 1686 RIM=470.23 INV. 15" RCP(NW)=464.60 INV. 24" RCP(SW)=464.97 INV. 24" RCP(NE)=464.98 SUMP=461.60	CB 2098 RIM=470.67 INV. 8" (E)=465.79 SUMP=464.77	



- NOTES:
1. ALL GAS VALVES TO BE ADJUSTED BY LIBERTY UTILITIES
 2. ALL WATER VALVES TO BE ADJUSTED BY CONTRACTOR
 3. ALL TELEPHONE MANHOLES TO BE ADJUSTED BY CONTRACTOR
 4. ALL SEWER MANHOLES TO BE ADJUSTED BY CONTRACTOR

McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

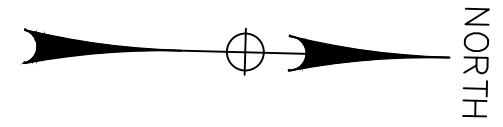
**CITY OF KEENE
KEENE, NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION**

**UTILITY PLAN
(SHEET 5 OF 6)**

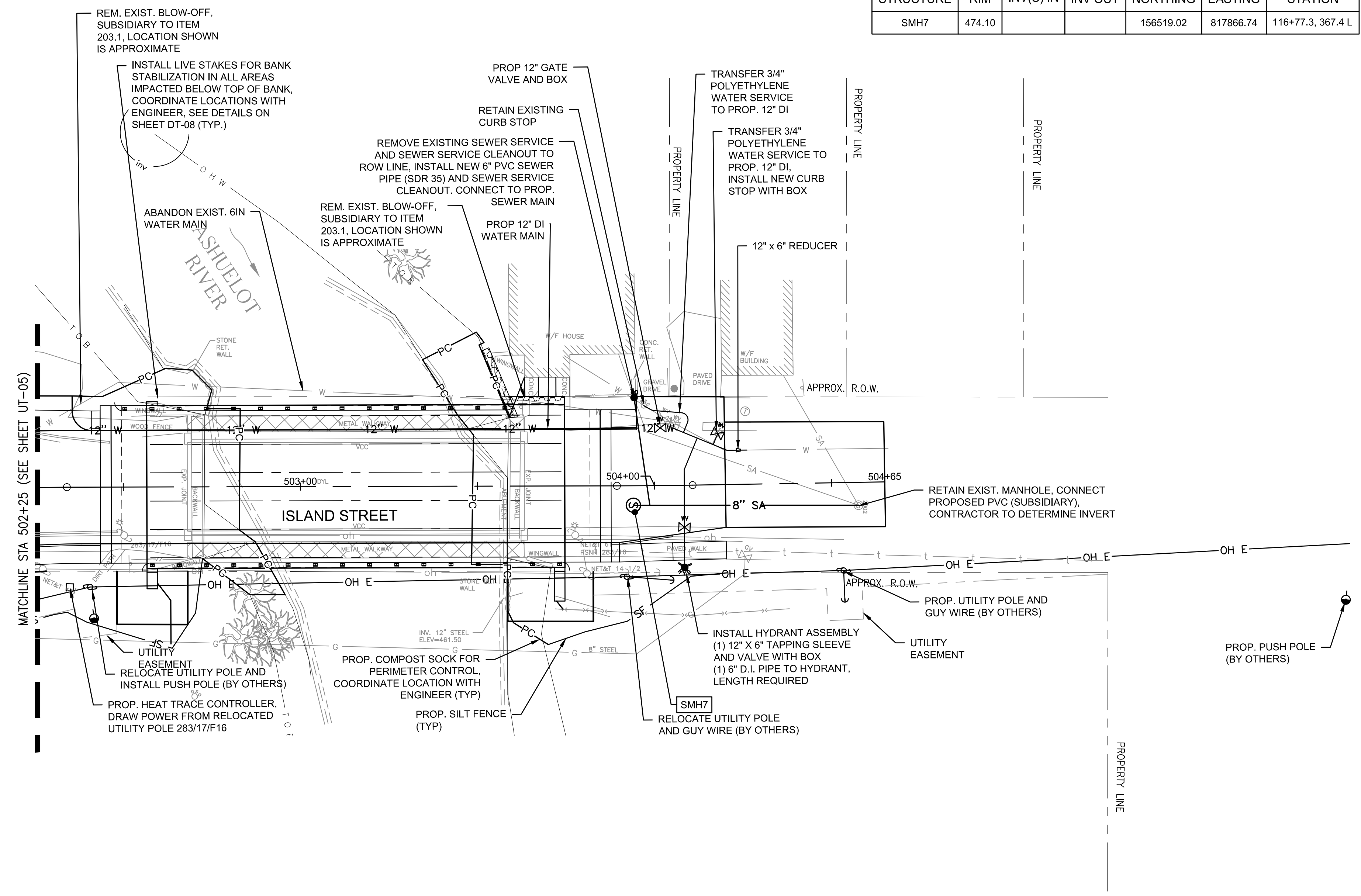
REV	DATE	DESCRIPTION	BY

SCALE: 1"=20'	DESIGN: BEP	UT-05 66 OF 143
DRAWN: MJF	PROJECT:18022.01	
CHECKED: EWM	DATE:SEPTEMBER 2021	

M:\18022.01 KEENE DRAWINGS\SHEET FILES\18022.01-UT11.DWG



SANITARY SEWER STRUCTURE TABLE						
STRUCTURE	RIM	INV(S) IN	INV OUT	NORTHING	EASTING	STATION
SMH7	474.10			156519.02	817866.74	116+77.3, 367.4 L

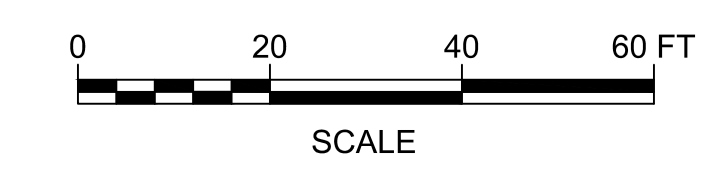
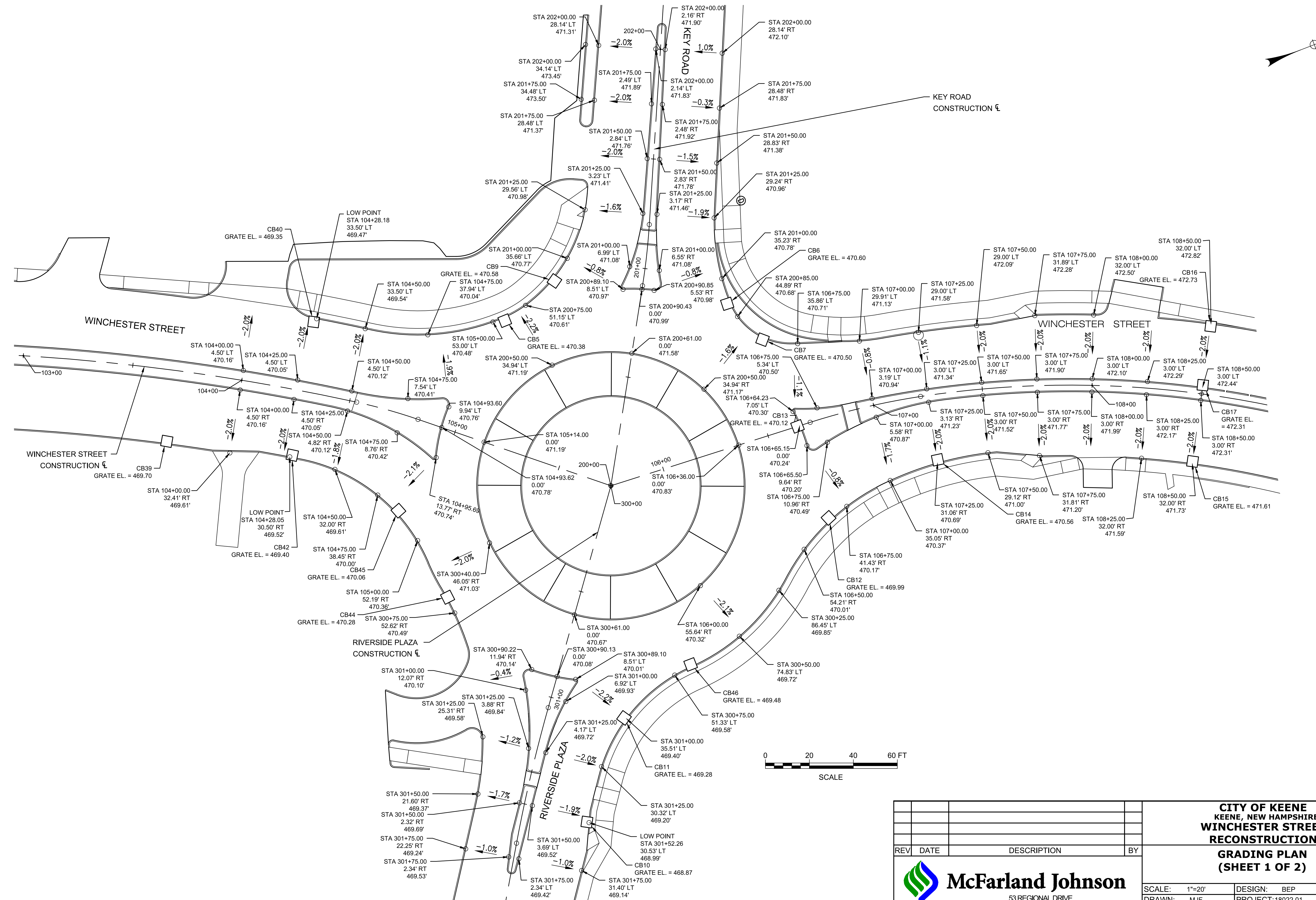
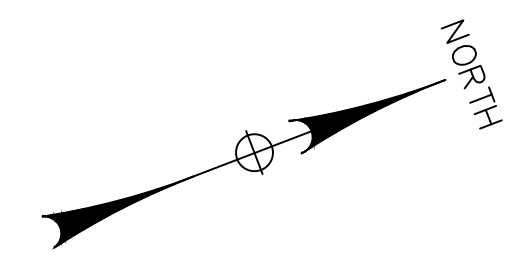


- NOTES:
1. ALL GAS VALVES TO BE ADJUSTED BY LIBERTY UTILITIES
 2. ALL WATER VALVES TO BE ADJUSTED BY CONTRACTOR
 3. ALL TELEPHONE MANHOLES TO BE ADJUSTED BY CONTRACTOR
 4. ALL SEWER MANHOLES TO BE ADJUSTED BY CONTRACTOR



<p align="center">CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION</p>				
				<p align="center">UTILITY PLAN (SHEET 6 OF 6)</p>
REV	DATE	DESCRIPTION	BY	<p align="center">McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301</p>
<p>SCALE: 1"=20' DESIGN: BEP</p>				
<p>DRAWN: MJF PROJECT: 18022.01 UT-06</p>				
<p>CHECKED: EWM DATE: SEPTEMBER 2021 67 OF 143</p>				

M:\18022.01 KEENE WINCHESTER FINAL DRAWINGS\SHSHEET FILES\18022.01-UTIL.DWG



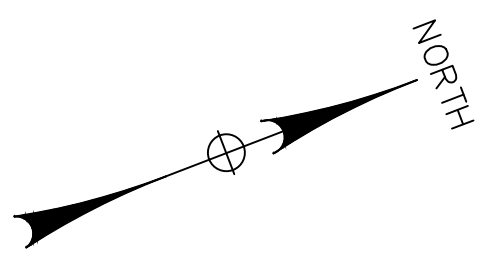
McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

**CITY OF KEENE
KEENE, NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION
GRADING PLAN
(SHEET 1 OF 2)**

REV	DATE	DESCRIPTION	BY

SCALE: 1"=20'	DESIGN: BEP	GR-01 68 OF 143
DRAWN: MJF	PROJECT: 18022.01	
CHECKED: EWM	DATE: SEPTEMBER 2021	

M:\18022.01 KEENE WINCHESTER FINAL DRAWINGS\18022.01-GRAD.DWG

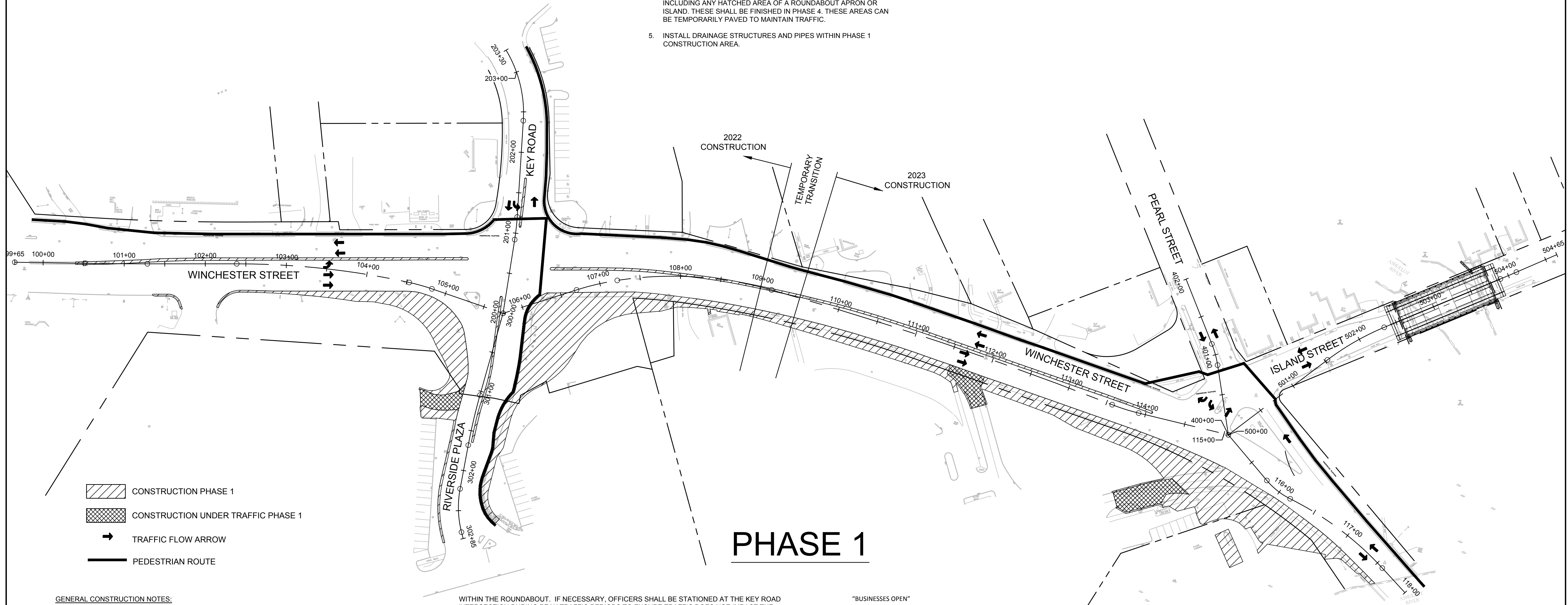


PHASE 1 CONSTRUCTION:

1. REMOVE AND TEMPORARILY PAVE THE EXISTING CENTER ISLAND WITHIN THAT SEASON'S CONSTRUCTION LIMITS.
2. COMPLETE WATER AND SEWER UTILITY IMPROVEMENTS ALONG WINCHESTER STREET.
3. REMOVE EXISTING CURBING AND WIDEN WINCHESTER STREET AROUND PROPOSED ROUNDABOUTS. INSTALL PROPOSED CURBING ALONG EASTERN SIDE OF WINCHESTER STREET AS WELL AS THE SIDEWALK ADJACENT TO IT.
4. PERMANENTLY GRADE AND BASE PAVE HATCHED AREAS, NOT INCLUDING ANY HATCHED AREA OF A ROUNDABOUT APRON OR ISLAND. THESE SHALL BE FINISHED IN PHASE 4. THESE AREAS CAN BE TEMPORARILY PAVED TO MAINTAIN TRAFFIC.
5. INSTALL DRAINAGE STRUCTURES AND PIPES WITHIN PHASE 1 CONSTRUCTION AREA.

PHASE 1 MAINTENANCE OF TRAFFIC:

1. RETAIN EXISTING LANES ALONG WINCHESTER STREET, KEY ROAD, PEARL STREET, ISLAND STREET, AND THE RIVERSIDE PLAZA DRIVEWAY.
2. WINCHESTER STREET MAY BE REDUCED TO ONE LANE IN EACH DIRECTION BETWEEN 9:00 AM AND 3:00 PM.
3. PEDESTRIANS TO USE EXISTING SIDEWALKS ON WESTSIDE OF WINCHESTER STREET.



- CONSTRUCTION PHASE 1
- CONSTRUCTION UNDER TRAFFIC PHASE 1
- TRAFFIC FLOW ARROW
- PEDESTRIAN ROUTE

PHASE 1

GENERAL CONSTRUCTION NOTES:

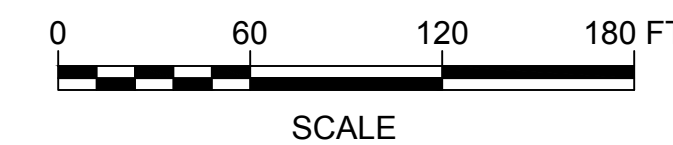
1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONSTRUCT ALL AREAS OF THE PROJECT AS QUICKLY, EFFICIENTLY AND SAFELY AS POSSIBLE WHILE MINIMIZING DISRUPTION TO THE TRAVELING PUBLIC.
2. ALL TEMPORARY TRAFFIC LANES SHALL BE A MINIMUM OF 11 FEET IN WIDTH.
3. ACCESS TO EXISTING DRIVEWAYS SHALL BE MAINTAINED AT ALL TIMES. SPECIFIC ACCESS DETAILS SHALL BE DETERMINED BY CONTRACTOR WITH PRIOR APPROVAL OF THE ENGINEER.
4. PEDESTRIAN ACCESS SHALL BE MAINTAINED AT ALL TIMES. APPROPRIATE ACCOMMODATION AND SIGNS MUST BE PROVIDED WHILE SIDEWALKS ARE REPLACED OR UNDER CONSTRUCTION.
5. THE CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION ACTIVITIES IN SUCH A MANNER AS TO CAUSE A MINIMUM OF INCONVENIENCE TO THE PUBLIC, AND MINIMIZE INTERFERENCE WITH NORMAL OPERATIONS OF THE ADJACENT PROPERTIES.
6. PEDESTRIANS ALONG ISLAND STREET WILL BE DIRECTED TO THE CHESHIRE RAIL TRAIL AND THE ASHUELOT BRANCH RAILBED TRAIL TO ACCESS WINCHESTER STREET.
7. PLACE ALL TEMPORARY PAVEMENT MARKINGS, SYMBOLS AND WORDS IN ACCORDANCE WITH NHDOT STANDARD PLANS STANDARD NO. PM-1 THROUGH PM-14.
8. EXISTING ISLANDS MAY BE REMOVED AND PAVED TEMPORARILY.
9. ONE LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED ON WINCHESTER STREET, KEY ROAD, AND THE RIVERSIDE PLAZA DRIVEWAY THROUGHOUT CONSTRUCTION.
10. ONE LANE OF ALTERNATING TRAFFIC IS ALLOWED ON PEARL STREET BETWEEN 9:00 AM AND 3:00 PM.
11. THE CONTRACTOR SHALL ENSURE TRAFFIC QUEUING ALONG WINCHESTER STREET DOES NOT BACK-UP INTO THE NH 101/WINCHESTER STREET ROUNDABOUT THEREBY IMPEDING TRAFFIC FLOW

WITHIN THE ROUNDABOUT. IF NECESSARY, OFFICERS SHALL BE STATIONED AT THE KEY ROAD INTERSECTION DURING PEAK TRAFFIC PERIODS TO ENSURE TRAFFIC DOES NOT IMPACT THE ROUNDABOUT.

12. ACCESS TO THE KEENE STATE COLLEGE PARKING LOT SHALL BE MAINTAINED WHILE SCHOOL IS IN SESSION. DURING SUMMER RECESS, ACCESS TO THIS PARKING LOT MAY BE BLOCKED WITH PRIOR COORDINATION AND APPROVAL OF THE COLLEGE
13. ALL ASPECTS OF TRAFFIC CONTROL INCLUDING, BUT NOT LIMITED TO, SIGNAGE, CONCRETE BARRIERS, DRUMS, CONES, AND BARRICADES TO BE PAID UNDER ITEM 619.1 - MAINTENANCE OF TRAFFIC.
14. PLACEMENT AND MESSAGING OF PORTABLE CHANGEABLE MESSAGE SIGNS TO BE AS DIRECTED BY THE ENGINEER AND TO BE PAID UNDER ITEM 619.253 - PORTABLE CHANGEABLE MESSAGE SIGN. OWNER RESERVES THE RIGHT TO RELOCATE AND CHANGE THE TEXT OF THESE SIGNS THROUGHOUT THE DURATION OF THE PROJECT.
15. THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN DETAILING CONSTRUCTION SEQUENCING AND THE PLACEMENT OF ALL TRAFFIC CONTROL DEVICES TO THE ENGINEER 5 DAYS PRIOR TO THE START OF CONSTRUCTION FOR REVIEW AND APPROVAL.
16. NO OPEN EXCAVATION SHALL BE ALLOWED DURING NIGHT TIME HOURS EXCEPT AS APPROVED IN WRITING BY THE ENGINEER.
17. DESIGNATED CONSTRUCTION LAYDOWN AREAS WILL BE ENCLOSED WITH SUITABLE CONSTRUCTION FENCING PRIOR TO USE. CONTRACTOR SHALL MAINTAIN DESIGNATED LAYDOWN AREAS IN A NEAT AND ORDERLY CONDITION, FREE FROM LITTER, SCRAP, DEBRIS, MUD AND EXCESS CONSTRUCTION MATERIALS. LAYDOWN AREAS WILL BE RESTORED TO PRE-EXISTING CONDITION AT THE CONCLUSION OF THE PROJECT.
18. STAGING OF EQUIPMENT AND MATERIAL WITHIN HICKEY - DESILETS PARK WILL BE ALLOWED ONLY TO THE EXTENT THAT IT IS REQUIRED FOR THE REMOVAL AND REPLACEMENT OF THE ISLAND ST. BRIDGE.
19. ALTHOUGH THE PRIMARY PEDESTRIAN ROUTE FOR PHASES 2 AND 3 IS LOCATED ON THE EASTERN SIDE OF WINCHESTER STREET, PEDESTRIAN ACCESS MUST BE MAINTAINED FOR THE BUSINESSES ON THE WESTERN SIDE OF WINCHESTER ST.
20. THE CONTRACTOR MUST PROVIDE A MINIMUM OF TWO EACH OF THE FOLLOWING SIGNS TO BE PLACED AT THE NORTHERN AND SOUTHERN LIMITS OF THE PROJECT:

"BUSINESSES OPEN"
"RIVERSIDE PLAZA AND KEY ROAD"

THE SIGNS MUST BE 48" DIAMOND-SHAPED WITH BLACK LETTERING AND BORDER ON A RETROREFLECTIVE ORANGE BACKGROUND. THEY MUST BE SECURELY ANCHORED FOR THE DURATION OF THE PROJECT. SEE 2009 MUTCD PAGE 587 FOR TYPICAL USE. PAYMENT WILL BE UNDER ITEM 619.1 - MAINTENANCE OF TRAFFIC.

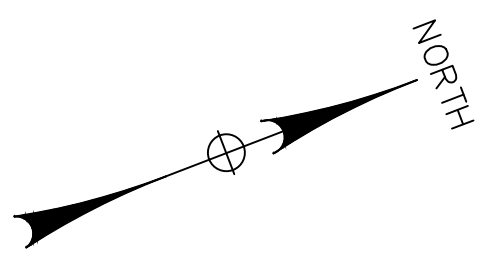


1	12/3/2021	ADJUST FOR PLANNED 2-YEAR CONSTRUCTION	
2	12/10/2021	MISSING HATCH PATTERNS RESTORED	
REV	DATE	DESCRIPTION	BY
McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301			

**CITY OF KEENE
KEENE, NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION
PHASING PLAN
(SHEET 1 OF 4)**

SCALE: 1"=60'	DESIGN: KJM	CS-01 70 OF 143
DRAWN: MJF	PROJECT: 18022.01	
CHECKED: EWM	DATE: SEPTEMBER 2021	

M:\18022.01 KEENE WINCHESTER FINAL DRAWINGS\SHEET FILES\18022.01-CSPPP.DWG

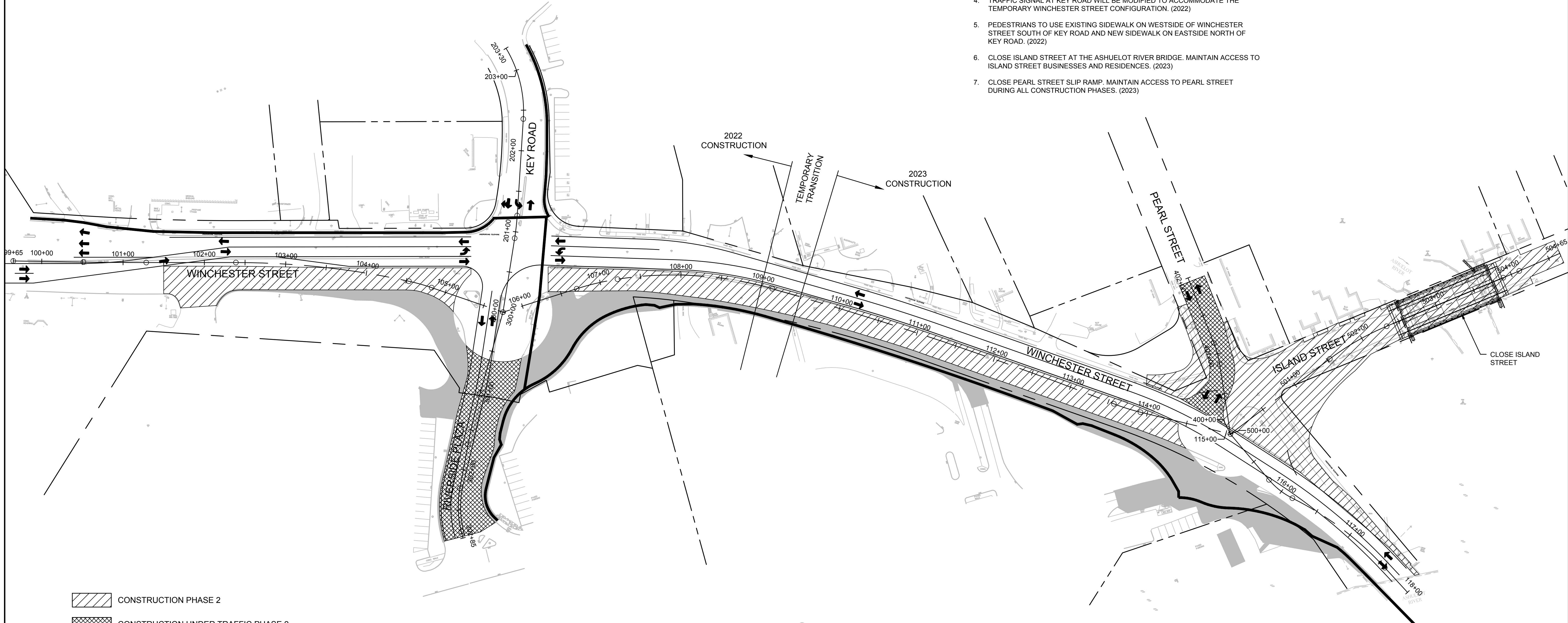







PHASE 2 CONSTRUCTION:

1. BEGIN ISLAND STREET BRIDGE DEMOLITION AND CONSTRUCTION. (2023)
2. INSTALL DRAINAGE CB'S AND PIPES ON EASTERN SIDE OF WINCHESTER STREET. CONNECT TO THOSE INSTALLED IN PHASE 1.
3. COMPLETE WATER AND SEWER UTILITY IMPROVEMENTS ALONG ISLAND AND PEARL STREETS. (2023)
4. PERMANENTLY GRADE AND PAVE EASTERN SIDE OF WINCHESTER STREET AND RIVERSIDE PLAZA DRIVEWAY.

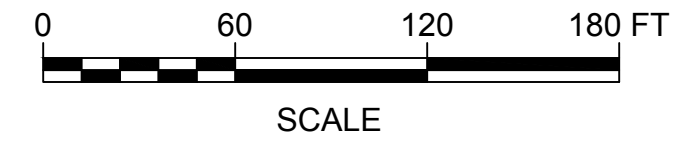
PHASE 2 MAINTENANCE OF TRAFFIC:


1. CLOSE THE EASTERN SIDE OF WINCHESTER STREET. MAINTAIN 1 LANE IN EACH DIRECTION ON THE WESTERN SIDE OF WINCHESTER STREET.
2. MAINTAIN THE INTERSECTION OF WINCHESTER STREET, KEY ROAD, AND RIVERSIDE PLAZA SO THAT LARGE DELIVERY TRUCKS WILL BE ABLE TO ACCESS BUSINESSES ON RIVERSIDE PLAZA AND KEY ROAD. (2022)
3. USE TAPERS AND MERGES TO ENSURE THE EXISTING ROUNDABOUT TO THE SOUTH AT THE INTERSECTION OF NH-10, NH-12, NH-101, AND WINCHESTER STREET CONTINUES TO OPERATE REGULARLY. (2022)
4. TRAFFIC SIGNAL AT KEY ROAD WILL BE MODIFIED TO ACCOMMODATE THE TEMPORARY WINCHESTER STREET CONFIGURATION. (2022)
5. PEDESTRIANS TO USE EXISTING SIDEWALK ON WESTSIDE OF WINCHESTER STREET SOUTH OF KEY ROAD AND NEW SIDEWALK ON EASTSIDE NORTH OF KEY ROAD. (2022)
6. CLOSE ISLAND STREET AT THE ASHUELOT RIVER BRIDGE. MAINTAIN ACCESS TO ISLAND STREET BUSINESSES AND RESIDENCES. (2023)
7. CLOSE PEARL STREET SLIP RAMP. MAINTAIN ACCESS TO PEARL STREET DURING ALL CONSTRUCTION PHASES. (2023)



 CONSTRUCTION PHASE 2
 CONSTRUCTION UNDER TRAFFIC PHASE 2
 CONSTRUCTION COMPLETED IN PREVIOUS PHASE
 TRAFFIC FLOW ARROW
 PEDESTRIAN ROUTE

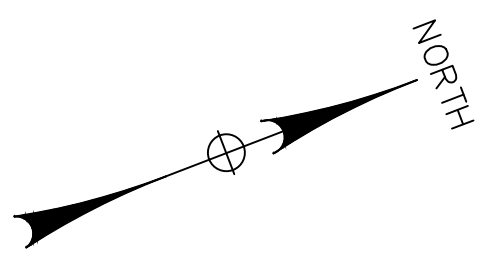
PHASE 2



1	12/3/2021	ADJUST FOR PLANNED 2-YEAR CONSTRUCTION	
2	12/10/2021	MISSING HATCH PATTERNS RESTORED	
REV	DATE	DESCRIPTION	BY
 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301			

CITY OF KEENE
 KEENE, NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION
PHASING PLAN
(SHEET 2 OF 4)

SCALE: 1"=60'	DESIGN: KJM	CS-02 71 OF 143
DRAWN: MJF	PROJECT: 18022.01	
CHECKED: EWM	DATE: SEPTEMBER 2021	

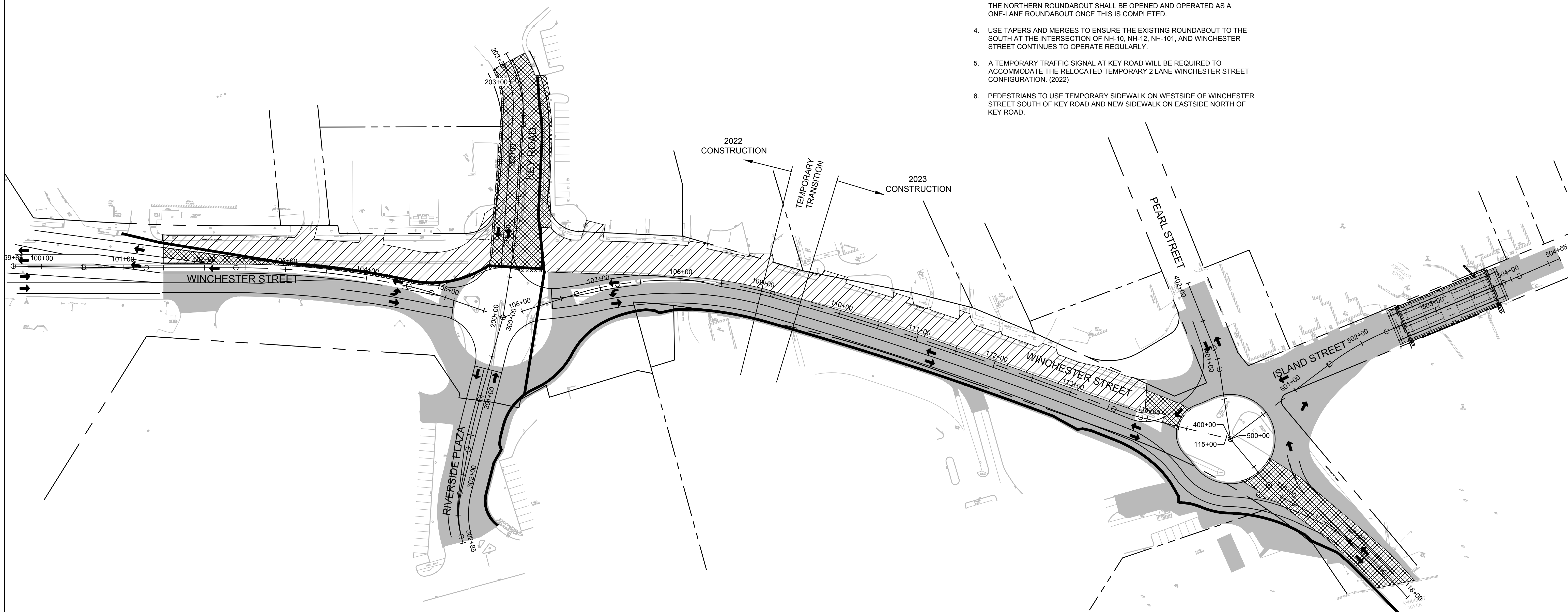


PHASE 3 CONSTRUCTION:

1. COMPLETE DRAINAGE INSTALLATION ON WESTERN SIDE OF WINCHESTER STREET.
2. PERMANENTLY GRADE AND PAVE WESTERN SIDE OF WINCHESTER STREET AND KEY ROAD.
3. COMPLETE ISLAND STREET BRIDGE CONSTRUCTION IF NECESSARY. (2023)

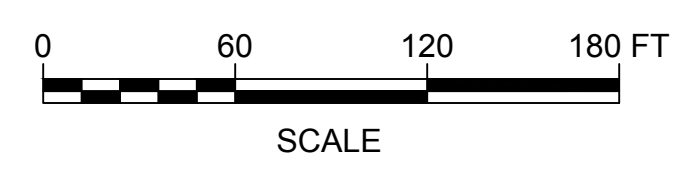
PHASE 3 MAINTENANCE OF TRAFFIC:

1. PHASE 3A SHALL CONTINUE TO HAVE A TRAFFIC SIGNAL AT THE INTERSECTION OF WINCHESTER STREET, KEY ROAD, AND RIVERSIDE PLAZA. ONCE THE AREAS OF CONSTRUCTION UNDER TRAFFIC ARE COMPLETED, THIS ROUNDABOUT SHALL BE OPENED AND OPERATED AS A ONE-LANE ROUNDABOUT. THIS SHALL BE PHASE 3B. (2022)
2. PHASE 3 SHALL MAINTAIN 1 LANE IN EACH DIRECTION ON THE EASTERN SIDE OF WINCHESTER STREET.
3. CONSTRUCTION UNDER TRAFFIC ON WINCHESTER STREET AND KEY ROAD SHALL MAINTAIN A MINIMUM OF ONE LANE IN EACH DIRECTION AT ALL TIMES. THE NORTHERN ROUNDABOUT SHALL BE OPENED AND OPERATED AS A ONE-LANE ROUNDABOUT ONCE THIS IS COMPLETED.
4. USE TAPERS AND MERGES TO ENSURE THE EXISTING ROUNDABOUT TO THE SOUTH AT THE INTERSECTION OF NH-10, NH-12, NH-101, AND WINCHESTER STREET CONTINUES TO OPERATE REGULARLY.
5. A TEMPORARY TRAFFIC SIGNAL AT KEY ROAD WILL BE REQUIRED TO ACCOMMODATE THE RELOCATED TEMPORARY 2 LANE WINCHESTER STREET CONFIGURATION. (2022)
6. PEDESTRIANS TO USE TEMPORARY SIDEWALK ON WESTSIDE OF WINCHESTER STREET SOUTH OF KEY ROAD AND NEW SIDEWALK ON EASTSIDE NORTH OF KEY ROAD.



- CONSTRUCTION PHASE 3
- CONSTRUCTION UNDER TRAFFIC PHASE 3
- CONSTRUCTION COMPLETED IN PREVIOUS PHASE(S)
- TRAFFIC FLOW ARROW
- PEDESTRIAN ROUTE

PHASE 3



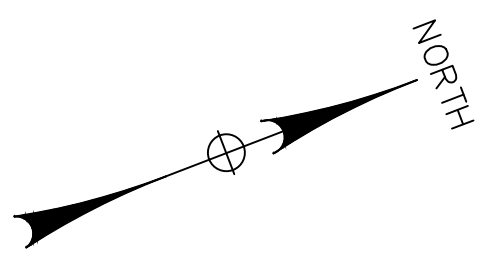
▲	1	12/3/2021	ADJUST FOR PLANNED 2-YEAR CONSTRUCTION	
▲	2	12/10/2021	MISSING HATCH PATTERNS RESTORED	
REV	DATE	DESCRIPTION	BY	

McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

**CITY OF KEENE
KEENE, NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION**

**PHASING PLAN
(SHEET 3 OF 4)**

SCALE: 1"=60'	DESIGN: BEP	CS-03 72 OF 143
DRAWN: MJF	PROJECT: 18022.01	
CHECKED: EWM	DATE: SEPTEMBER 2021	

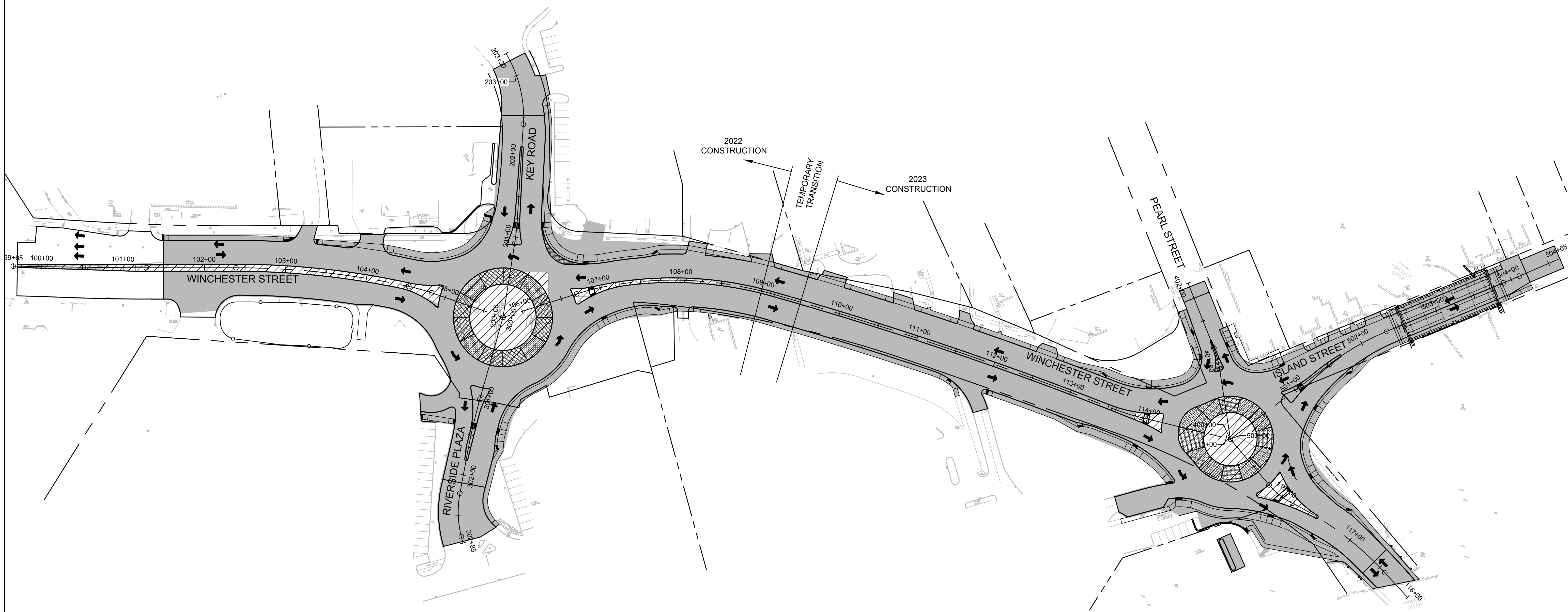


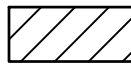


PHASE 4 CONSTRUCTION:

1. COMPLETE THE ROUNDABOUT APRONS AND ISLANDS.
2. COMPLETE ALL ISLANDS.
3. COMPLETE ANY CURBING THAT HAS NOT YET BEEN COMPLETED.
4. INSTALL WEARING COURSE PAVEMENT.
5. INSTALL PAVEMENT STRIPING.

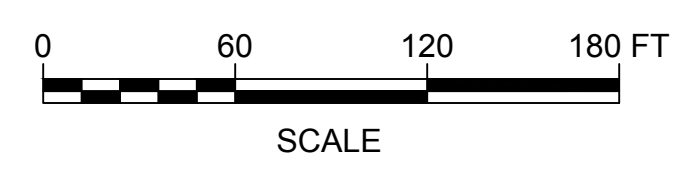
PHASE 4 MAINTENANCE OF TRAFFIC:


1. UTILIZE BOTH ROUNDABOUTS AS SINGLE LANE ROUNDABOUTS UNTIL TRUCK APRONS ARE COMPLETED. ONCE THESE ARE COMPLETED TWO LANES MAY BE OPENED AROUND EACH ROUNDABOUT AS WELL AS ON EACH SIDE OF WINCHESTER STREET.
2. USE TAPERS AND MERGES TO ENSURE THE EXISTING ROUNDABOUT TO THE SOUTH AT THE INTERSECTION OF NH-10, NH-12, NH-101, AND WINCHESTER STREET CONTINUES TO OPERATE REGULARLY.
3. PEDESTRIANS TO USE NEW SIDEWALKS ON WINCHESTER STREET.



 CONSTRUCTION PHASE 4
 CONSTRUCTION COMPLETED IN PREVIOUS PHASE(S)
 TRAFFIC FLOW ARROW

PHASE 4

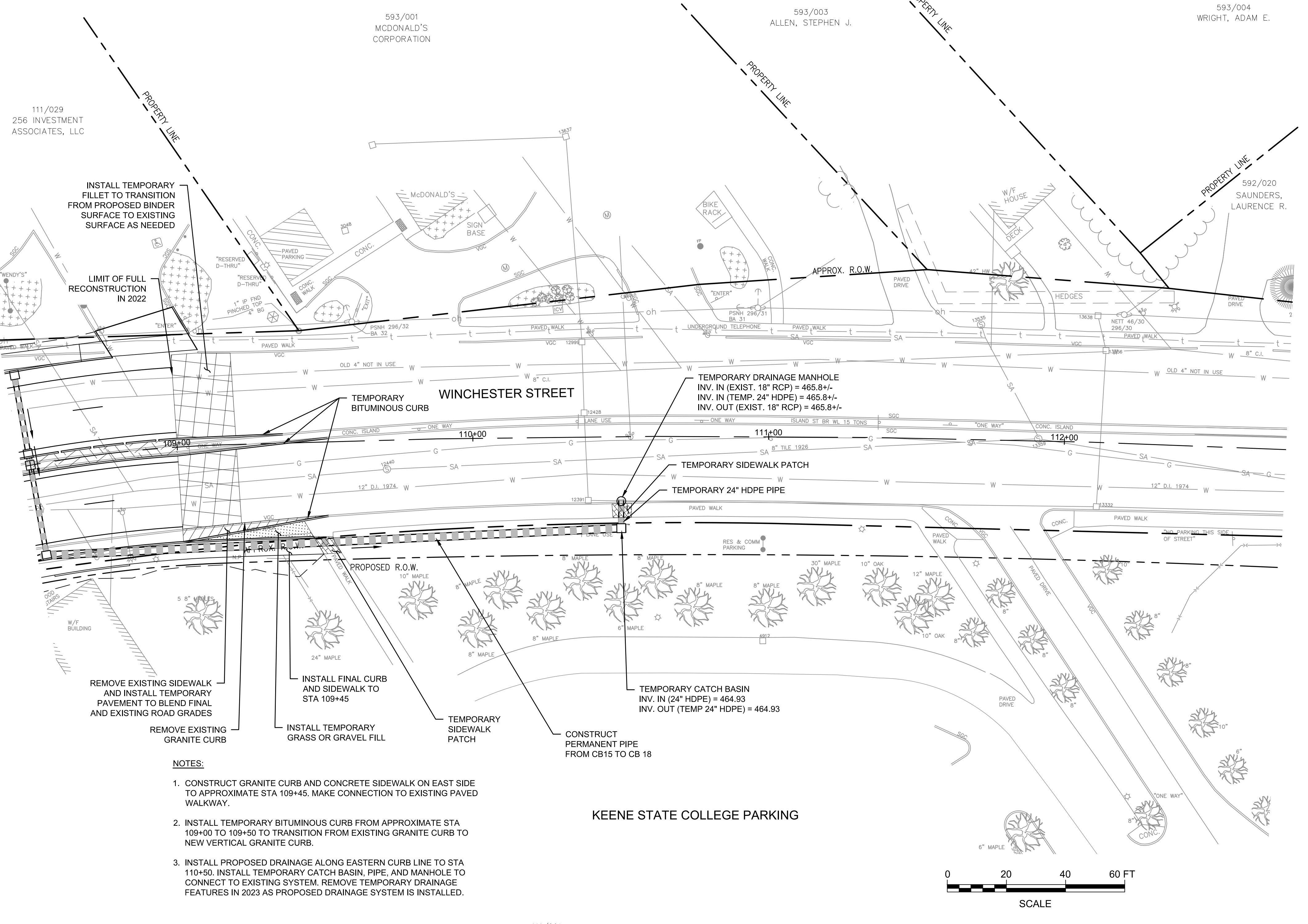
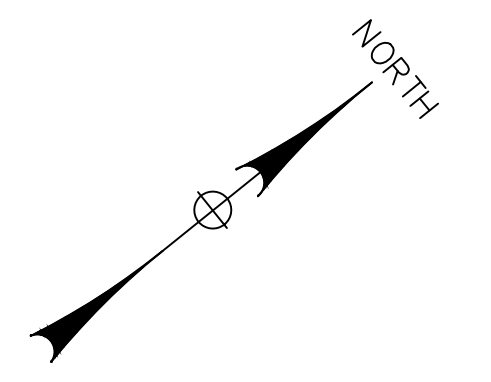


1	12/3/2021	ADJUST FOR PLANNED 2-YEAR CONSTRUCTION	
2	12/10/2021	MISSING HATCH PATTERNS RESTORED	
REV	DATE	DESCRIPTION	BY
 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301			

**CITY OF KEENE
KEENE, NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION**

**PHASING PLAN
(SHEET 4 OF 4)**

SCALE: 1"=60'	DESIGN: BEP	CS-04 73 OF 143
DRAWN: MJF	PROJECT: 18022.01	
CHECKED: EWM	DATE: SEPTEMBER 2021	



INSTALL TEMPORARY FILLET TO TRANSITION FROM PROPOSED BINDER SURFACE TO EXISTING SURFACE AS NEEDED

LIMIT OF FULL RECONSTRUCTION IN 2022

TEMPORARY BITUMINOUS CURB

TEMPORARY DRAINAGE MANHOLE
 INV. IN (EXIST. 18" RCP) = 465.8+/-
 INV. IN (TEMP. 24" HDPE) = 465.8+/-
 INV. OUT (EXIST. 18" RCP) = 465.8+/-

TEMPORARY SIDEWALK PATCH

TEMPORARY 24" HDPE PIPE

INSTALL FINAL CURB AND SIDEWALK TO STA 109+45

INSTALL TEMPORARY GRASS OR GRAVEL FILL

TEMPORARY SIDEWALK PATCH

CONSTRUCT PERMANENT PIPE FROM CB15 TO CB 18

TEMPORARY CATCH BASIN
 INV. IN (24" HDPE) = 464.93
 INV. OUT (TEMP 24" HDPE) = 464.93

REMOVE EXISTING SIDEWALK AND INSTALL TEMPORARY PAVEMENT TO BLEND FINAL AND EXISTING ROAD GRADES

REMOVE EXISTING GRANITE CURB

NOTES:

1. CONSTRUCT GRANITE CURB AND CONCRETE SIDEWALK ON EAST SIDE TO APPROXIMATE STA 109+45. MAKE CONNECTION TO EXISTING PAVED WALKWAY.
2. INSTALL TEMPORARY BITUMINOUS CURB FROM APPROXIMATE STA 109+00 TO 109+50 TO TRANSITION FROM EXISTING GRANITE CURB TO NEW VERTICAL GRANITE CURB.
3. INSTALL PROPOSED DRAINAGE ALONG EASTERN CURB LINE TO STA 110+50. INSTALL TEMPORARY CATCH BASIN, PIPE, AND MANHOLE TO CONNECT TO EXISTING SYSTEM. REMOVE TEMPORARY DRAINAGE FEATURES IN 2023 AS PROPOSED DRAINAGE SYSTEM IS INSTALLED.

KEENE STATE COLLEGE PARKING



111/001
 UNIVERSITY SYSTEM OF
 NEW HAMPSHIRE

REV	DATE	DESCRIPTION	BY

McFarland Johnson
 53 REGIONAL DRIVE
 CONCORD, NEW HAMPSHIRE 03301

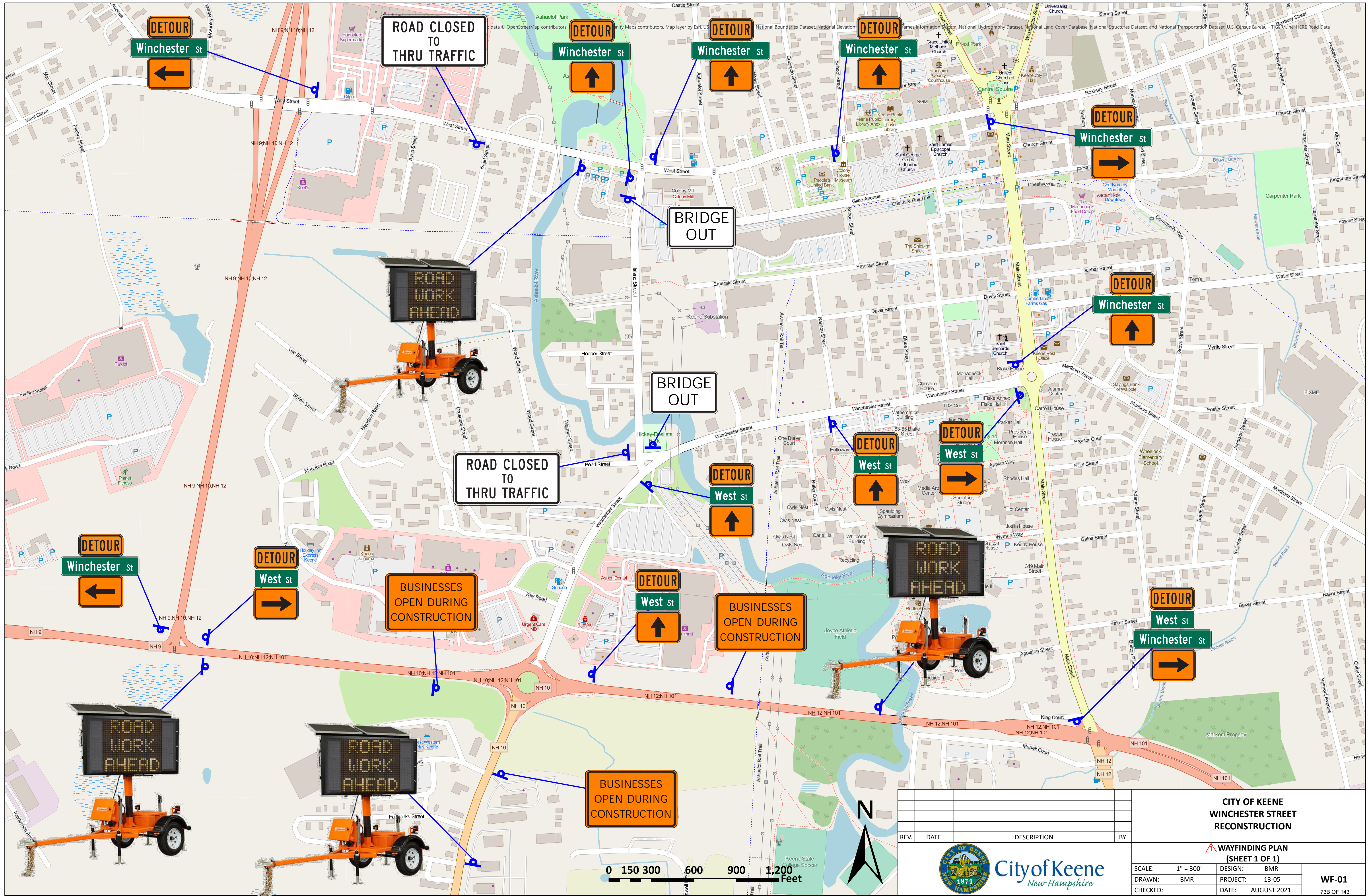
**CITY OF KEENE
 KEENE, NEW HAMPSHIRE
 WINCHESTER STREET
 RECONSTRUCTION**

**TEMPORARY TRANSITION
 PLAN (SHEET 4A OF 4)**

SCALE: 1"=20'	DESIGN: BEP	CS-04A
DRAWN: BEP	PROJECT: 18022.01	
CHECKED: EWM	DATE: SEPTEMBER 2021	

73A OF 143

M:\18022.01 KEENE WINCHESTER FINALDRAWINGS\SHEET FILES\18022.01-CSPP-4A.DWG



ROAD CLOSED TO THRU TRAFFIC

BRIDGE OUT

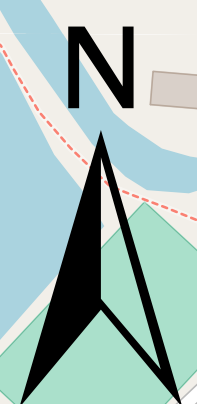
ROAD CLOSED TO THRU TRAFFIC

BRIDGE OUT


BUSINESSES OPEN DURING CONSTRUCTION

BUSINESSES OPEN DURING CONSTRUCTION

BUSINESSES OPEN DURING CONSTRUCTION



CITY OF KEENE WINCHESTER STREET RECONSTRUCTION			
WAYFINDING PLAN (SHEET 1 OF 1)			
REV.	DATE	DESCRIPTION	BY



City of Keene
New Hampshire

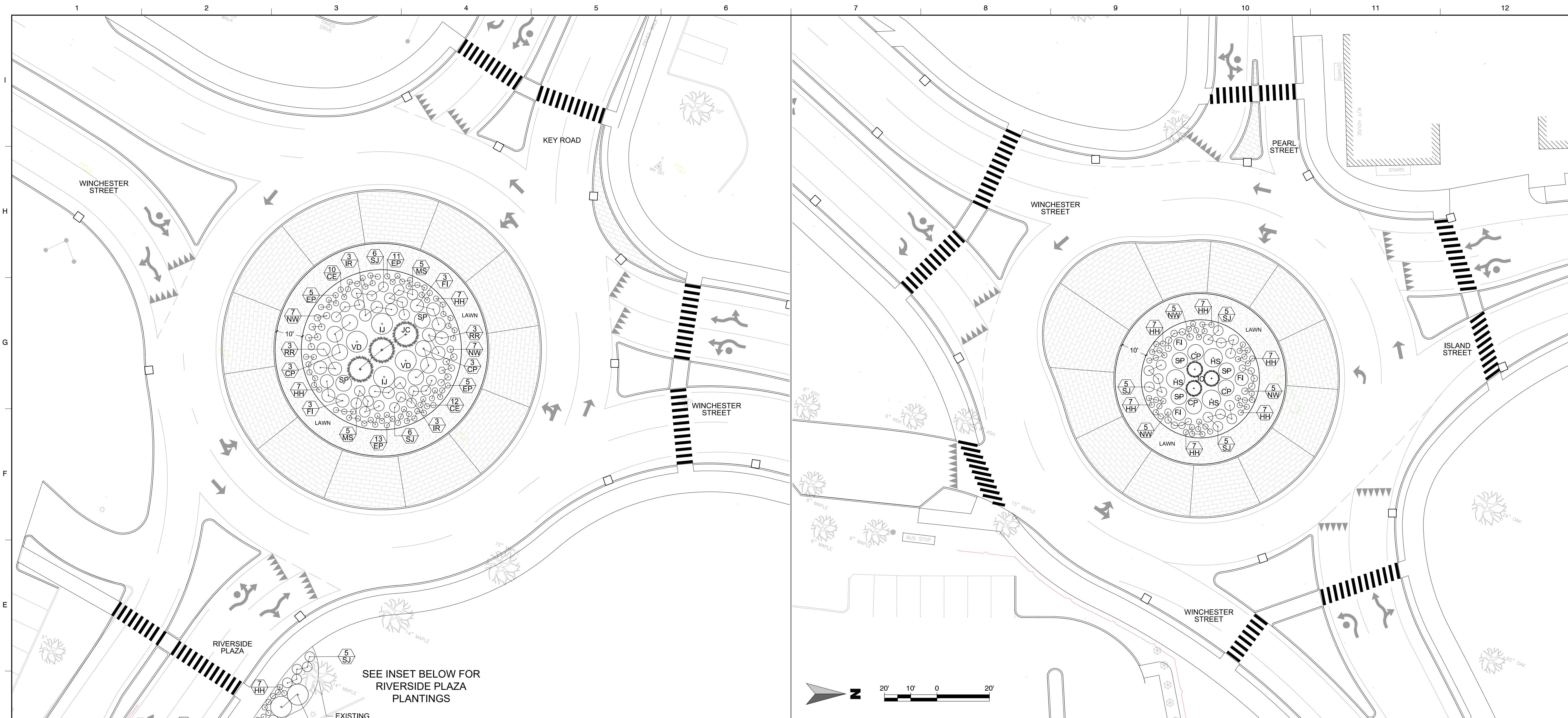
SCALE: 1" = 300'	DESIGN: BMR	WF-01 73B OF 143
DRAWN: BMR	PROJECT: 13-05	
CHECKED:	DATE: AUGUST 2021	

Prepared for:



**City of Keene
New Hampshire**

**Winchester Street
Reconstruction**



KEY ROAD ROUNDABOUT

PEARL & ISLAND STREET ROUNDABOUT

PLANT SCHEDULE: RIVERSIDE PLAZA PLANTINGS				
SYMBOL	QTY.	BOTANICAL NAME	COMMON NAME	SIZE/CONT.
SHRUBS				
CP	3	CORNUS ALBA 'PRAIRIE FIRE'	PRAIRIE FIRE DOGWOOD	#5 CONT.
JC	1	JUNIPERUS CHINENSIS 'BLUE POINT'	BLUE POINT JUNIPER	5-6' HT.
RR	3	ROSA RUGOSA	PINK RUGOSA ROSE	#5 CONT.
SJ	5	SPYRINAEA JAPONICA 'GOLDMOUND'	GOLD MOUND SPIREA	#5 CONT.
SP	3	SYRINAEA PATULA 'MISS KIM'	MISS KIM LILAC	#7 CONT.
VD	2	VIBURNUM DENTATUM 'SYNNESTEVDT'	CHICAGO LUSTRE VIBURNUM	#10 CONT.
PERENNIALS				
EP	7	ECHINACEA PURPUREA	PURPLE CONEFLOWER	#2 CONT.
HH	10	HEMEROCALLIS X. 'HAPPY RETURNS'	HAPPY RETURNS YELLOW DAYLILY	#2 CONT.
MS	8	MISCANTHUS SINENSIS 'MORNING LIGHT'	MAIDEN GRASS	#3 CONT.
NW	11	NEPETA X FAASSENII 'WALKER'S LOW'	WALKER'S LOW CATMINT	#3 CONT.

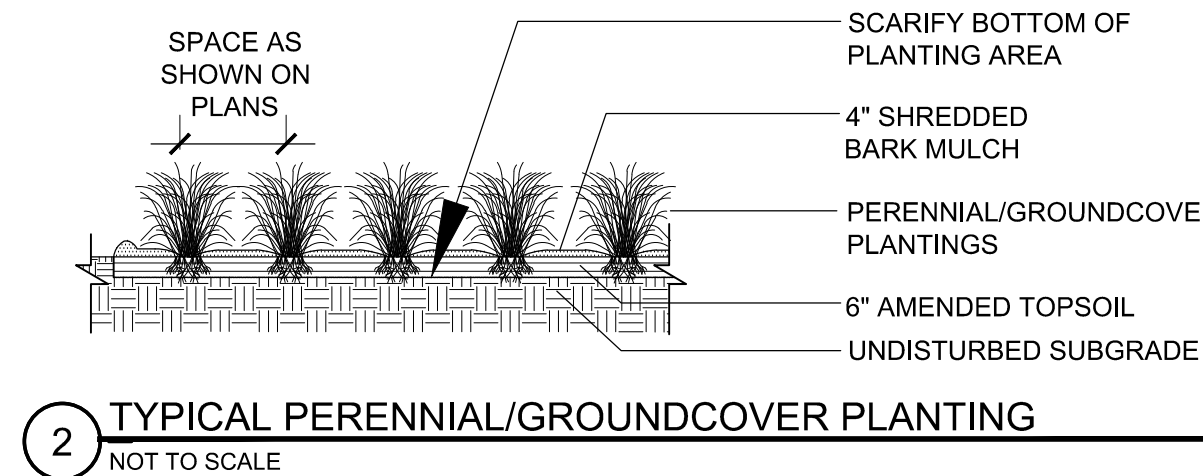
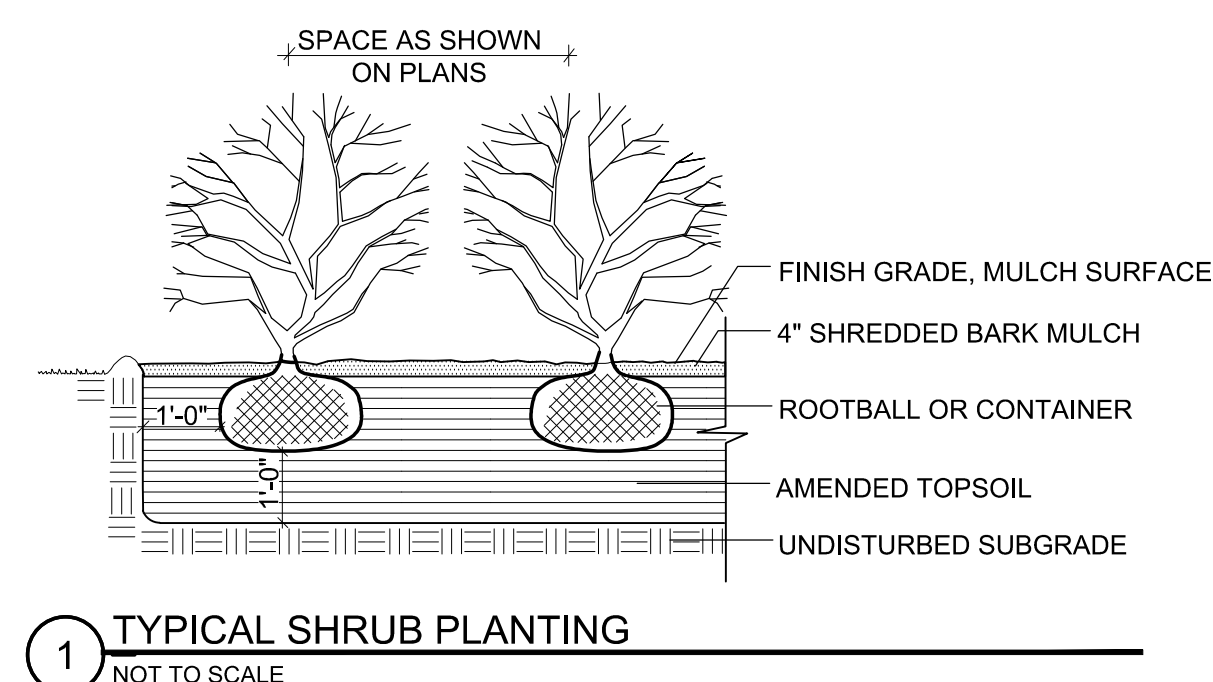
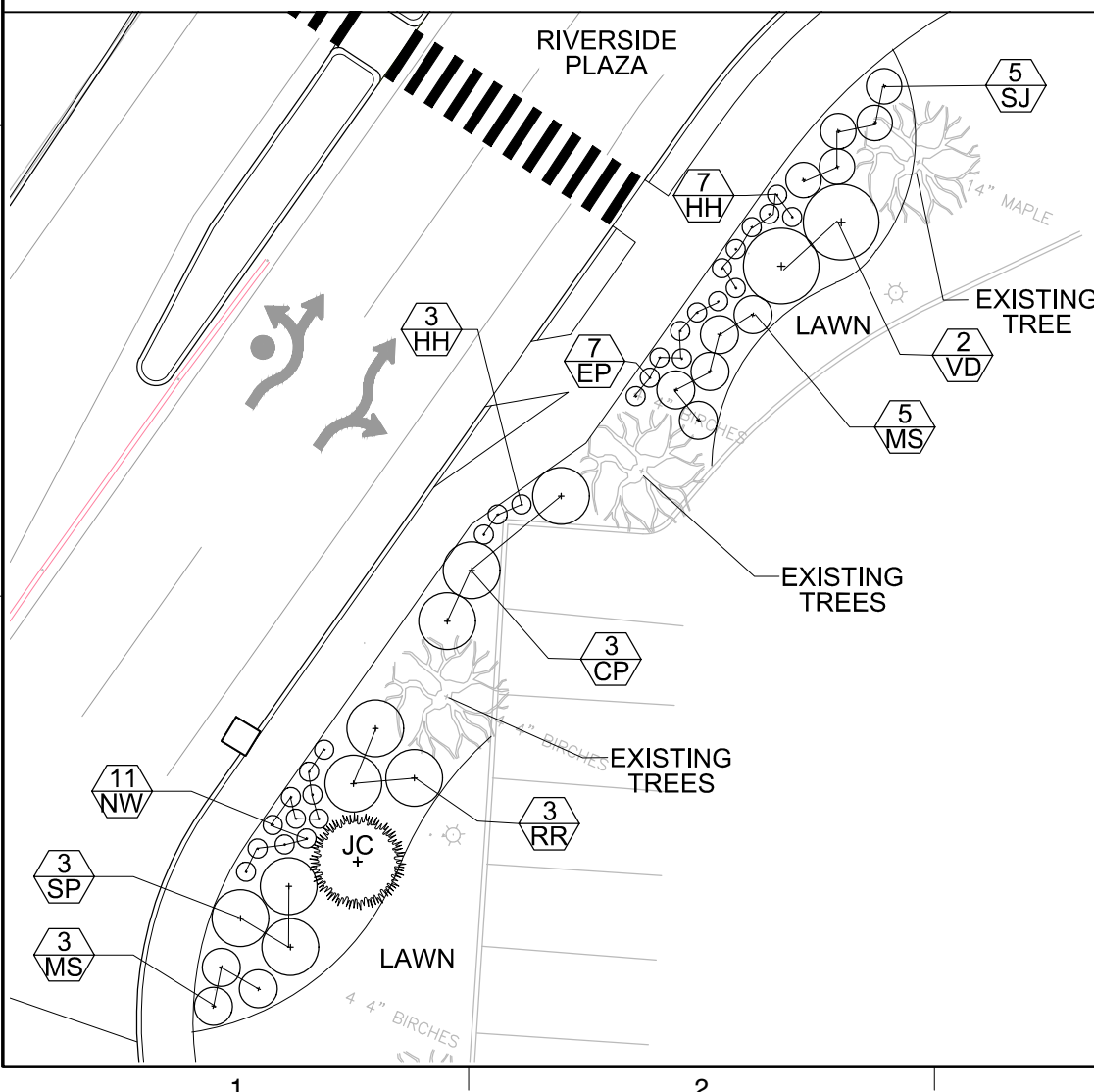
PLANT SCHEDULE: KEY ROAD				
SYMBOL	QTY.	BOTANICAL NAME	COMMON NAME	SIZE/CONT.
SHRUBS				
CP	6	CORNUS ALBA 'PRAIRIE FIRE'	PRAIRIE FIRE DOGWOOD	#5 CONT.
FI	6	FORSYTHIA X INTERMEDIA 'NEW HAMPSHIRE GOLD'	NEW HAMPSHIRE GOLD FORSYTHIA	#5 CONT.
IJ	2	ILEX VERTICILLATA 'JIM DANDY'	JIM DANDY (COMPACT) WINTERBERRY (M)	#5 CONT.
IR	6	ILEX VERTICILLATA 'RED SPRITE'	RED SPRITE (COMPACT) WINTERBERRY (F)	#5 CONT.
JC	3	JUNIPERUS CHINENSIS 'BLUE POINT'	BLUE POINT JUNIPER	5-6' HT.
RR	6	ROSA RUGOSA	PINK RUGOSA ROSE	#5 CONT.
SJ	12	SPYRINAEA JAPONICA 'GOLDMOUND'	GOLD MOUND SPIREA	#5 CONT.
SP	2	SYRINAEA PATULA 'MISS KIM'	MISS KIM LILAC	#7 CONT.
VD	2	VIBURNUM DENTATUM 'SYNNESTEVDT'	CHICAGO LUSTRE VIBURNUM	#10 CONT.
PERENNIALS				
CE	22	COREOPSIS GRANDIFLORA 'EARLY SUNRISE'	EARLY SUNRISE TICKSEED	#2 CONT.
EP	34	ECHINACEA PURPUREA	PURPLE CONEFLOWER	#2 CONT.
HH	14	HEMEROCALLIS X. 'HAPPY RETURNS'	HAPPY RETURNS YELLOW DAYLILY	#2 CONT.
MS	10	MISCANTHUS SINENSIS 'MORNING LIGHT'	MAIDEN GRASS	#3 CONT.
NW	14	NEPETA X FAASSENII 'WALKER'S LOW'	WALKER'S LOW CATMINT	#3 CONT.

PLANT SCHEDULE: PEARL & ISLAND STREETS				
SYMBOL	QTY.	BOTANICAL NAME	COMMON NAME	SIZE/CONT.
SHRUBS				
CP	3	CORNUS ALBA 'PRAIRIE FIRE'	PRAIRIE FIRE DOGWOOD	#5 CONT.
FI	3	FORSYTHIA X INTERMEDIA 'NEW HAMPSHIRE GOLD'	NEW HAMPSHIRE GOLD FORSYTHIA	#5 CONT.
HS	3	HIBISCUS SYRIACUS 'JEANNE D'ARC'	DOUBLE WHITE ROSE OF SHARON	5-6' HT.
JC	3	JUNIPERUS CHINENSIS 'BLUE POINT'	BLUE POINT JUNIPER	5-6' HT.
SJ	15	SPYRINAEA JAPONICA 'GOLDMOUND'	GOLD MOUND SPIREA	#5 CONT.
SP	3	SYRINAEA PATULA 'MISS KIM'	MISS KIM LILAC	#7 CONT.
PERENNIALS				
HH	42	HEMEROCALLIS X. 'HAPPY RETURNS'	HAPPY RETURNS YELLOW DAYLILY	#2 CONT.
NW	15	NEPETA X FAASSENII 'WALKER'S LOW'	WALKER'S LOW CATMINT	#3 CONT.

PLANTING NOTES

- THE CONTRACTOR SHALL VERIFY FIELD CONDITIONS PRIOR TO COMMENCING PLANTING WORK AND NOTIFY THE OWNER'S REPRESENTATIVE IMMEDIATELY IF CONDITIONS DETRIMENTAL TO NEW AND EXISTING PLANT MATERIAL ARE ENCOUNTERED.
- PRIOR TO COMMENCING WORK, THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UNDERGROUND UTILITIES. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO UTILIZE A LOCATING SERVICE TO VERIFY UNDERGROUND UTILITY LOCATIONS.
- THE CONTRACTOR SHALL STAKE LOCATIONS OF ALL PLANT MATERIALS PRIOR TO INSTALLATION. NOTIFY THE OWNER'S REPRESENTATIVE WHEN STAKING IS COMPLETE, TO DETERMINE FINAL LOCATIONS.
- ALL PLANT BEDS SHALL RECEIVE 4" OF MULCH. MATERIAL SHALL BE DOUBLE GROUND HARDWOOD BARK MULCH, FREE OF GROWTH OR GERMINATION INHIBITING INGREDIENTS AND DELETERIOUS MATERIALS, SUITABLE FOR TOP-DRESSING OF PLANT BEDS. DYED AND RAW WOOD CHIPS ARE UNACCEPTABLE.
- THE CONTRACTOR SHALL FURNISH AND INSTALL 6" DEPTH OF TOPSOIL AND SEED FOR LAWN AREAS AND ALL AREAS DISTURBED AS A RESULT OF NEW CONSTRUCTION.
- LANDSCAPING PLANTING WARRANTY: INCLUDE COVERAGE FOR ONE YEAR BEGINNING AT DATE OF SUBSTANTIAL COMPLETION. REPLACE DEAD OR UNHEALTHY PLANTS AS DIRECTED BY OWNER'S REPRESENTATIVE, WITH PLANTS OF SAME SIZE AND SPECIES AS SPECIFIED. REPLACEMENT PLANTS SHALL BE PLANTED IN THE NEXT GROWING SEASON, WITH A NEW WARRANTY COMMENCING ON DATE OF REPLACEMENT.
- CONTRACTOR SHALL FURNISH MAINTENANCE UNTIL END OF ONE YEAR WARRANTY PERIOD. MAINTENANCE SHALL INCLUDE:
 - IRRIGATE SUFFICIENTLY TO SATURATE ROOT SYSTEM AND PREVENT SOIL FROM DRYING OUT.
 - REMOVE DEAD OR BROKEN BRANCHES AND TREAT PRUNED AREAS OR OTHER WOUNDS.
 - NEATLY TRIM PLANTS WHERE NECESSARY. IMMEDIATELY REMOVE CLIPPINGS AFTER TRIMMING.
 - CONTROL GROWTH OF WEEDS. APPLY APPROVED HERBICIDES IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
 - CONTROL INSECT DAMAGE AND DISEASE. APPLY APPROVED PESTICIDES IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
 - REMEDY ANY DAMAGE RESULTING FROM USE OF HERBICIDES AND/OR PESTICIDES.
 - REPAIR OR REPLACE ACCESSORIES WHEN REQUIRED.
- LAWN SEED MIX TO BE 40% KENTUCKY BLUEGRASS, 25% PALMER PERENNIAL RYE GRASS, 35% CHEWINGS FESCUE.

RIVERSIDE PLAZA PLANTINGS



REVISIONS				
NO.	DATE	DESCRIPTION	DRAWN	CHK
1	10/20/2020	INCREASED PLANT SIZES	ELG	DFM

SARATOGA ASSOCIATES PROJECT # 2016-005.10

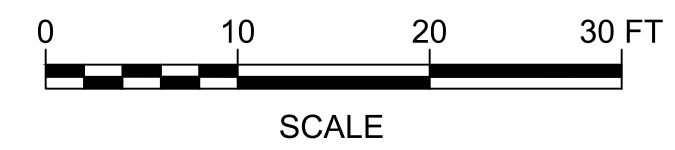
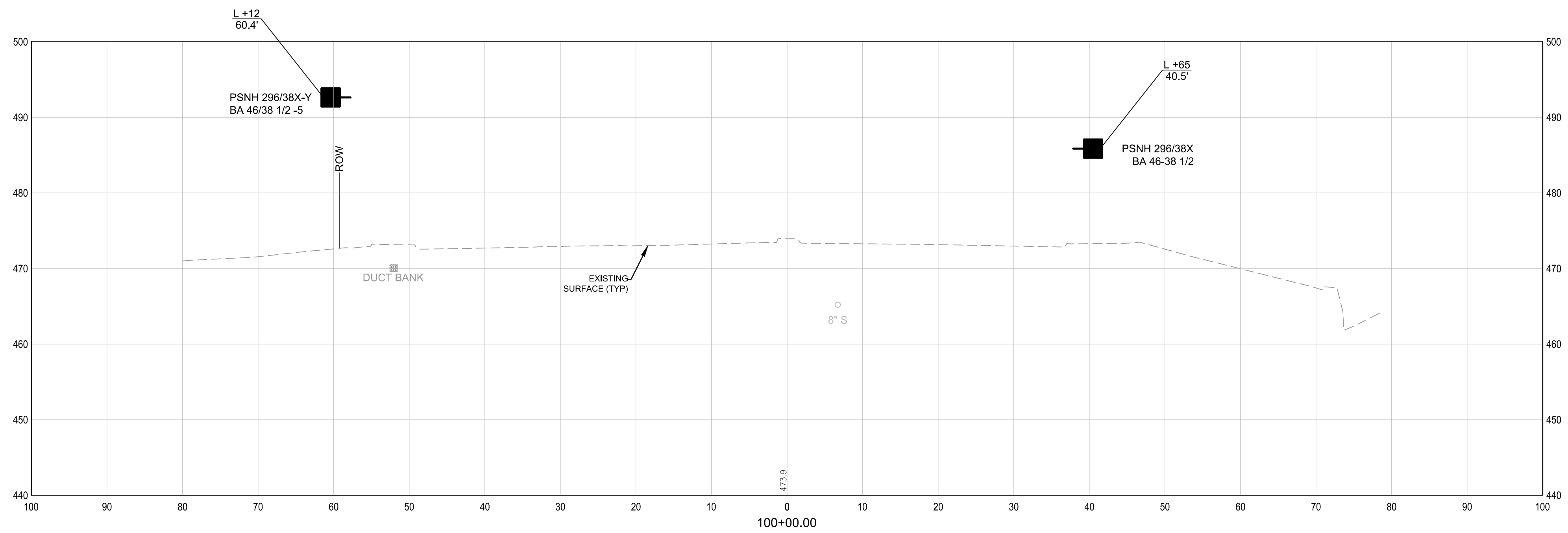
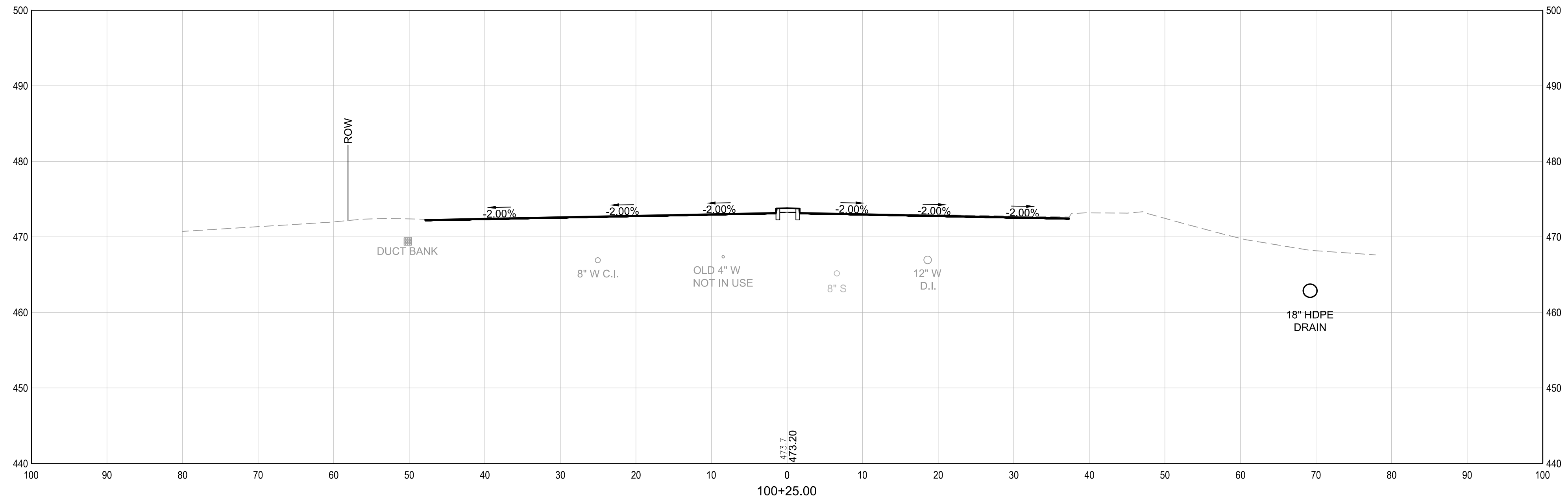
UNAUTHORIZED ALTERATION OR ADDITION TO THIS DOCUMENT IS A VIOLATION OF SECTION 2303 OF THE NEW YORK STATE EDUCATION LAW. © 2020 ALL RIGHTS RESERVED SARATOGA ASSOCIATES


DATE: 09/04/2020
DRAWN BY: ELG/RJM
CHECKED BY: DFM
PHASE: CD
DWG SCALE: 1" = 20'-0"

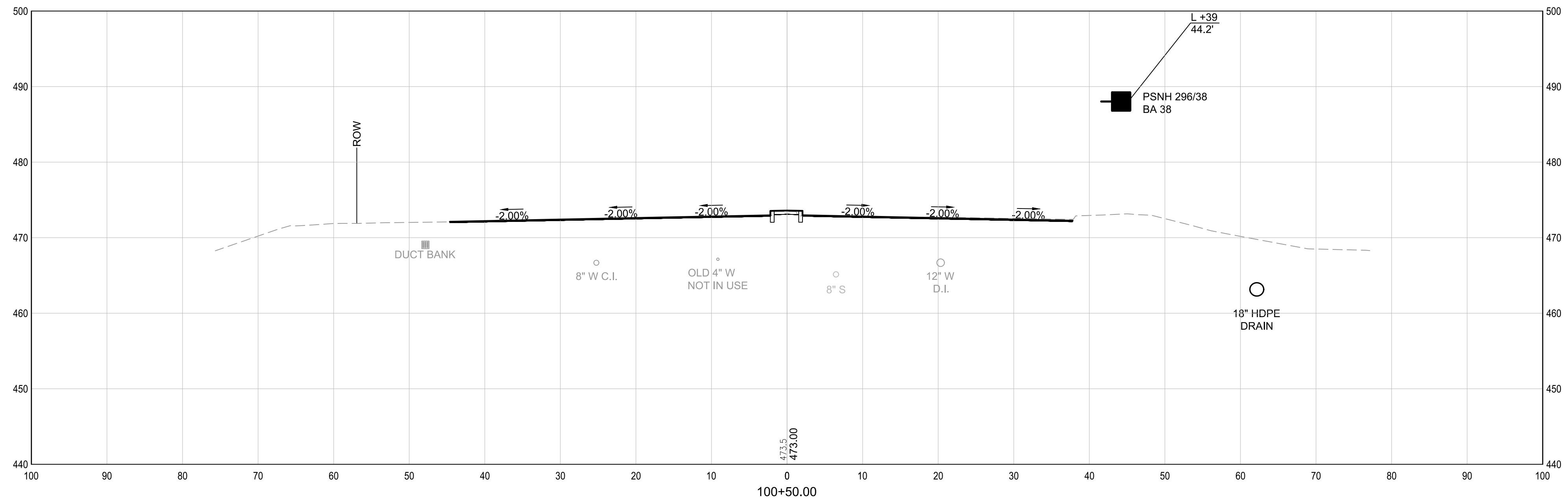
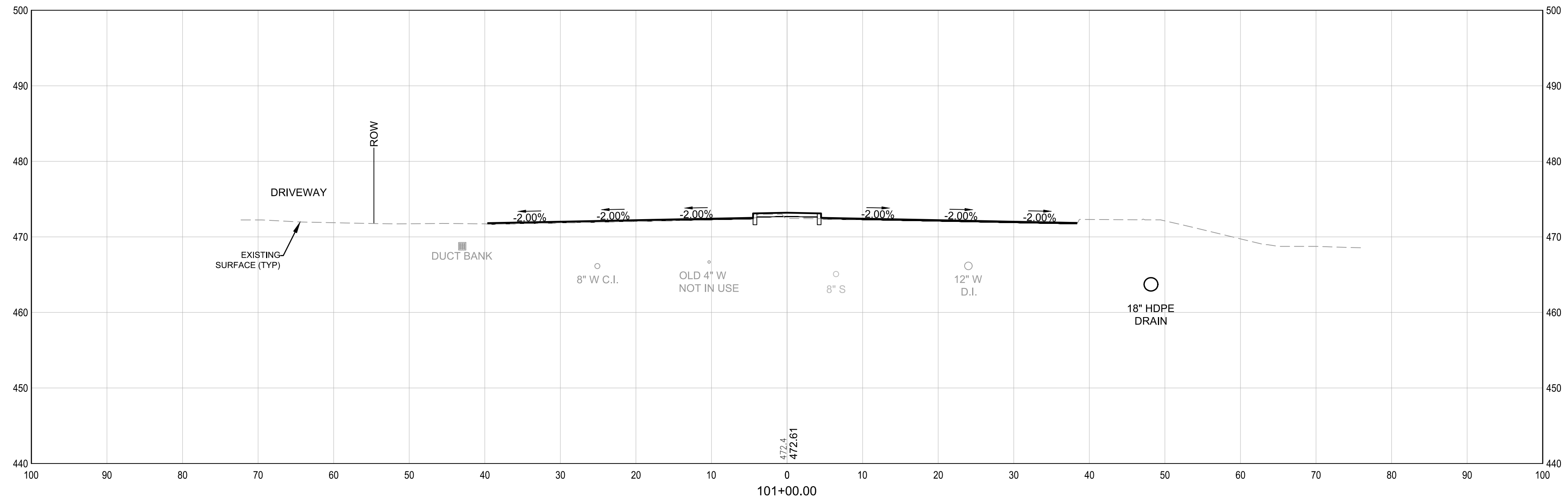
**ROUNDABOUT
PLANTING
PLAN**


L100

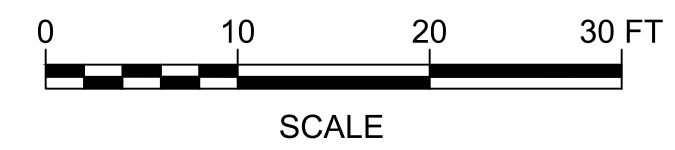
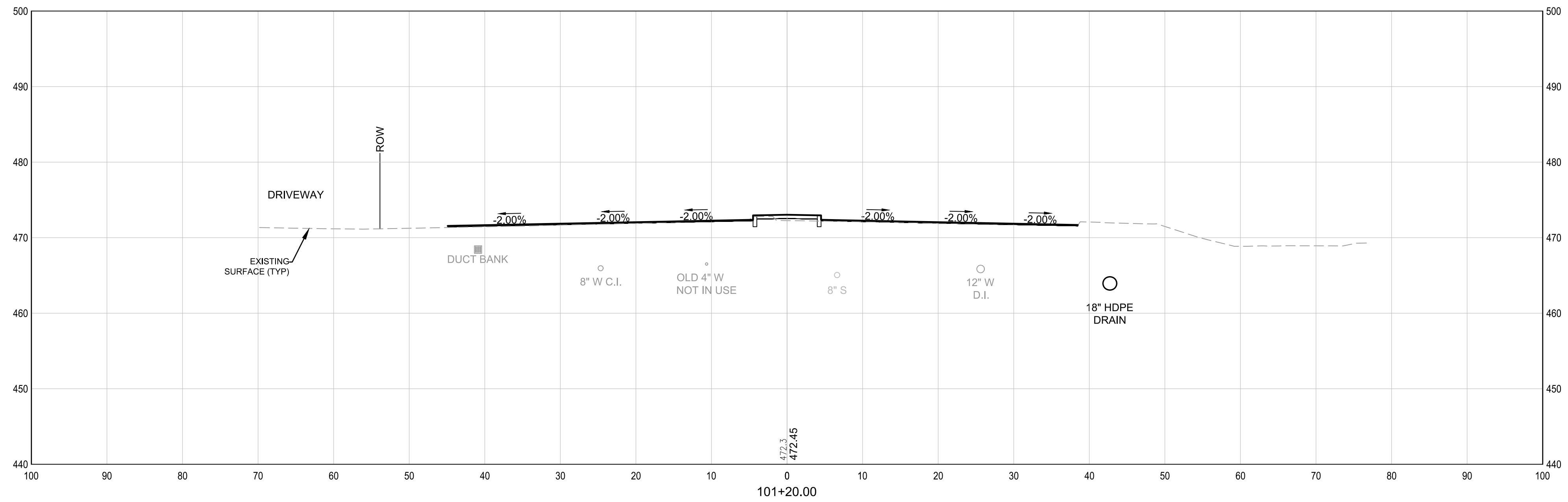
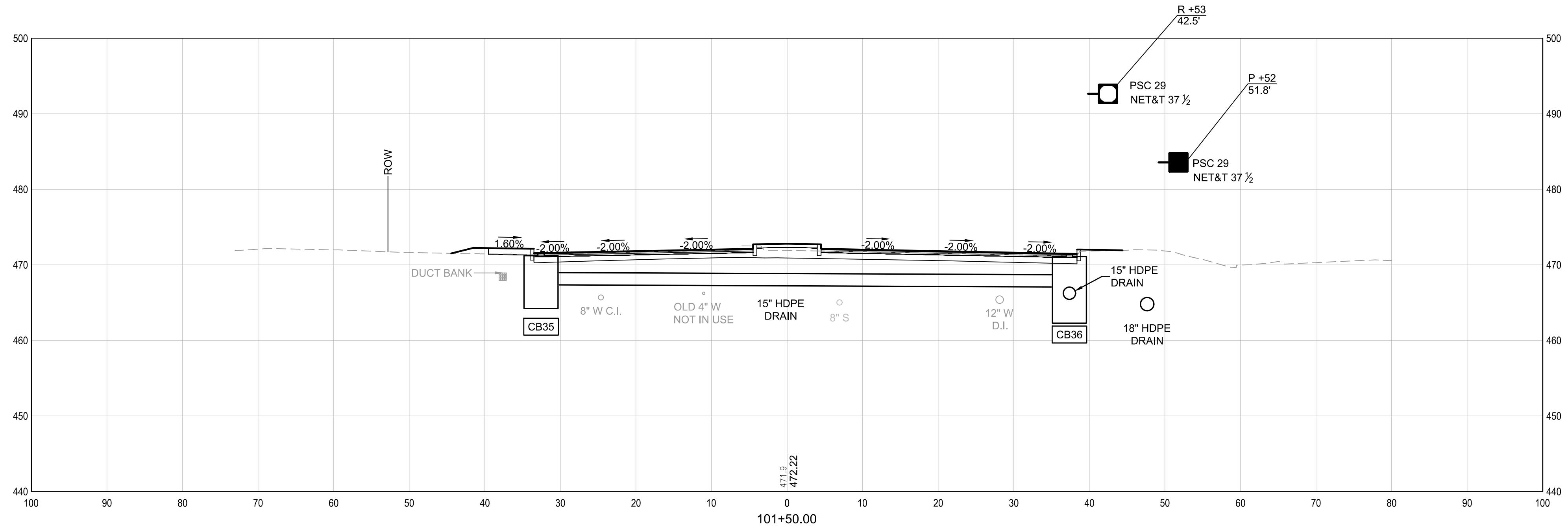
File Name: S:\2016\005\Keene NH\Winchester St Improvements\IC 4 Production\IC_4_3-CD\16005 Winchester St_Planting_2020-10-20.dwg
User: [redacted] Plot Date and Time: 10/20/2020 5:01 PM




CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
WINCHESTER STREET CROSS SECTIONS STA 100+00.00 TO STA 100+25.00			
REV	DATE	DESCRIPTION	BY
 McFarland Johnson		53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301	
SCALE: AS SHOWN		DESIGN: BEP	XS-01 75 OF 143
DRAWN: MJF		PROJECT: 18022.01	
CHECKED: EWM		DATE: SEPTEMBER 2021	

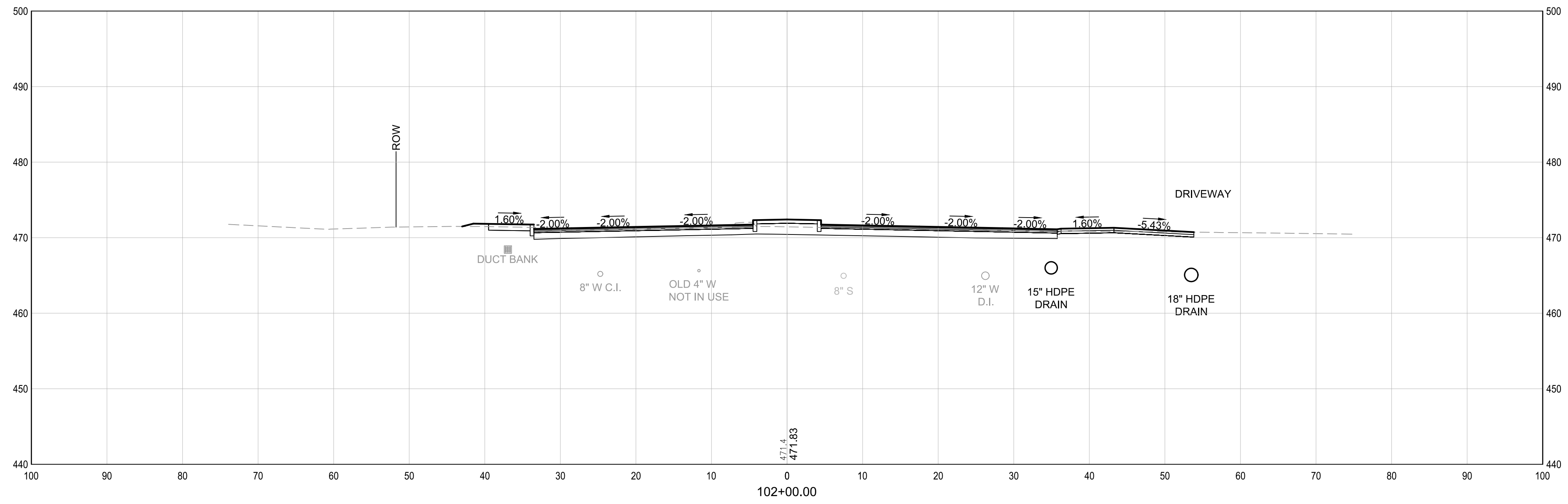
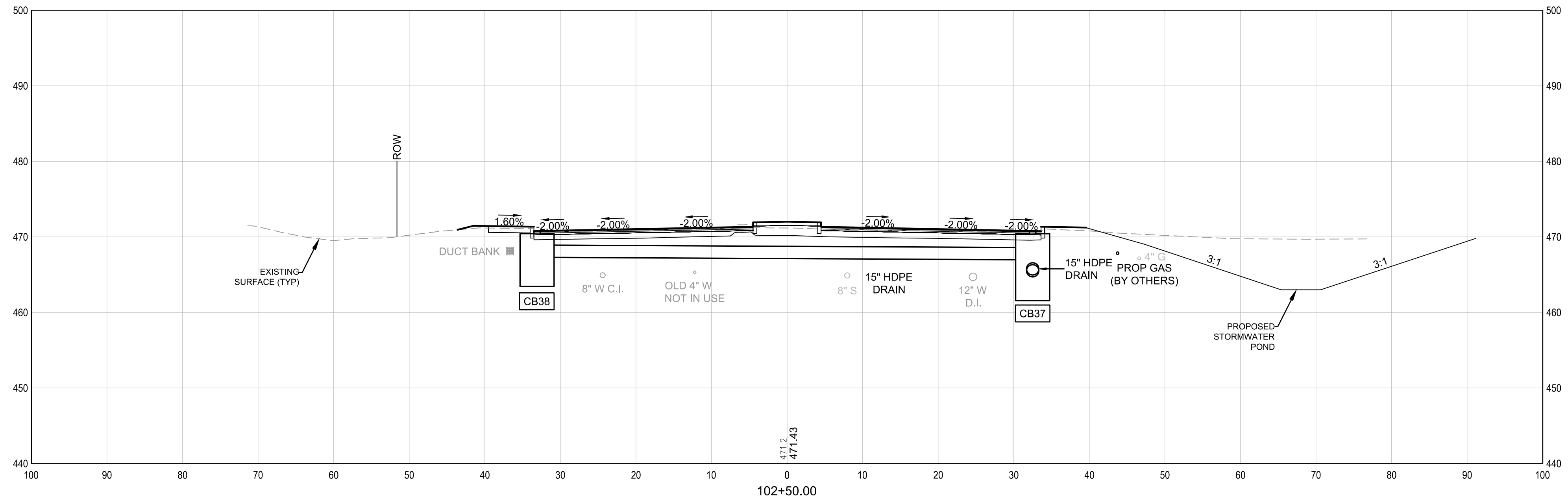



CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
WINCHESTER STREET CROSS SECTIONS STA 100+50.00 TO STA 101+00.00			
REV	DATE	DESCRIPTION	BY
 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301		SCALE: AS SHOWN	DESIGN: BEP
		DRAWN: MJF	PROJECT: 18022.01
		CHECKED: EWM	DATE: SEPTEMBER 2021
			XS-02 76 OF 143



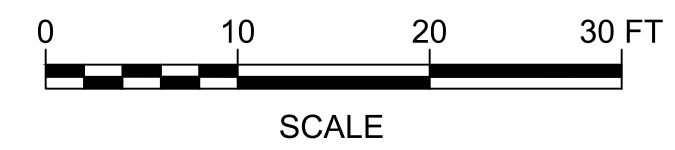
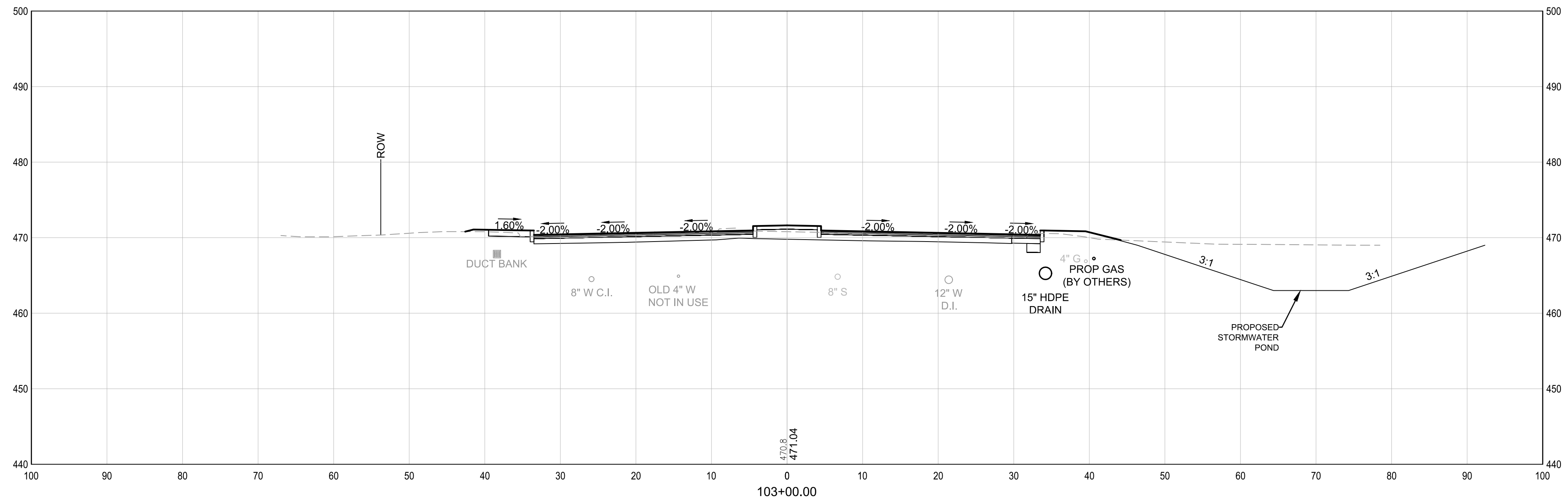
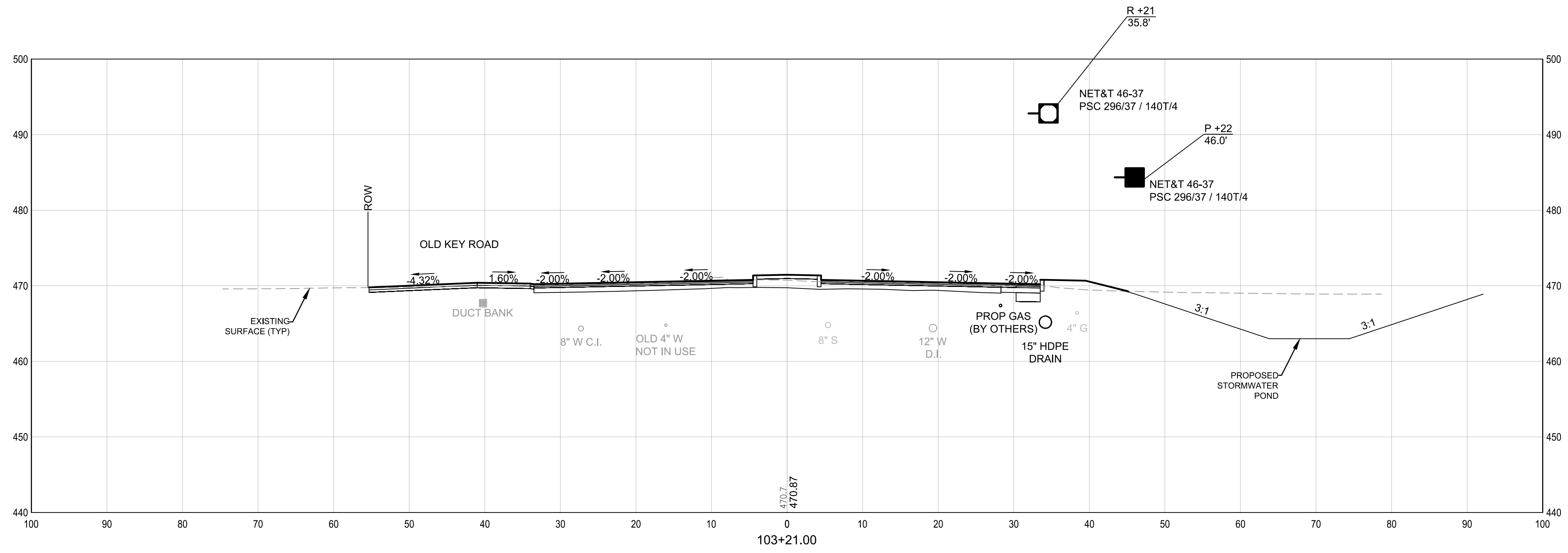
CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
WINCHESTER STREET CROSS SECTIONS STA 101+20.00 TO STA 101+50.00			
REV	DATE	DESCRIPTION	BY
 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301		SCALE: AS SHOWN	DESIGN: BEP
		DRAWN: MJF	PROJECT: 18022.01
		CHECKED: EWM	DATE: SEPTEMBER 2021
			XS-03 77 OF 143

M:\18022.01 KEENE WINCHESTER FINAL\DRAWINGS\SHEET FILES\18022.01-XSEC.DWG



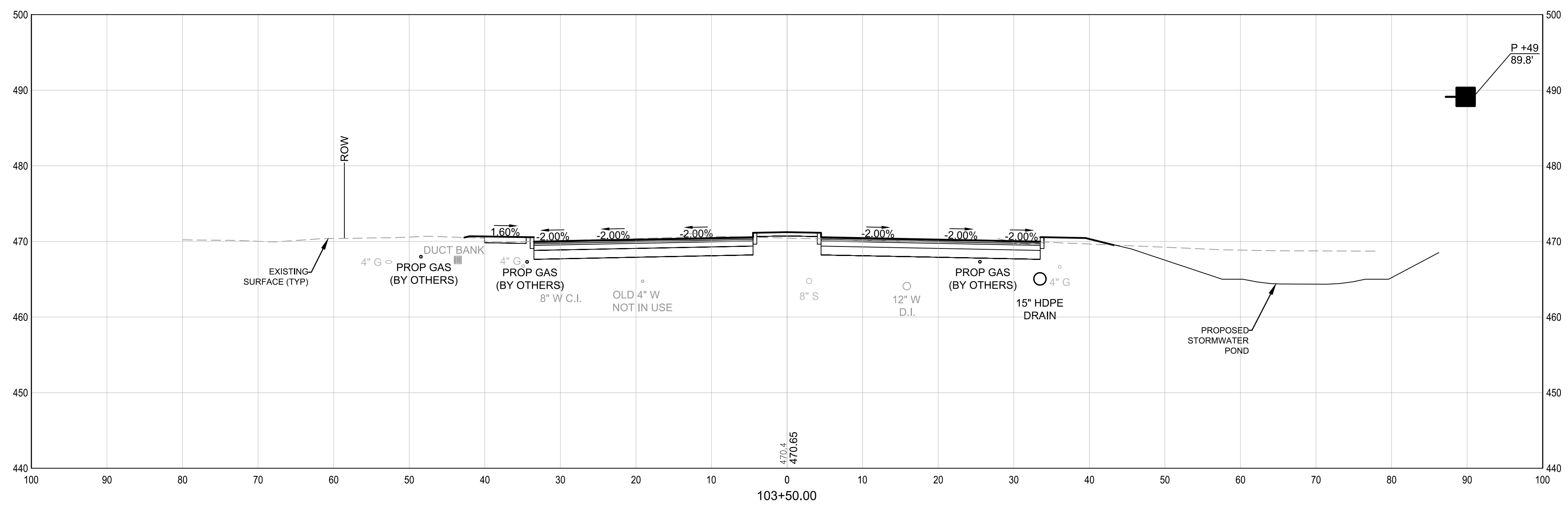
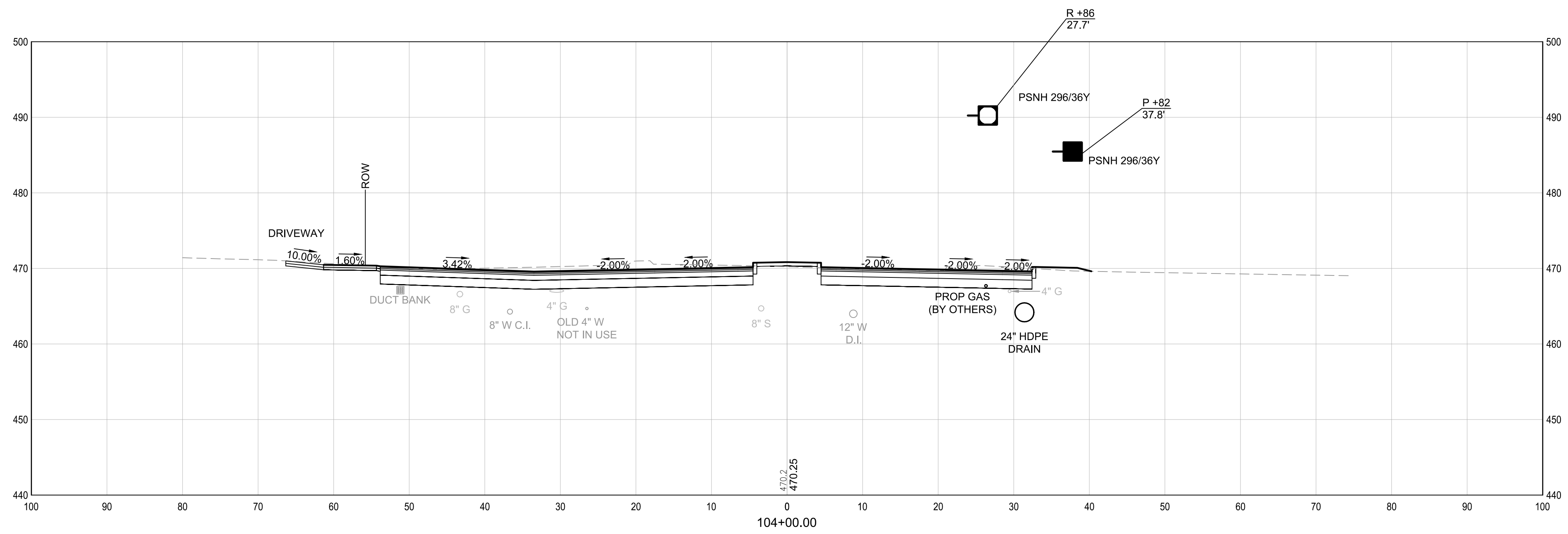
CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
WINCHESTER STREET CROSS SECTIONS STA 102+00.00 TO STA 102+50.00			
REV	DATE	DESCRIPTION	BY
 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301		SCALE: AS SHOWN DRAWN: MJF CHECKED: EWM	DESIGN: BEP PROJECT: 18022.01 DATE: SEPTEMBER 2021
			XS-04 78 OF 143

M:\18022.01 KEENE WINCHESTER FINAL DRAWINGS\SHEET FILES\18022.01-XSEC.DWG



CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
WINCHESTER STREET CROSS SECTIONS STA 103+00.00 TO STA 103+21.00			
SCALE: AS SHOWN	DESIGN: BEP	XS-05 79 OF 143	
DRAWN: MJF	PROJECT: 18022.01		
CHECKED: EWM	DATE: SEPTEMBER 2021		

McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

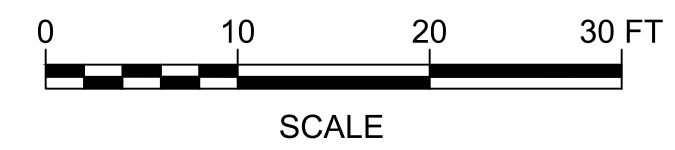
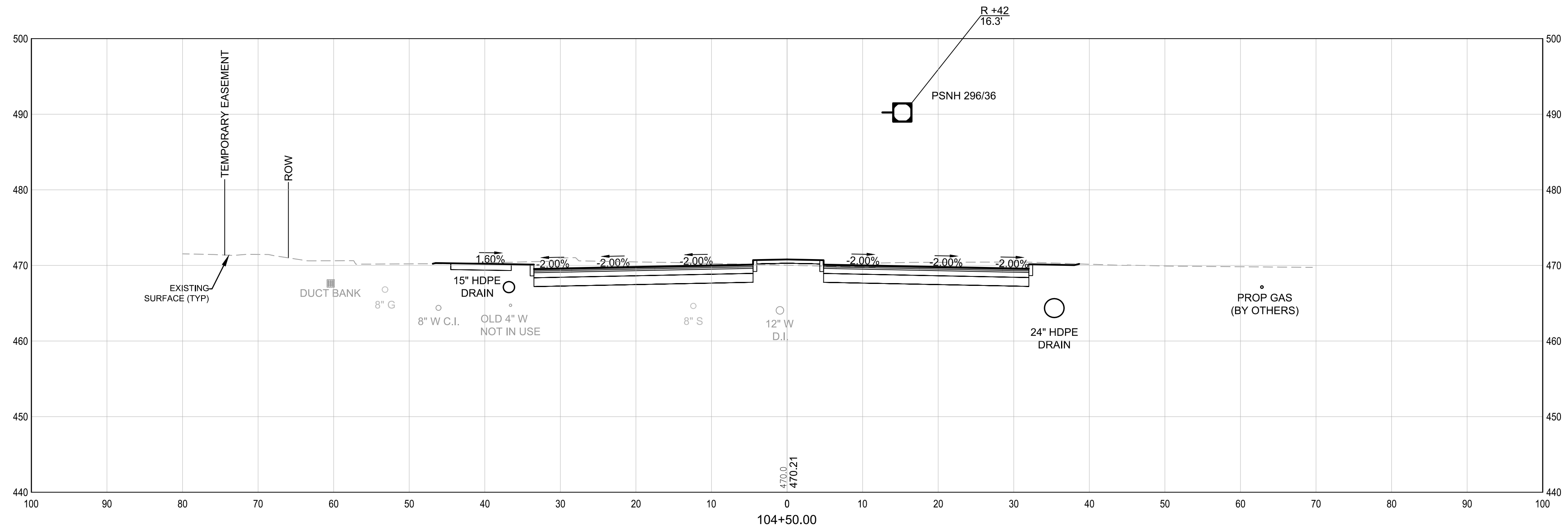
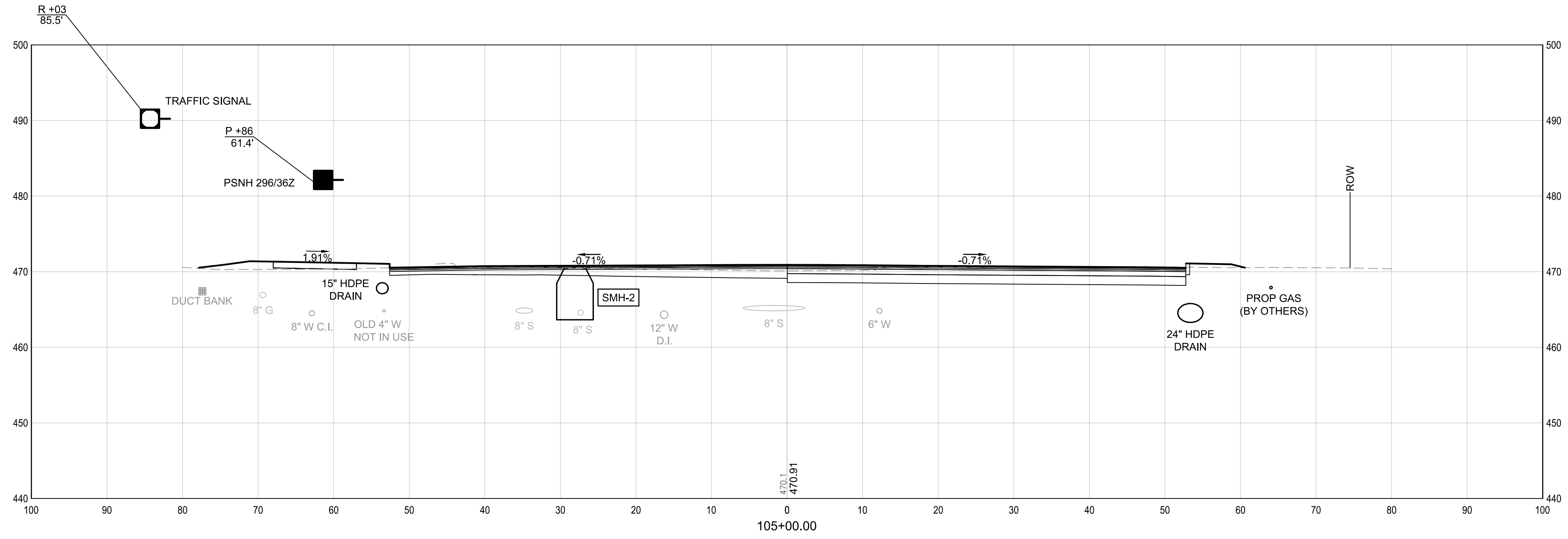



REV	DATE	DESCRIPTION	BY

CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
WINCHESTER STREET CROSS SECTIONS STA 103+50.00 TO STA 104+00.00			
SCALE: AS SHOWN	DESIGN: BEP	XS-06 80 OF 143	
DRAWN: MJF	PROJECT: 18022.01		
CHECKED: EWM	DATE: SEPTEMBER 2021		

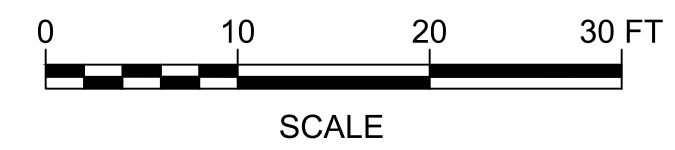
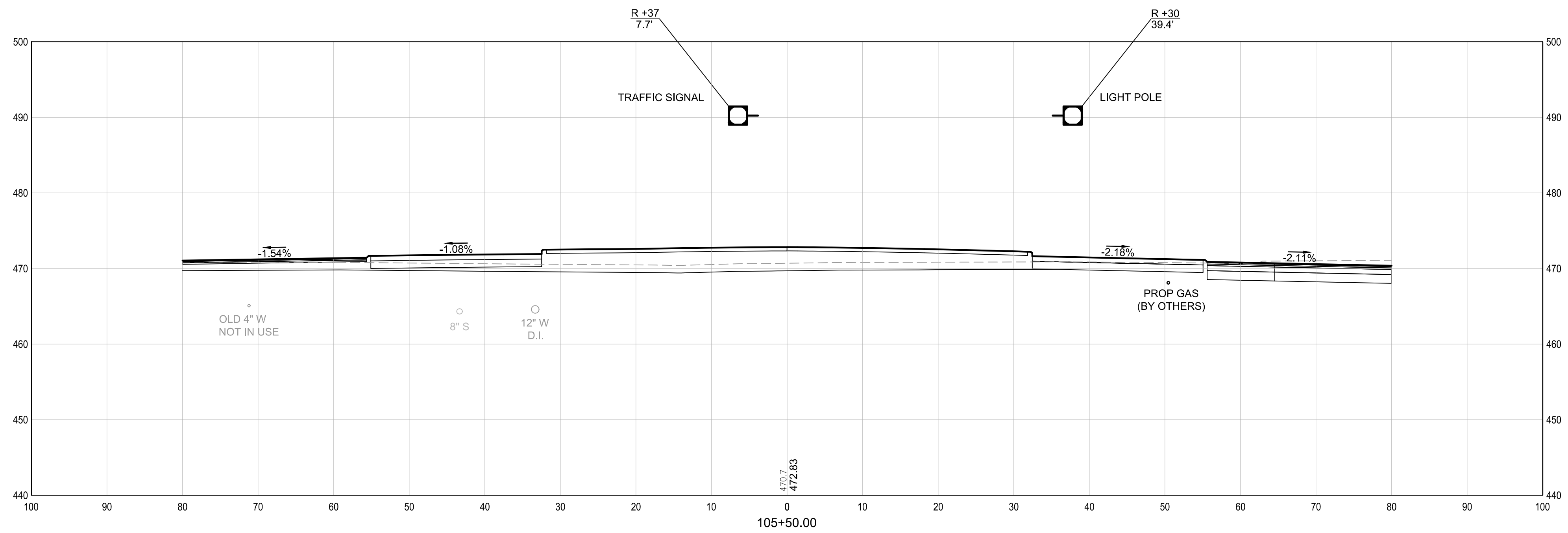
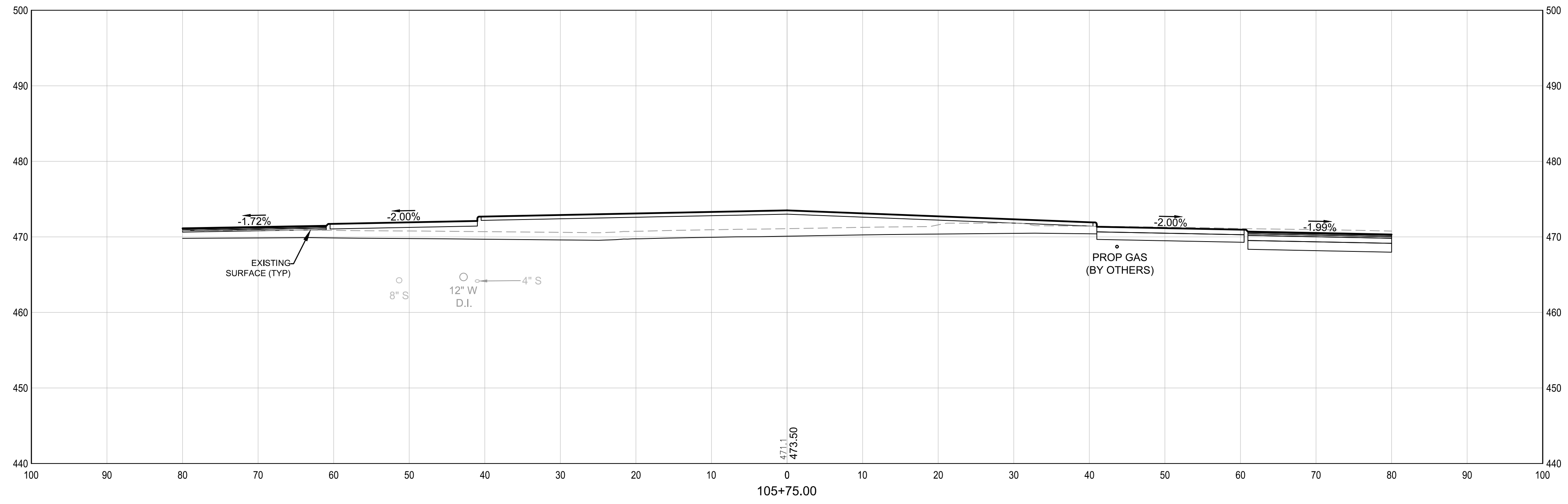



McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301



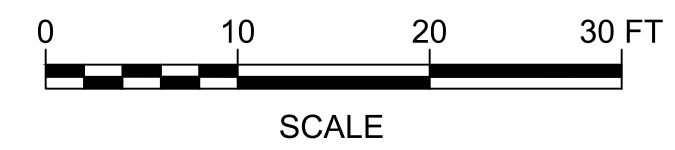
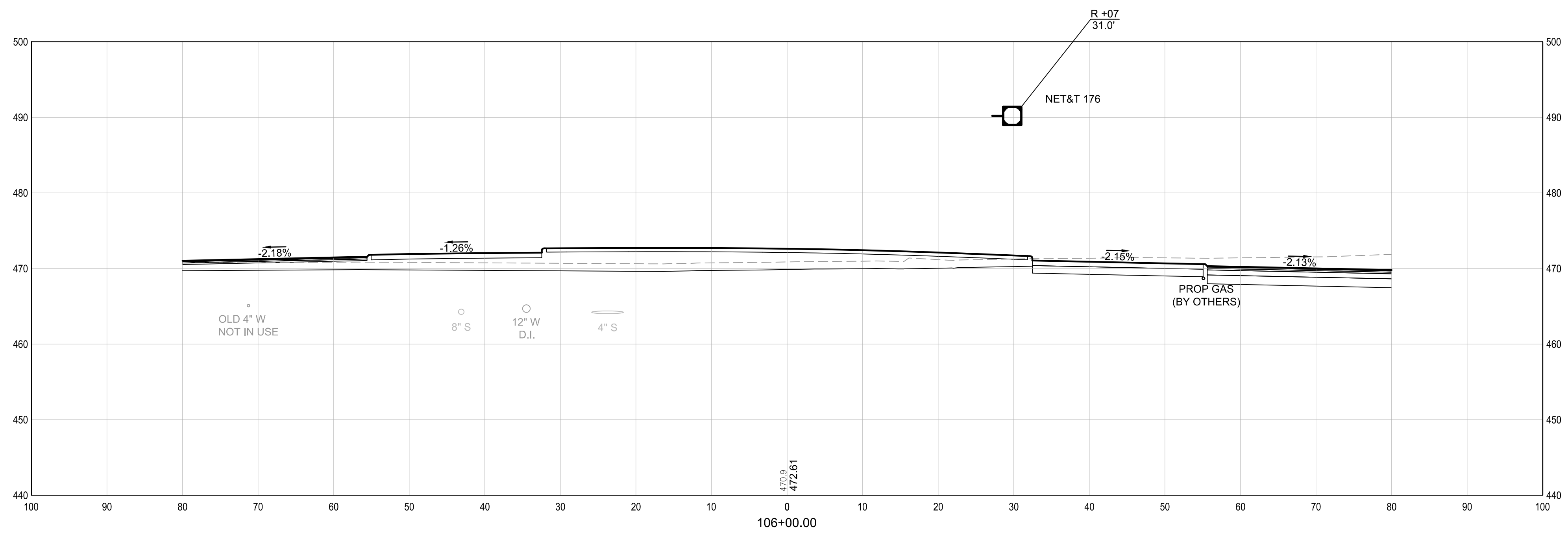
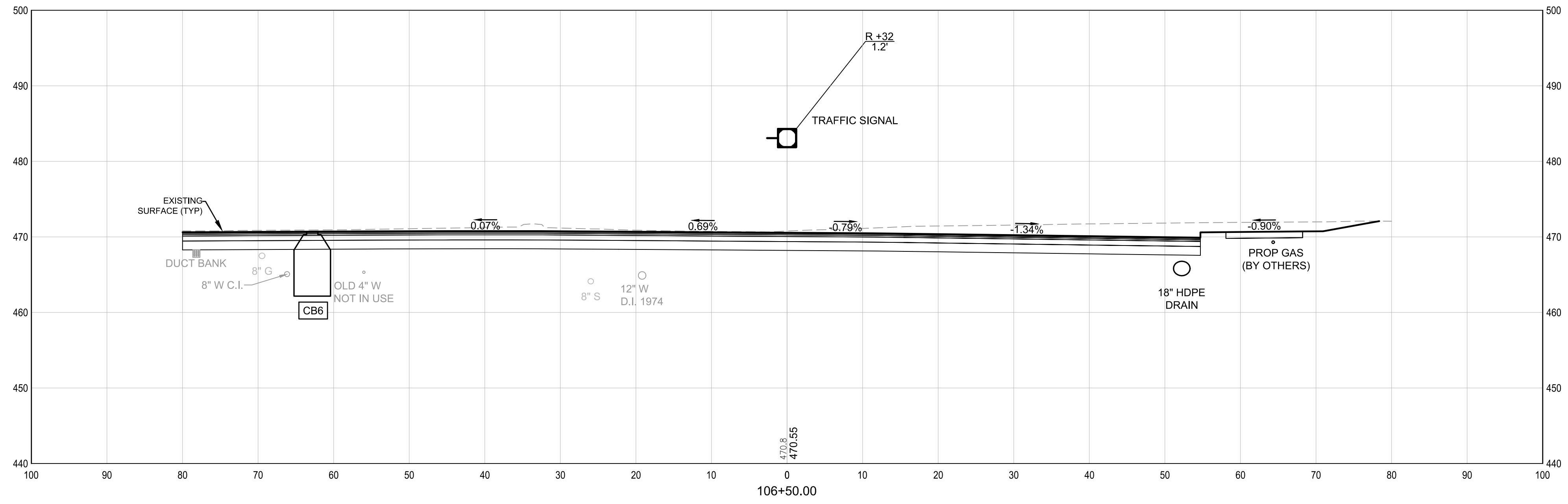
CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
WINCHESTER STREET CROSS SECTIONS STA 104+50.00 TO STA 105+00.00			
REV	DATE	DESCRIPTION	BY
 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301		SCALE: AS SHOWN	DESIGN: BEP
		DRAWN: MJF	PROJECT: 18022.01
		CHECKED: EWM	DATE: SEPTEMBER 2021
			XS-07 81 OF 143


M:\18022.01 KEENE WINCHESTER FINAL DRAWINGS\SHSHEET FILES\18022.01-XSEC.DWG



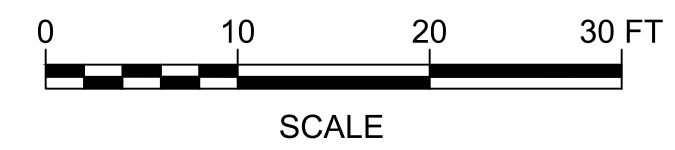
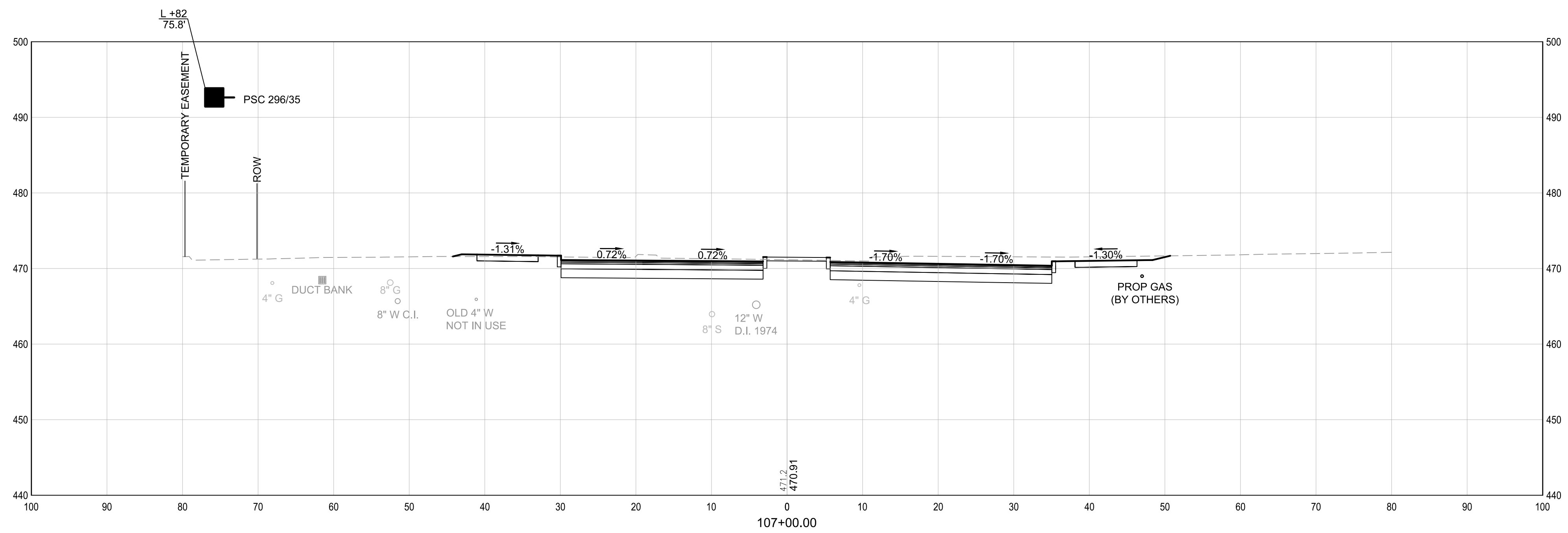
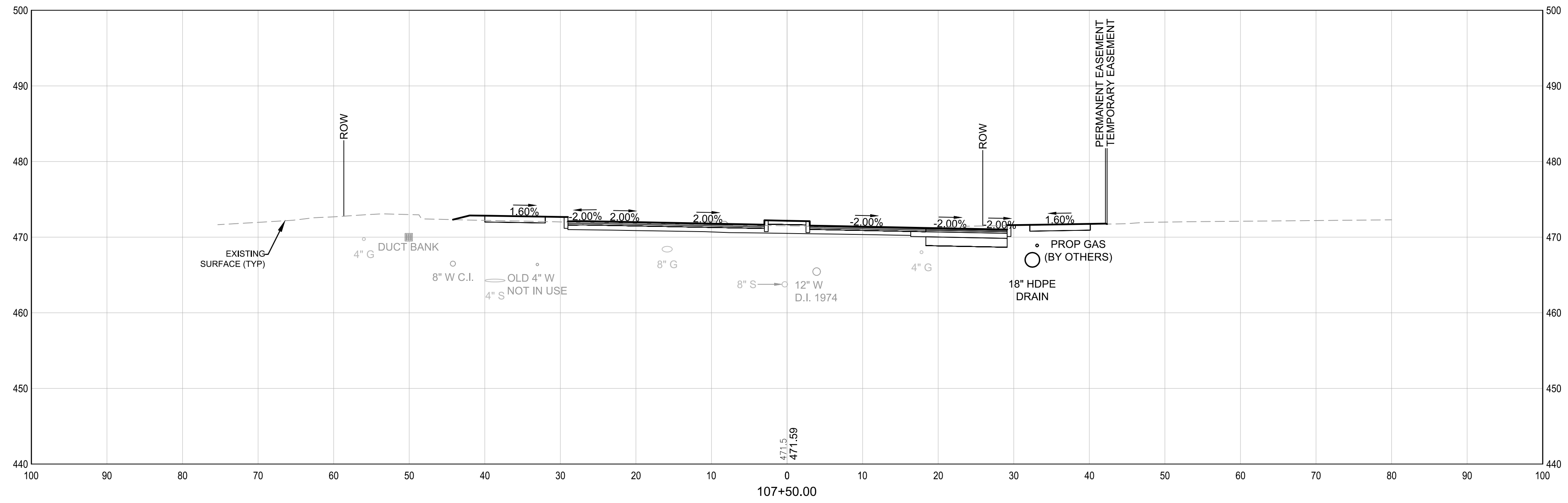
CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
WINCHESTER STREET CROSS SECTIONS STA 105+50.00 TO STA 105+75.00			
REV	DATE	DESCRIPTION	BY
 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301		SCALE: AS SHOWN	DESIGN: BEP
		DRAWN: MJF	PROJECT: 18022.01
		CHECKED: EWM	DATE: SEPTEMBER 2021
			XS-08 82 OF 143


M:\18022.01 KEENE WINCHESTER FINAL\DRAWINGS\SHEET FILES\18022.01-XSEC.DWG



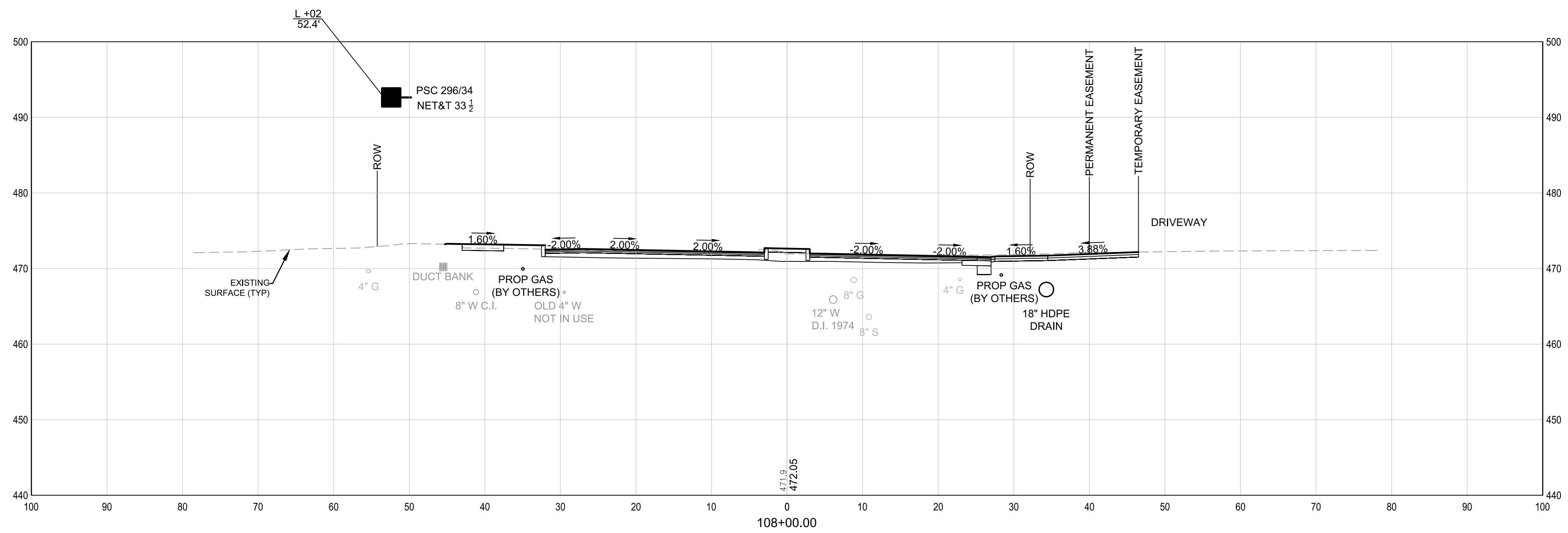
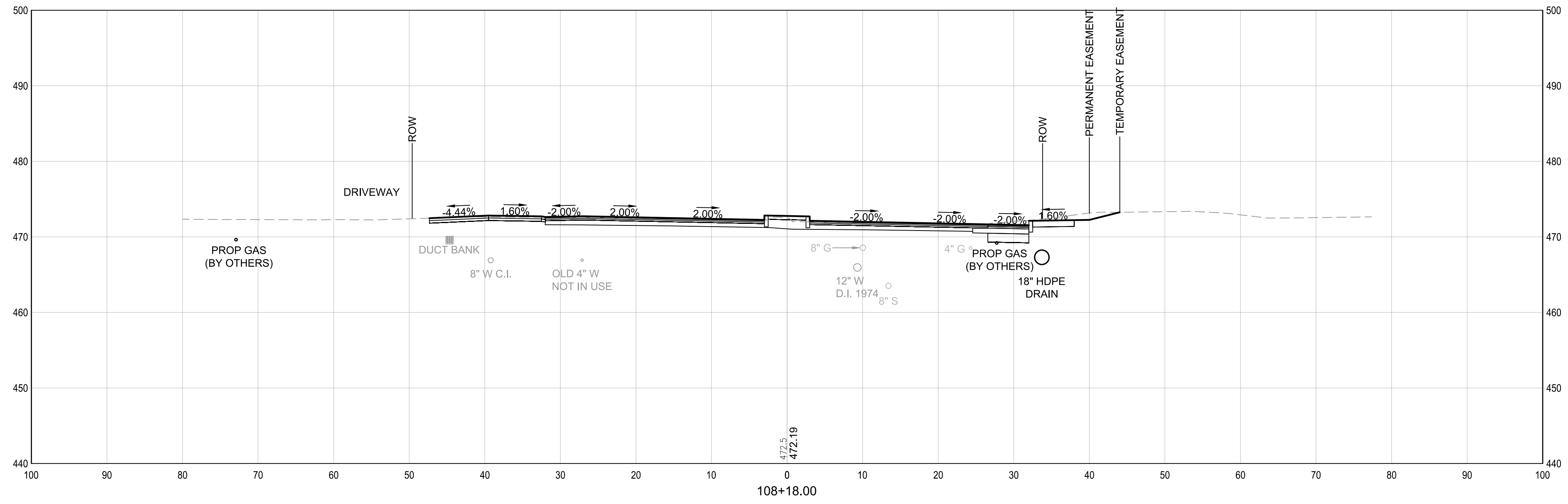
CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
WINCHESTER STREET CROSS SECTIONS STA 106+00.00 TO STA 106+50.00			
REV	DATE	DESCRIPTION	BY
 McFarland Johnson		53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301	
SCALE: AS SHOWN		DESIGN: BEP	XS-09 83 OF 143
DRAWN: MJF		PROJECT: 18022.01	
CHECKED: EWM		DATE: SEPTEMBER 2021	


M:\18022.01 KEENE WINCHESTER FINAL\DRAWINGS\SHEET FILES\18022.01-XSEC.DWG



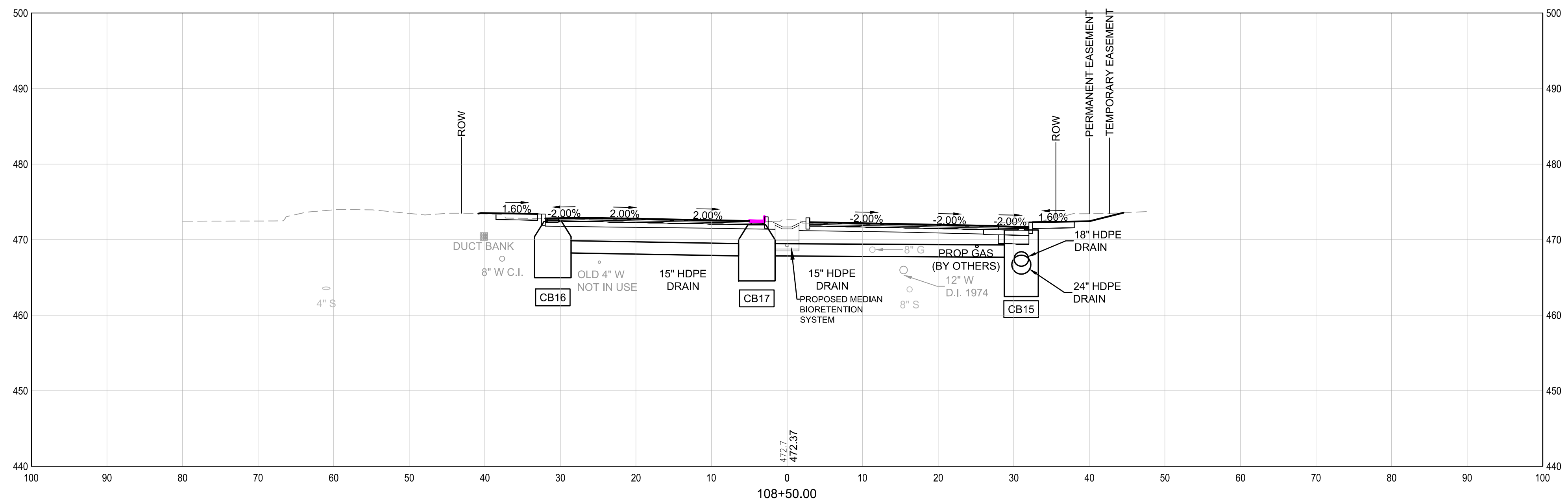
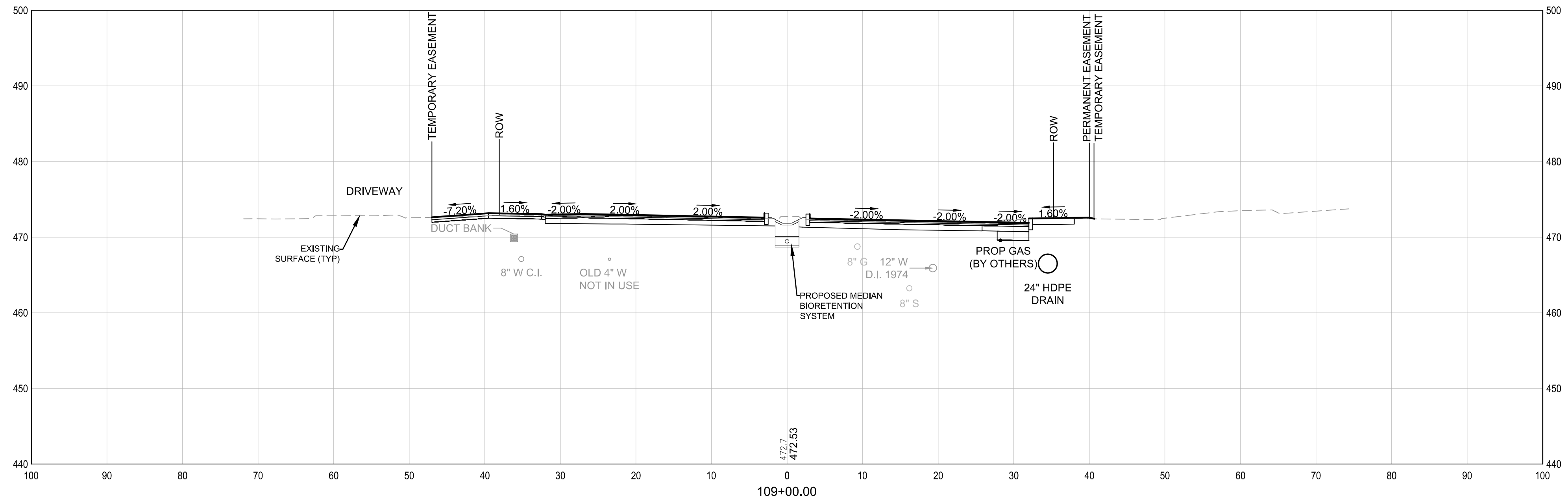
CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
WINCHESTER STREET CROSS SECTIONS STA 107+00.00 TO STA 107+50.00			
REV	DATE	DESCRIPTION	BY
 McFarland Johnson		53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301	
SCALE: AS SHOWN		DESIGN: BEP	
DRAWN: MJF		PROJECT: 18022.01	
CHECKED: EWM		DATE: SEPTEMBER 2021	
XS-10			84 OF 143

M:\18022.01 KEENE WINCHESTER FINAL DRAWINGS\SHSHEET FILES\18022.01-XSEC.DWG




CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
WINCHESTER STREET CROSS SECTIONS STA 108+00.00 TO STA 108+18.00			
REV	DATE	DESCRIPTION	BY
 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301		SCALE: AS SHOWN	DESIGN: BEP
		DRAWN: MJF	PROJECT: 18022.01
		CHECKED: EWM	DATE: SEPTEMBER 2021
			XS-11 85 OF 143

M:\18022.01 KEENE WINCHESTER FINAL DRAWINGS\SHEET FILES\18022.01-XSEC.DWG

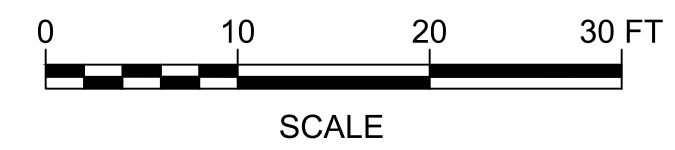
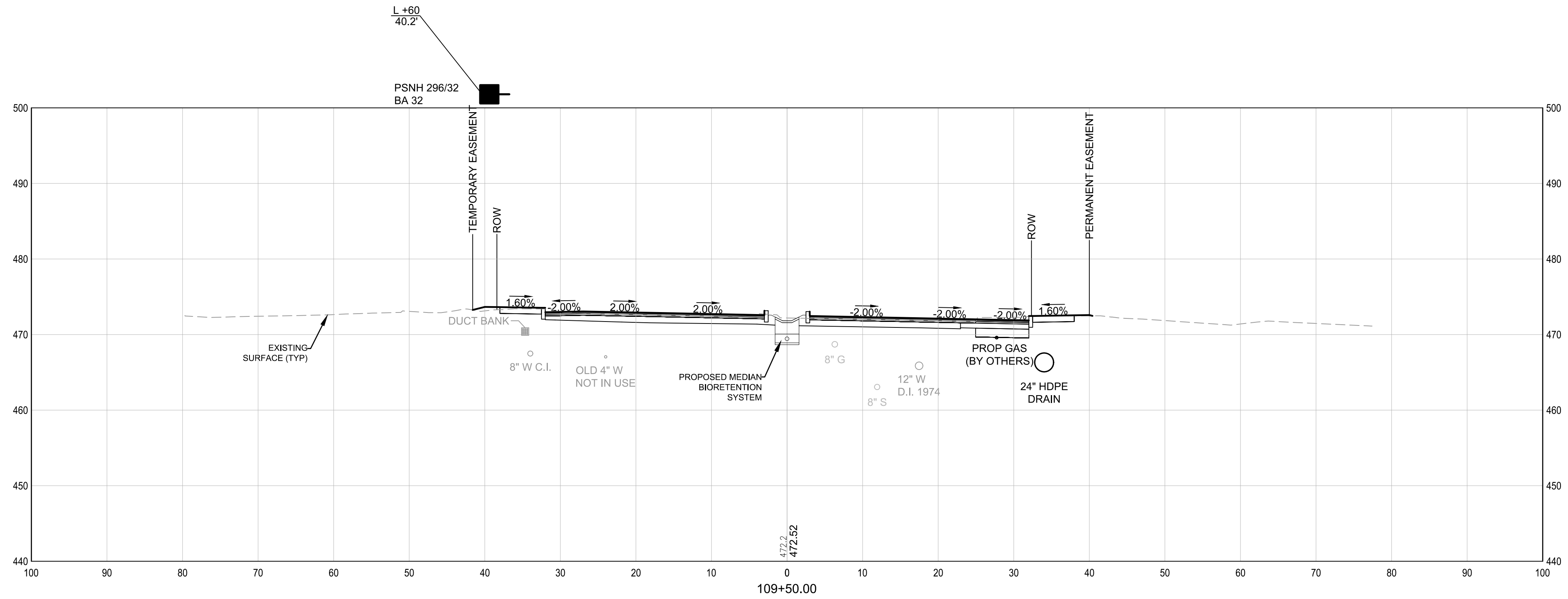
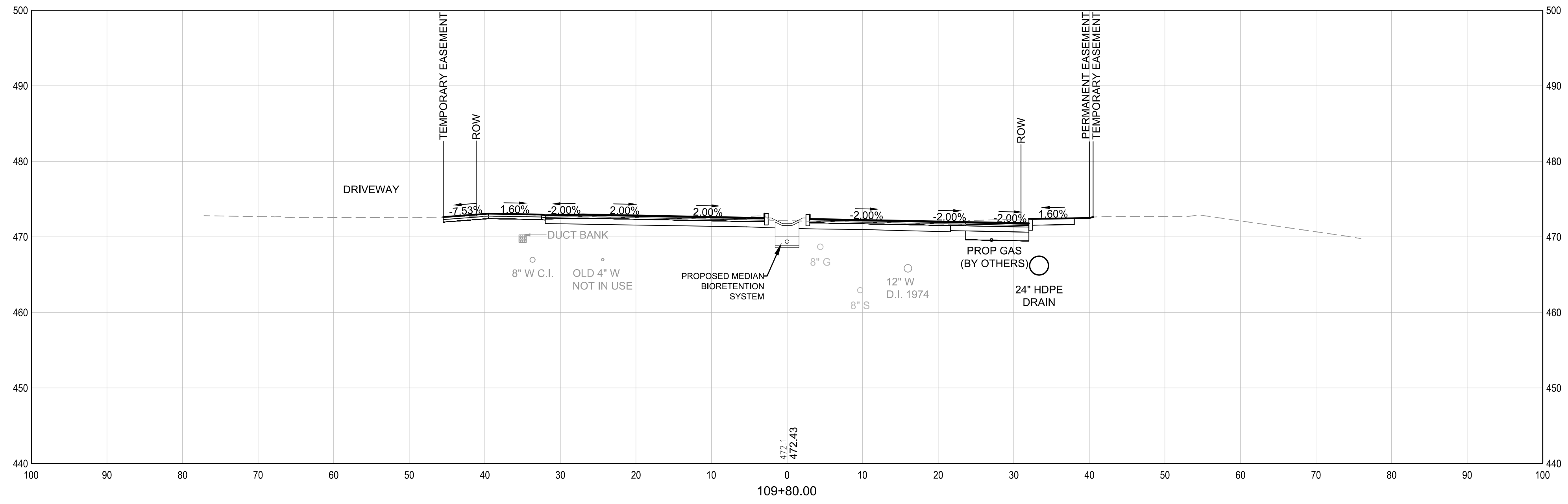



REV	DATE	DESCRIPTION	BY

CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
WINCHESTER STREET CROSS SECTIONS STA 108+50.00 TO STA 109+00.00			
SCALE: AS SHOWN	DESIGN: BEP	XS-12 86 OF 143	
DRAWN: MJF	PROJECT: 18022.01		
CHECKED: EWM	DATE: SEPTEMBER 2021		

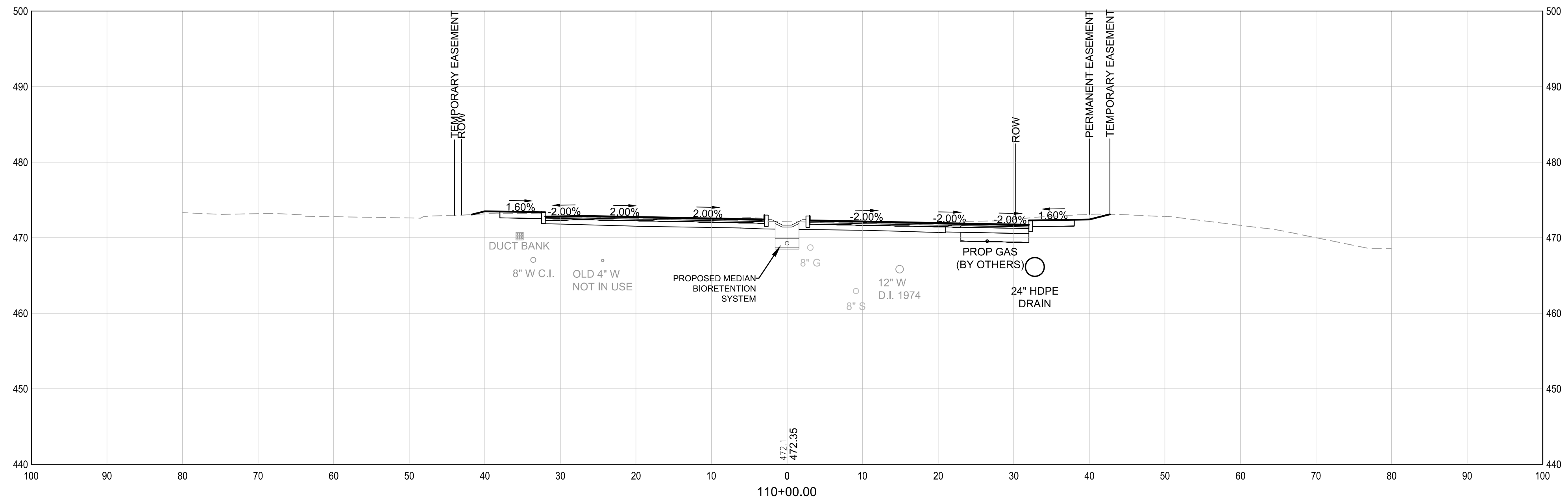
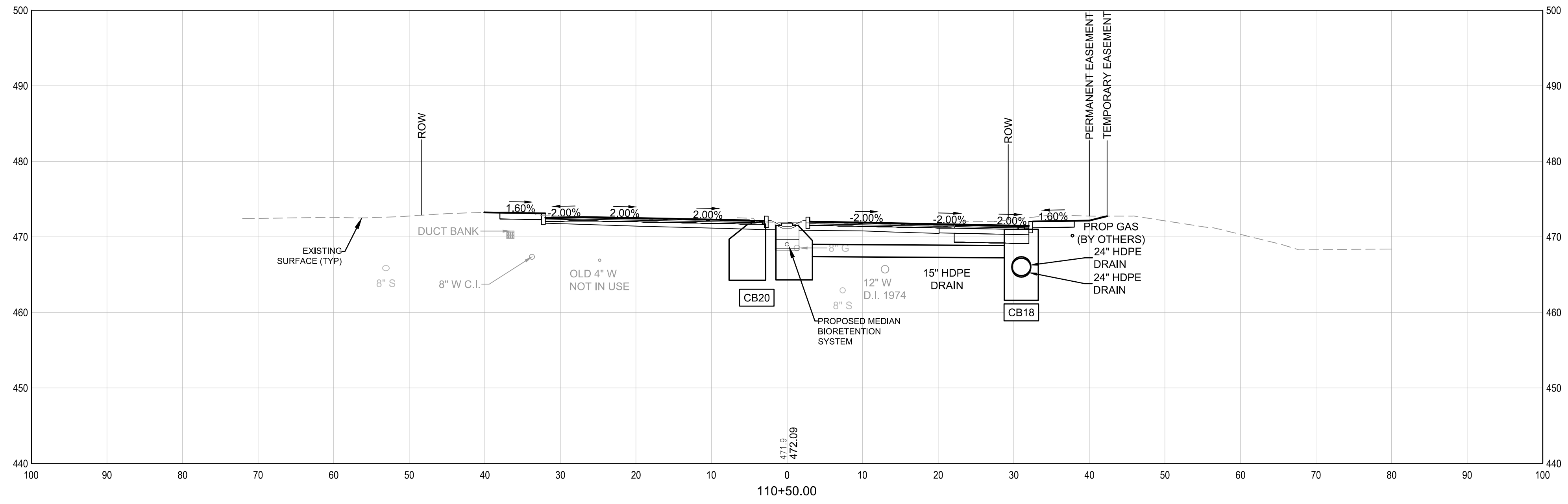
 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301	
---	--


M:\18022.01 KEENE WINCHESTER FINAL DRAWINGS\SHEET FILES\18022.01-XSEC.DWG

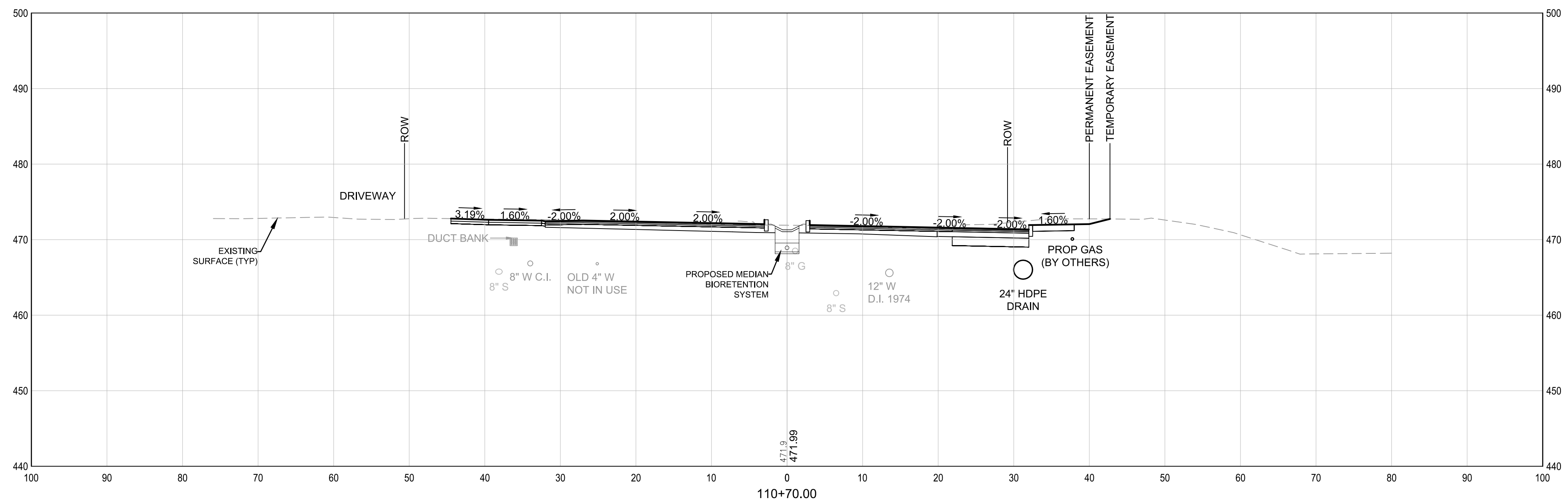
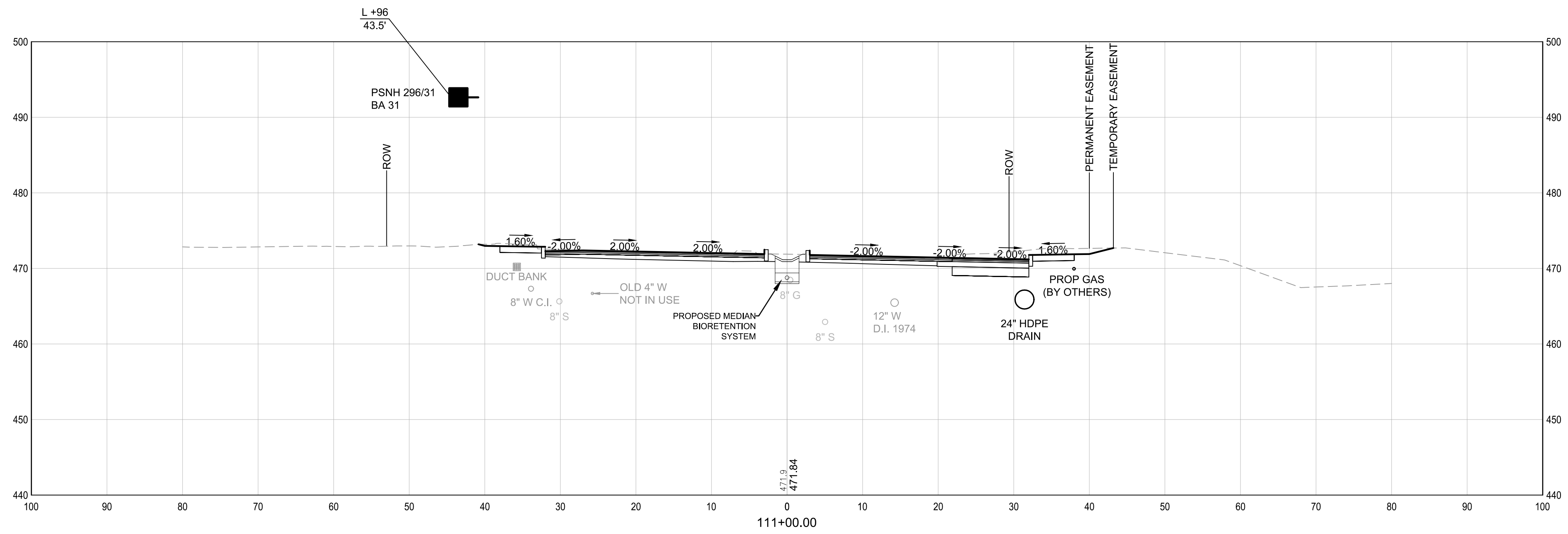



CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
WINCHESTER STREET CROSS SECTIONS STA 109+50.00 TO STA 109+80.00			
REV	DATE	DESCRIPTION	BY
 McFarland Johnson		53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301	
SCALE: AS SHOWN		DESIGN: BEP	XS-13 87 OF 143
DRAWN: MJF		PROJECT: 18022.01	
CHECKED: EWM		DATE: SEPTEMBER 2021	

M:\18022.01 KEENE WINCHESTER FINAL DRAWINGS\SHSHEET FILES\18022.01-XSEC.DWG

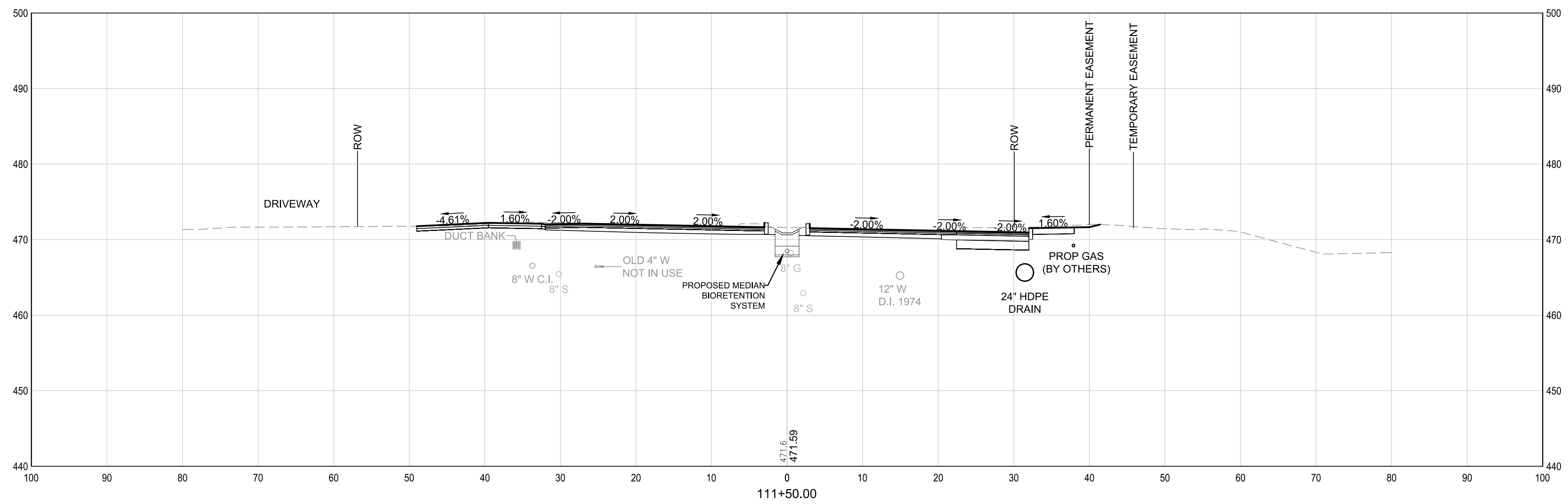
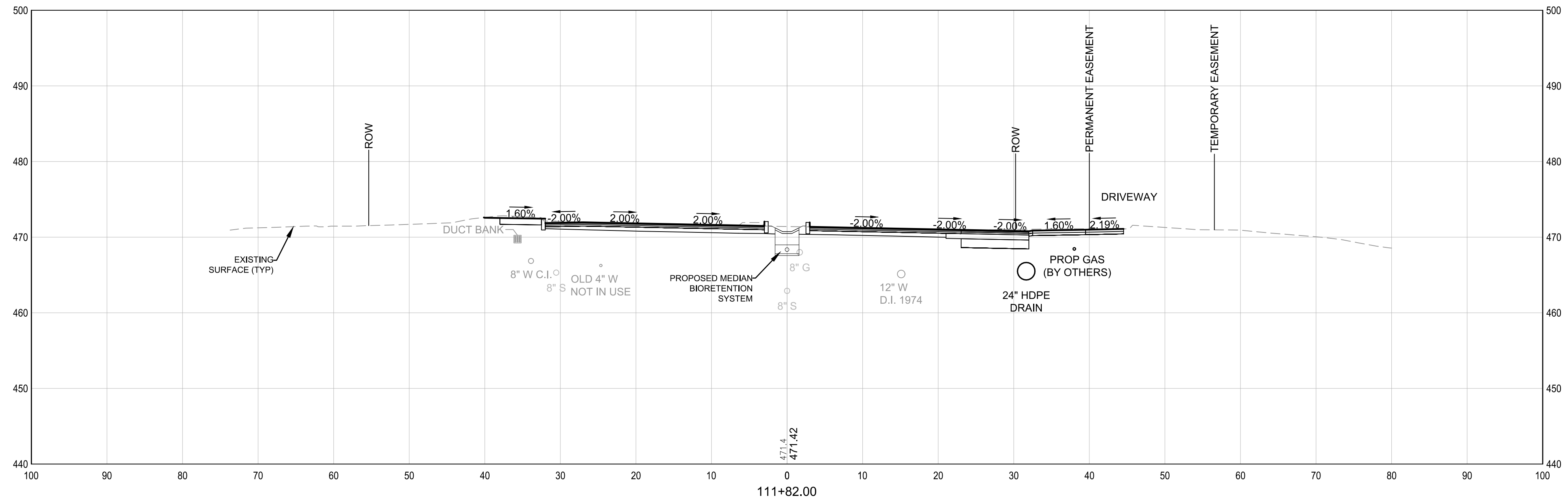



CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
WINCHESTER STREET CROSS SECTIONS STA 110+00.00 TO STA 110+50.00			
REV	DATE	DESCRIPTION	BY
 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301		SCALE: AS SHOWN	DESIGN: BEP
		DRAWN: MJF	PROJECT: 18022.01
CHECKED: EWM		DATE: SEPTEMBER 2021	XS-14 88 OF 143

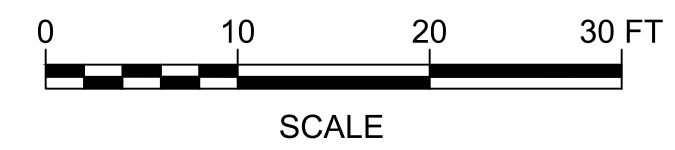
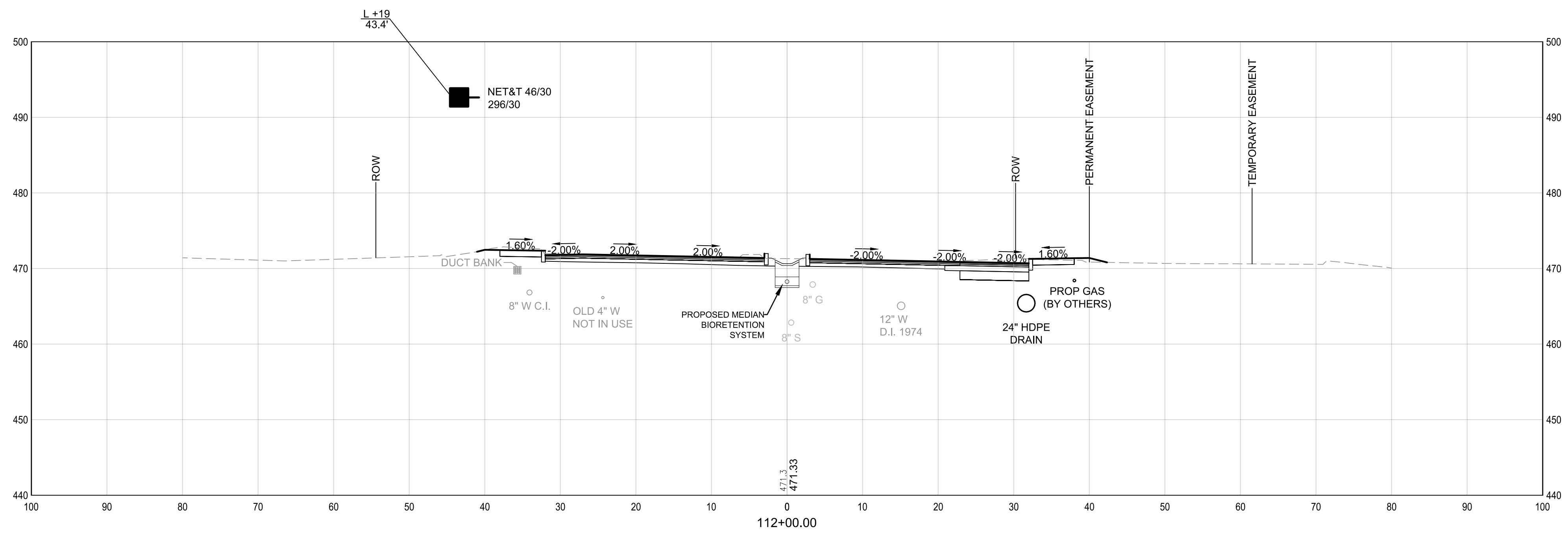
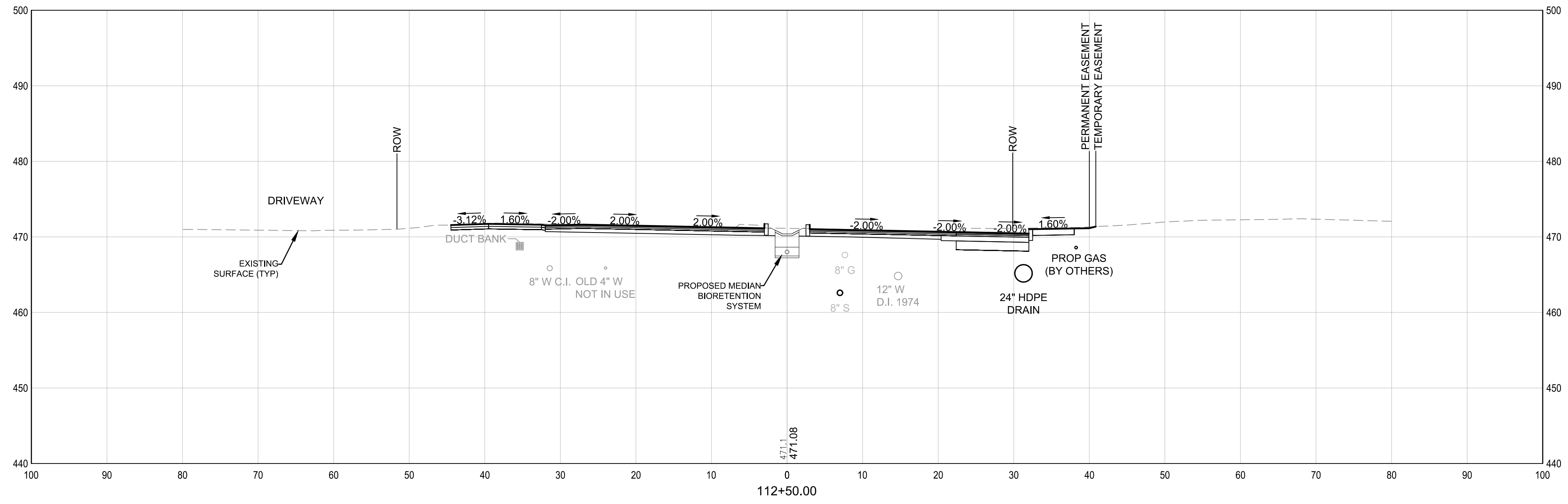



				CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION		
				WINCHESTER STREET CROSS SECTIONS STA 110+70.00 TO STA 111+00.00		
REV	DATE	DESCRIPTION	BY			
 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301				SCALE: AS SHOWN	DESIGN: BEP	
				DRAWN: MJF	PROJECT: 18022.01	XS-15
				CHECKED: EWM	DATE: SEPTEMBER 2021	

M:\18022.01 KEENE WINCHESTER FINAL DRAWINGS\SHSHEET FILES\18022.01-XSEC.DWG

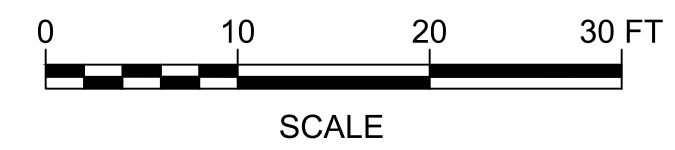
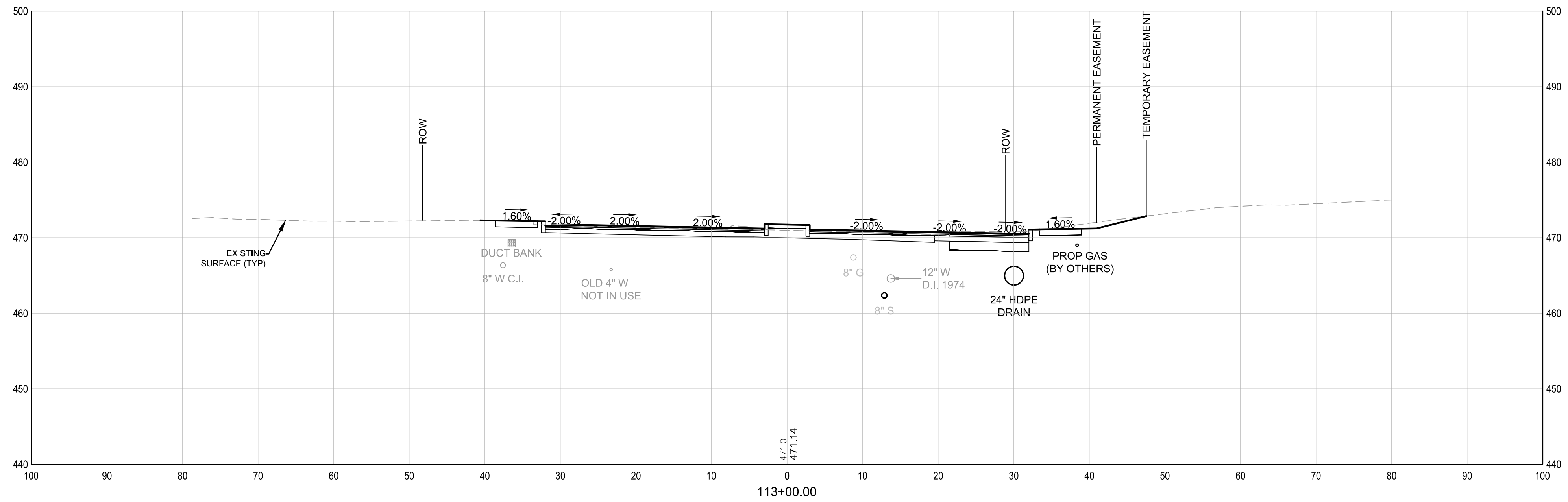
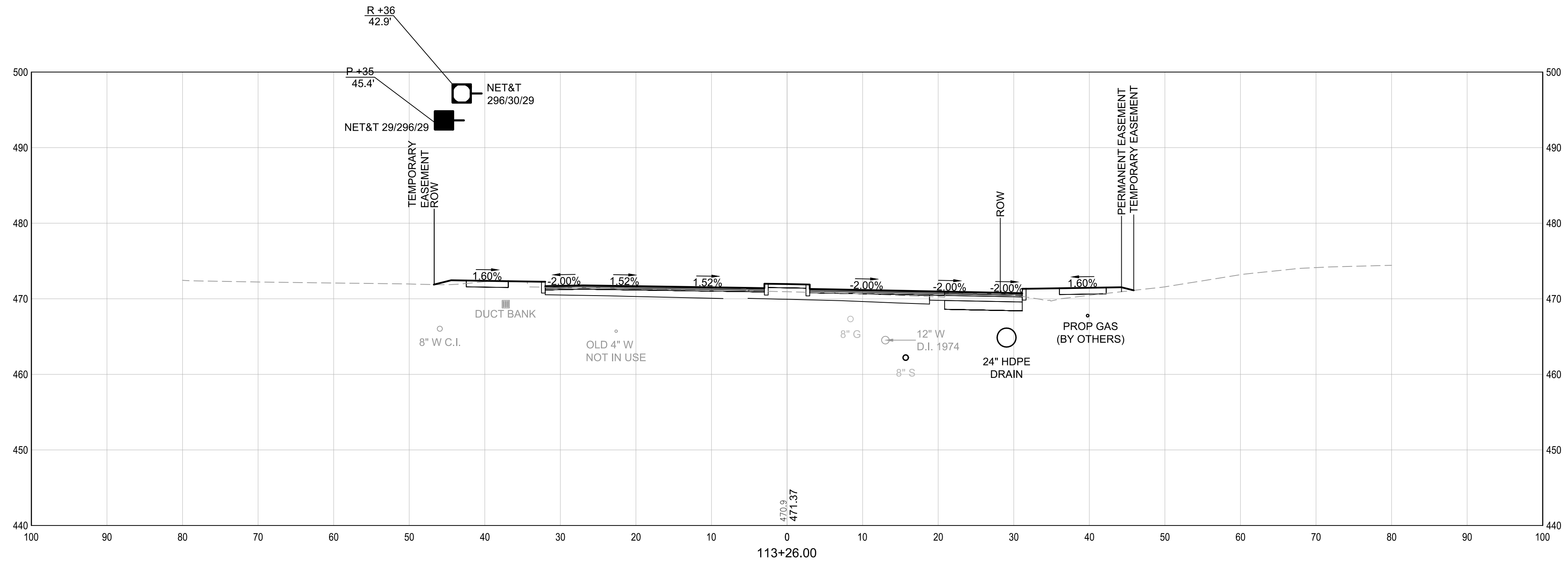


				CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION	
				WINCHESTER STREET CROSS SECTIONS STA 111+50.00 TO STA 111+82.00	
REV	DATE	DESCRIPTION	BY	SCALE: AS SHOWN	DESIGN: BEP
				DRAWN: MJF	PROJECT: 18022.01
				CHECKED: EWM	DATE: SEPTEMBER 2021
 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301				XS-16	
				90 OF 143	



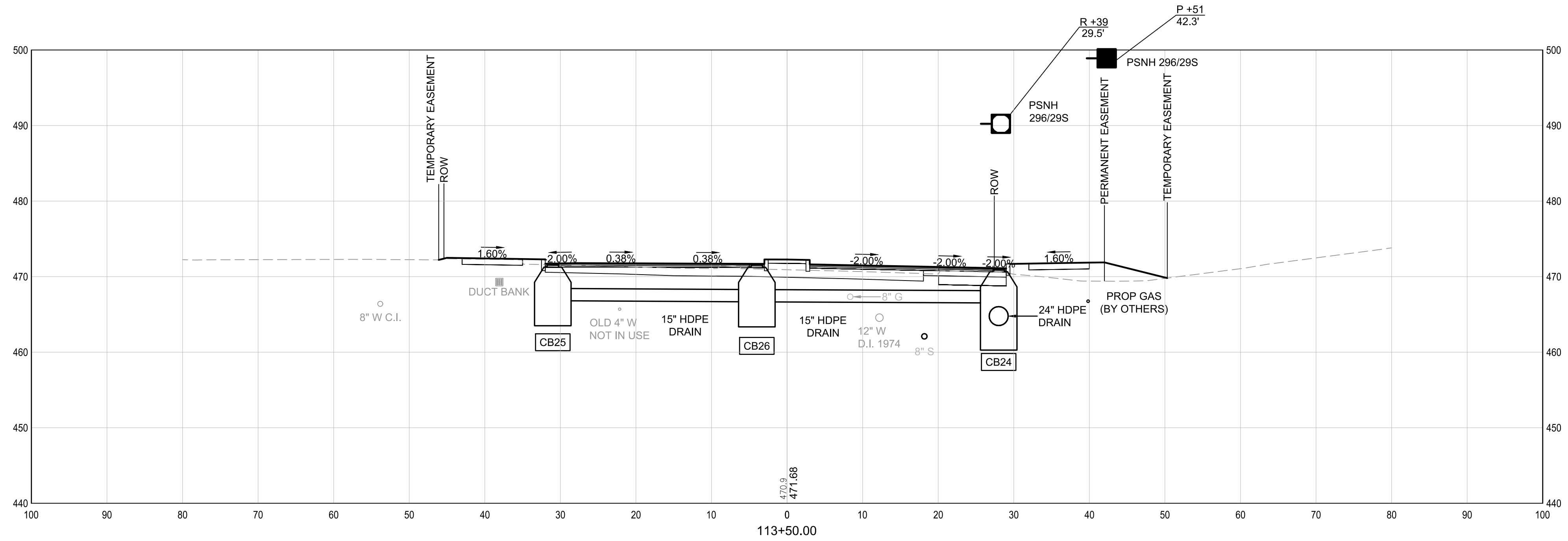
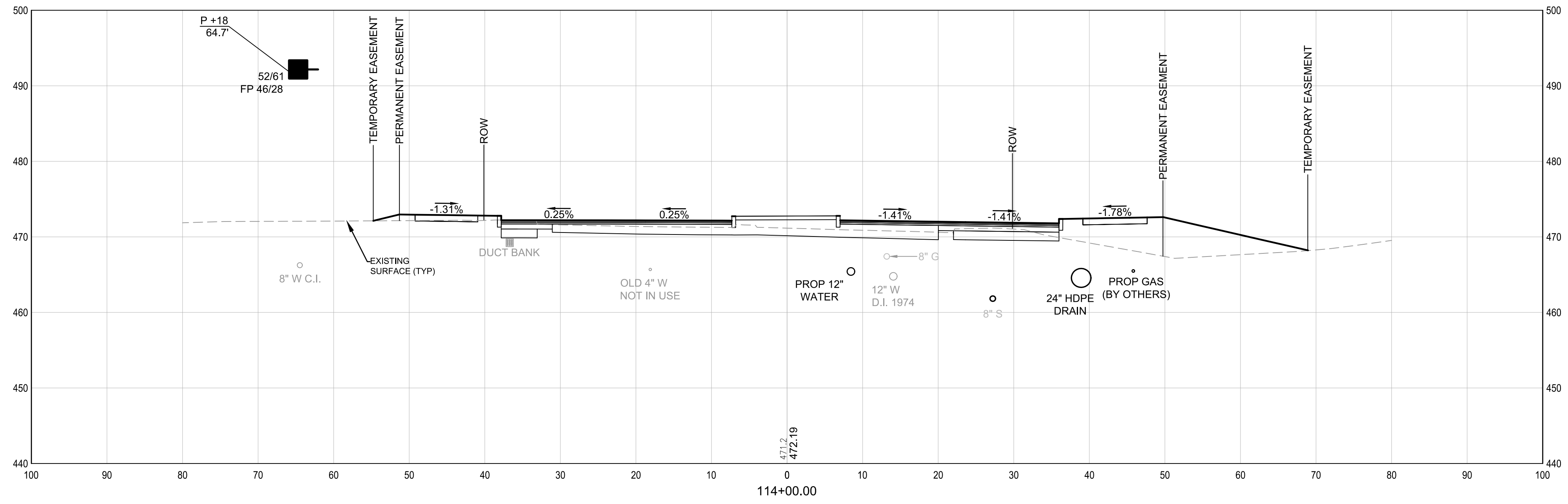
CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
WINCHESTER STREET CROSS SECTIONS STA 112+00.00 TO STA 112+50.00			
REV	DATE	DESCRIPTION	BY
 McFarland Johnson		53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301	
SCALE: AS SHOWN		DESIGN: BEP	XS-17 91 OF 143
DRAWN: MJF		PROJECT: 18022.01	
CHECKED: EWM		DATE: SEPTEMBER 2021	

M:\18022.01 KEENE WINCHESTER FINAL DRAWINGS\SHEET FILES\18022.01-XSEC.DWG



				CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION	
				WINCHESTER STREET CROSS SECTIONS STA 113+00.00 TO STA 113+26.00	
REV	DATE	DESCRIPTION	BY		
				McFarland Johnson	
				53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301	
		SCALE: AS SHOWN	DESIGN: BEP		
		DRAWN: MJF	PROJECT: 18022.01	XS-18	
		CHECKED: EWM	DATE: SEPTEMBER 2021	92 OF 143	


M:\18022.01 KEENE WINCHESTER FINAL DRAWINGS\SHSHEET FILES\18022.01-XSEC.DWG



REV	DATE	DESCRIPTION	BY

CITY OF KEENE
 KEENE, NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION

WINCHESTER STREET CROSS SECTIONS
STA 113+50.00 TO STA 114+00.00

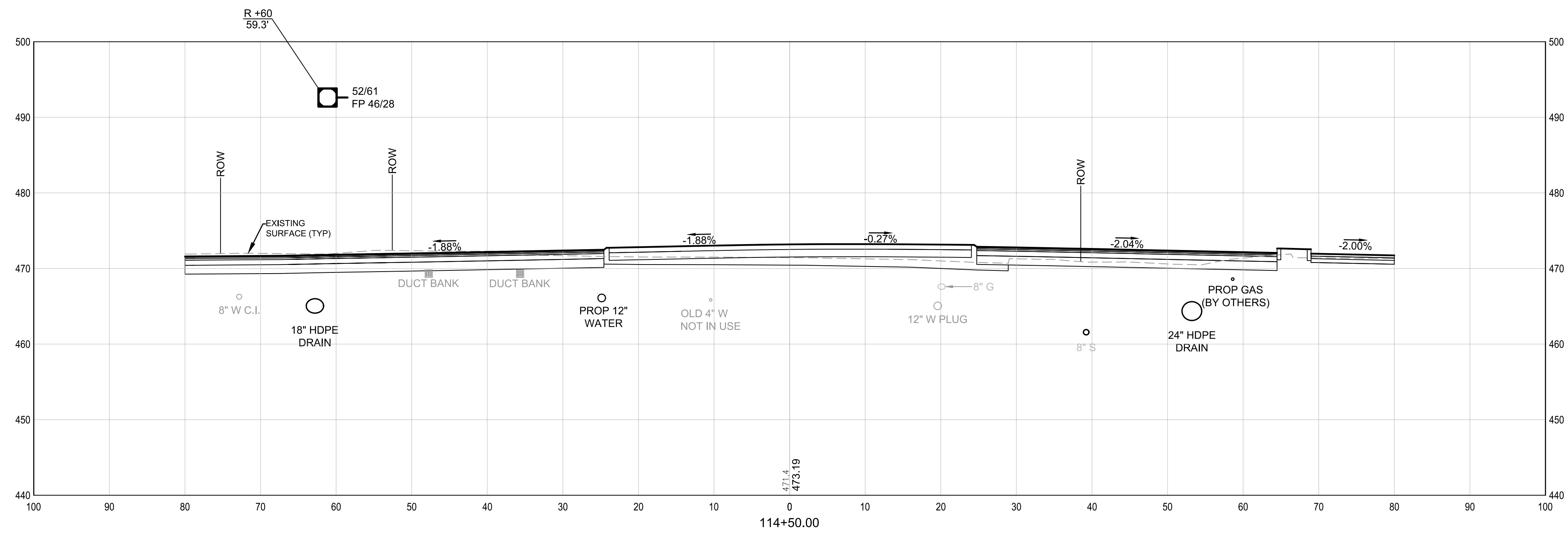
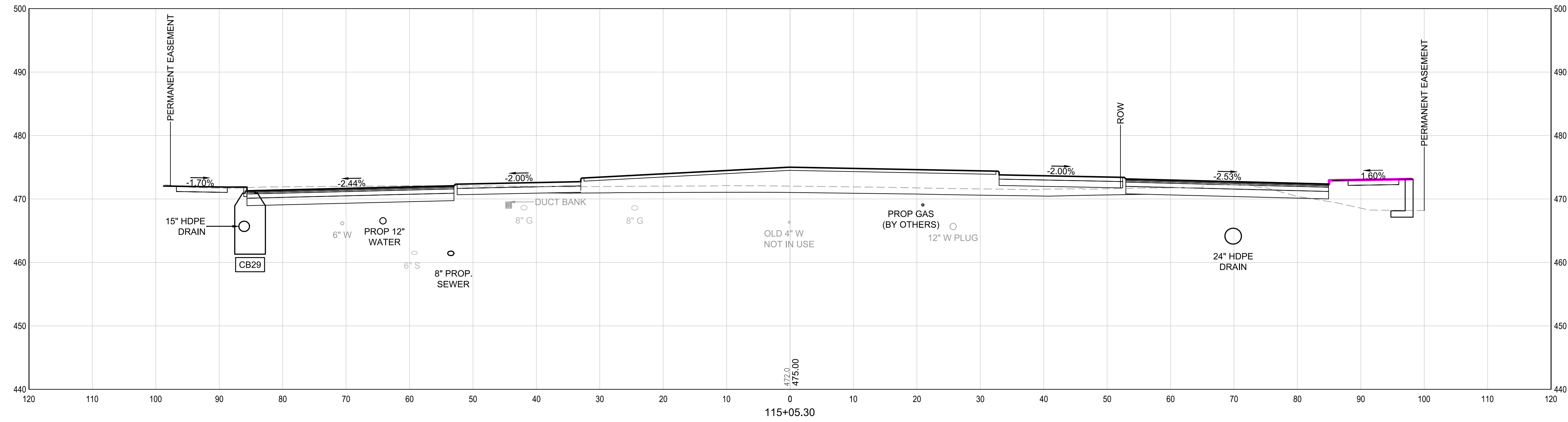


McFarland Johnson
 53 REGIONAL DRIVE
 CONCORD, NEW HAMPSHIRE 03301

SCALE: AS SHOWN DESIGN: BEP
 DRAWN: MJF PROJECT: 18022.01
 CHECKED: EWM DATE: SEPTEMBER 2021

XS-19
93 OF 143

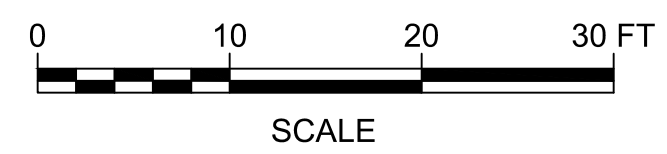
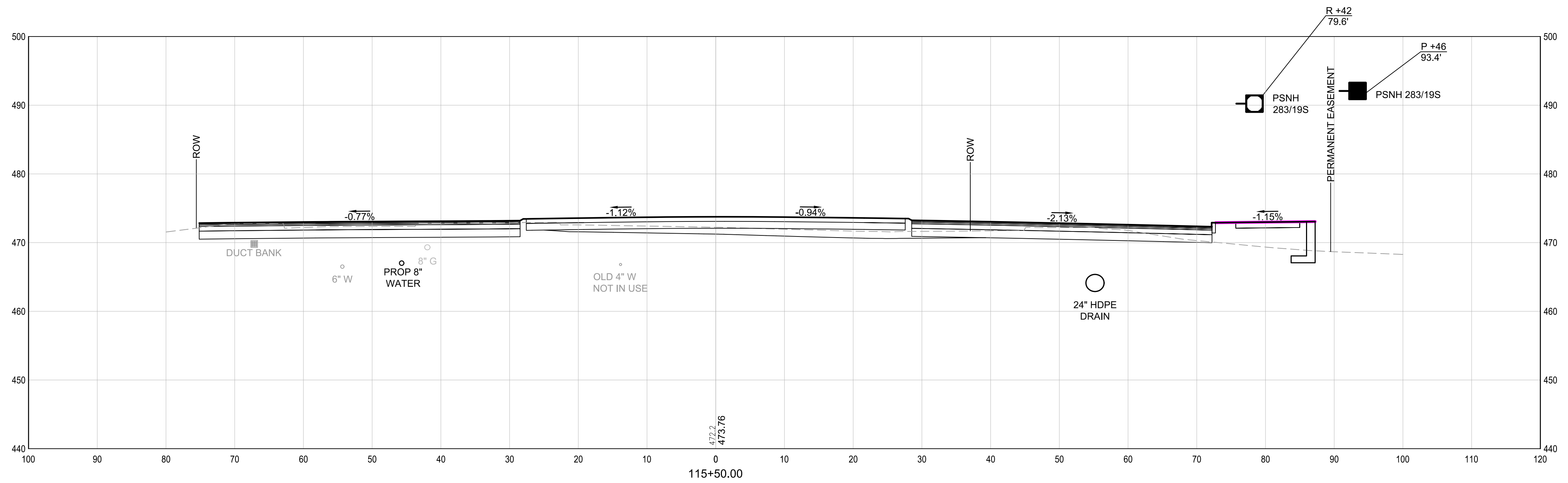
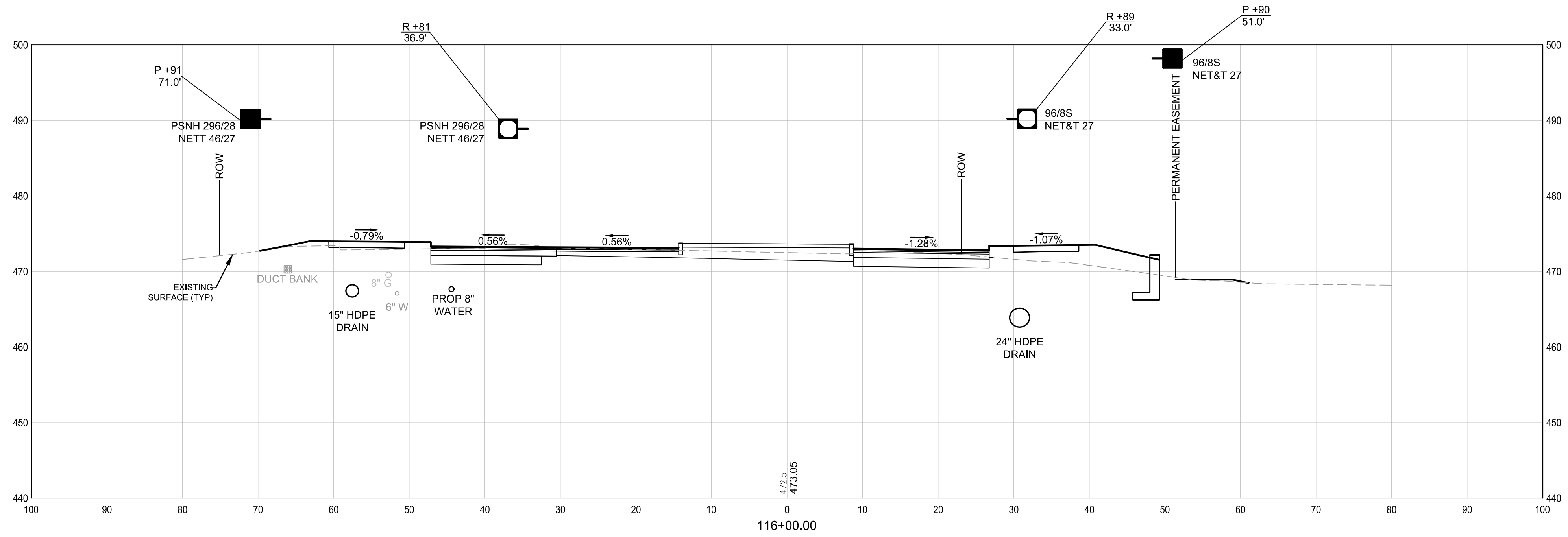
M:\18022.01 KEENE WINCHESTER FINAL\DRAWINGS\SHEET FILES\18022.01-XSEC.DWG



REV	DATE	DESCRIPTION	BY

CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
WINCHESTER STREET CROSS SECTIONS STA 114+50.00 TO STA 115+05.30			
SCALE: AS SHOWN	DESIGN: BEP	XS-20 94 OF 143	
DRAWN: MJF	PROJECT: 18022.01		
CHECKED: EWM	DATE: SEPTEMBER 2021		

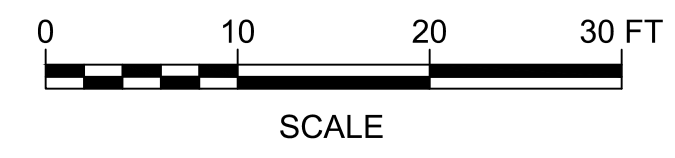
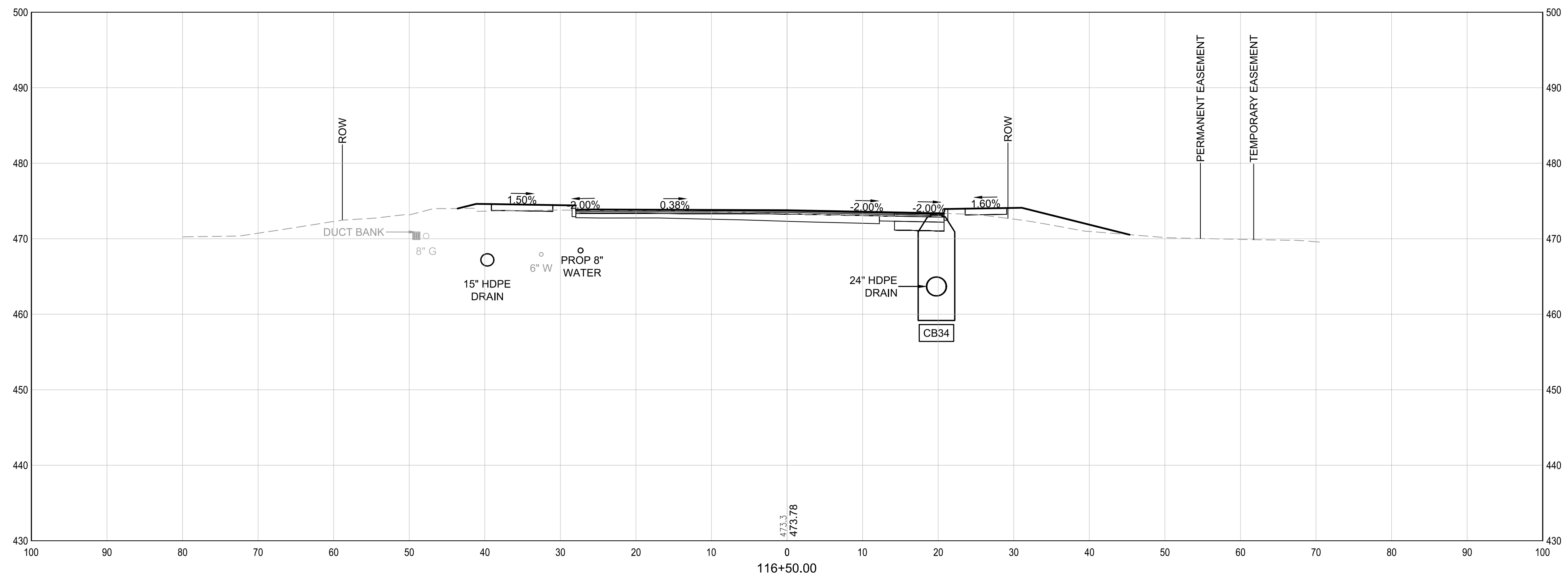
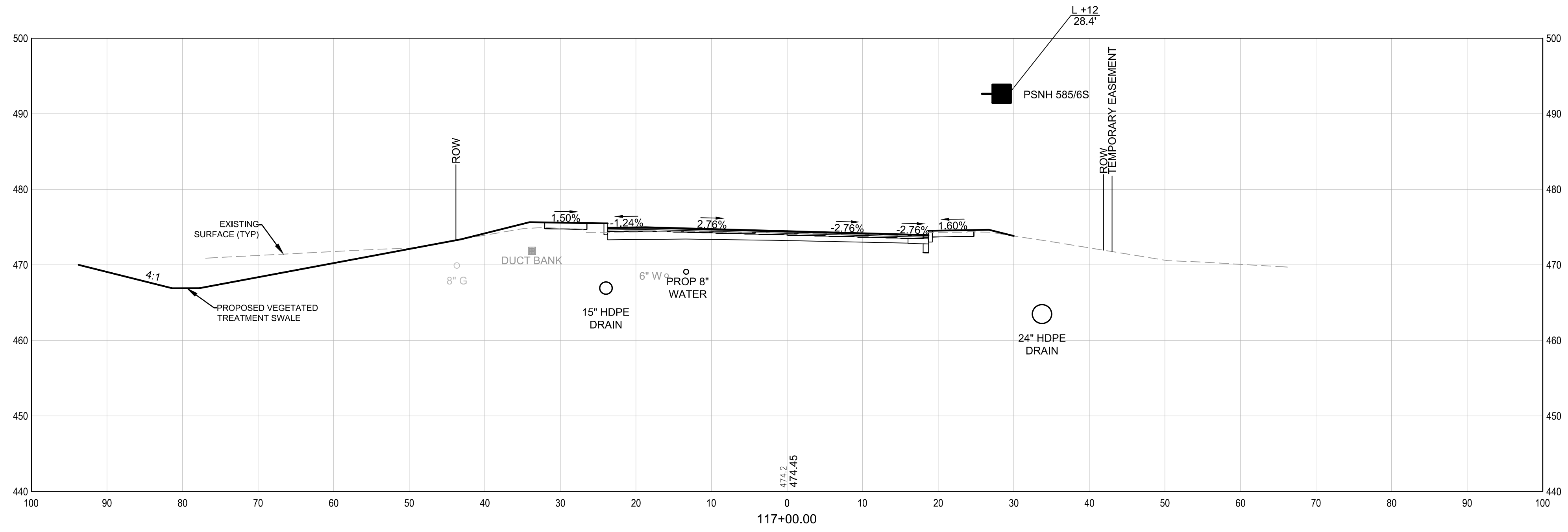
	McFarland Johnson
	53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301



REV	DATE	DESCRIPTION	BY

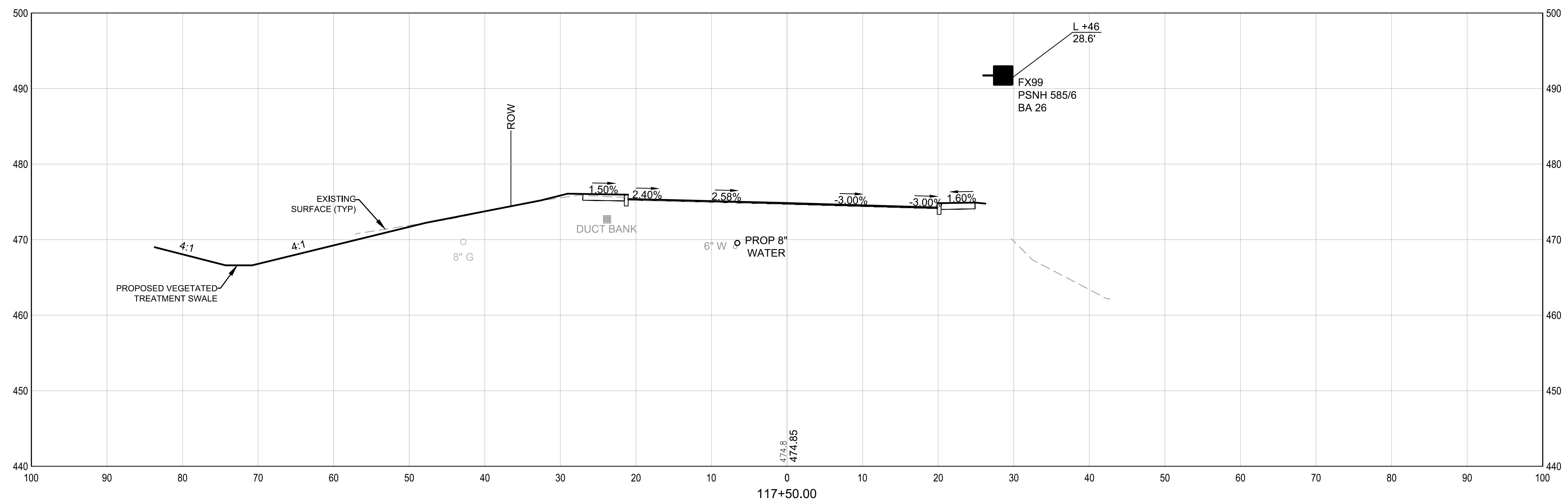
CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
WINCHESTER STREET CROSS SECTIONS STA 115+50.00 TO STA 116+00.00			
SCALE: AS SHOWN	DESIGN: BEP	XS-21 95 OF 143	
DRAWN: MJF	PROJECT: 18022.01		
CHECKED: EWM	DATE: SEPTEMBER 2021		




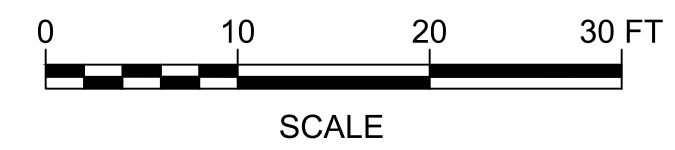
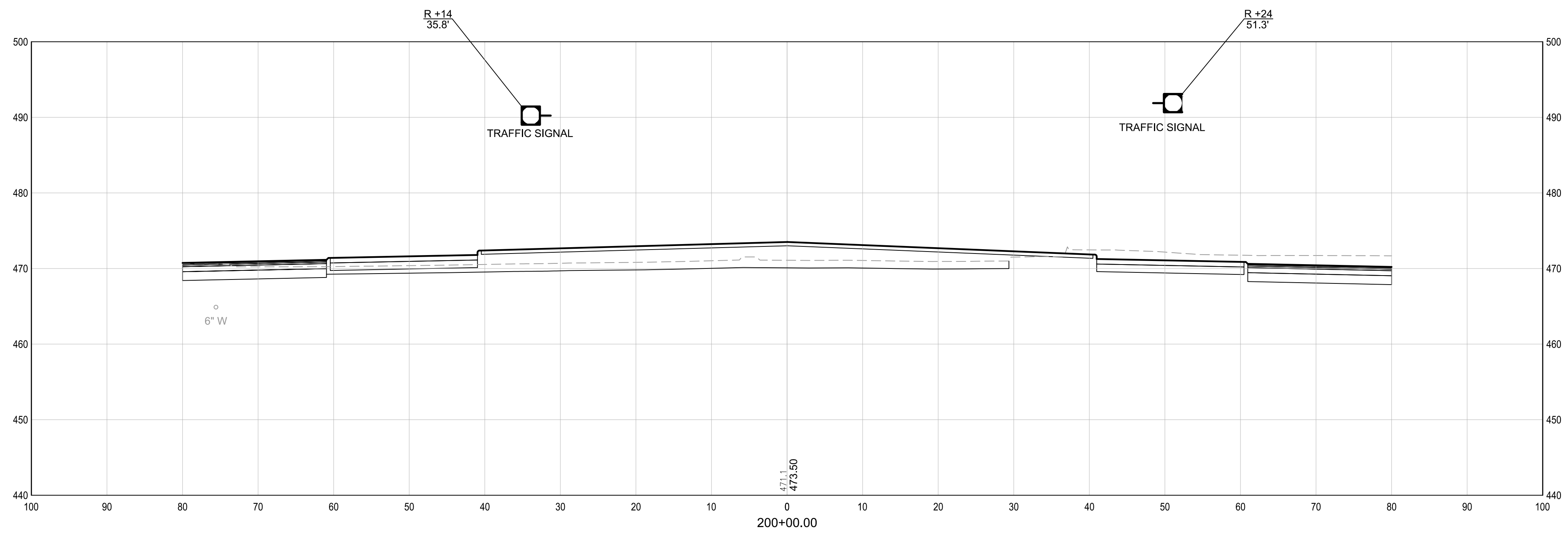
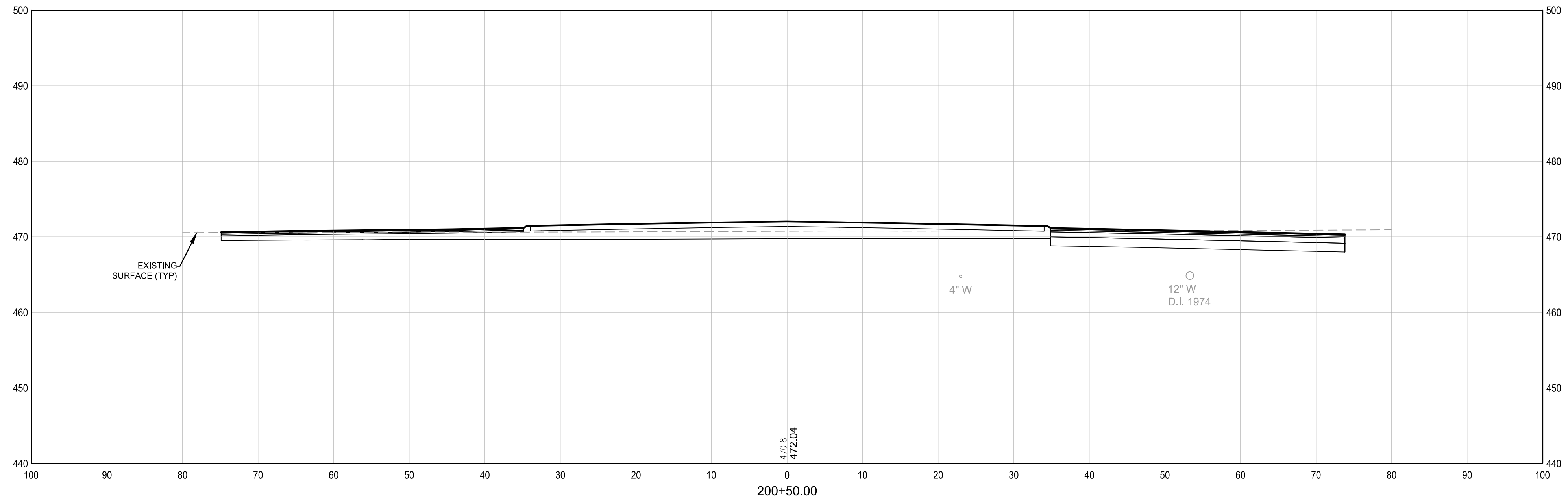


				CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION	
				WINCHESTER STREET CROSS SECTIONS STA 116+50.00 TO STA 117+00.00	
REV	DATE	DESCRIPTION	BY		
				McFarland Johnson	
				53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301	
SCALE: AS SHOWN		DESIGN: BEP		XS-22 96 OF 143	
DRAWN: MJF		PROJECT: 18022.01			
CHECKED: EWM		DATE: SEPTEMBER 2021			

M:\18022.01 KEENE WINCHESTER FINAL DRAWINGS\SHEET FILES\18022.01-XSEC.DWG



				CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION	
				WINCHESTER STREET CROSS SECTIONS STA 117+50.00	
REV	DATE	DESCRIPTION	BY	SCALE: AS SHOWN	DESIGN: BEP
				DRAWN: MJF	PROJECT: 18022.01
				CHECKED: EWM	DATE: SEPTEMBER 2021
 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301				XS-23 97 OF 143	



REV	DATE	DESCRIPTION	BY

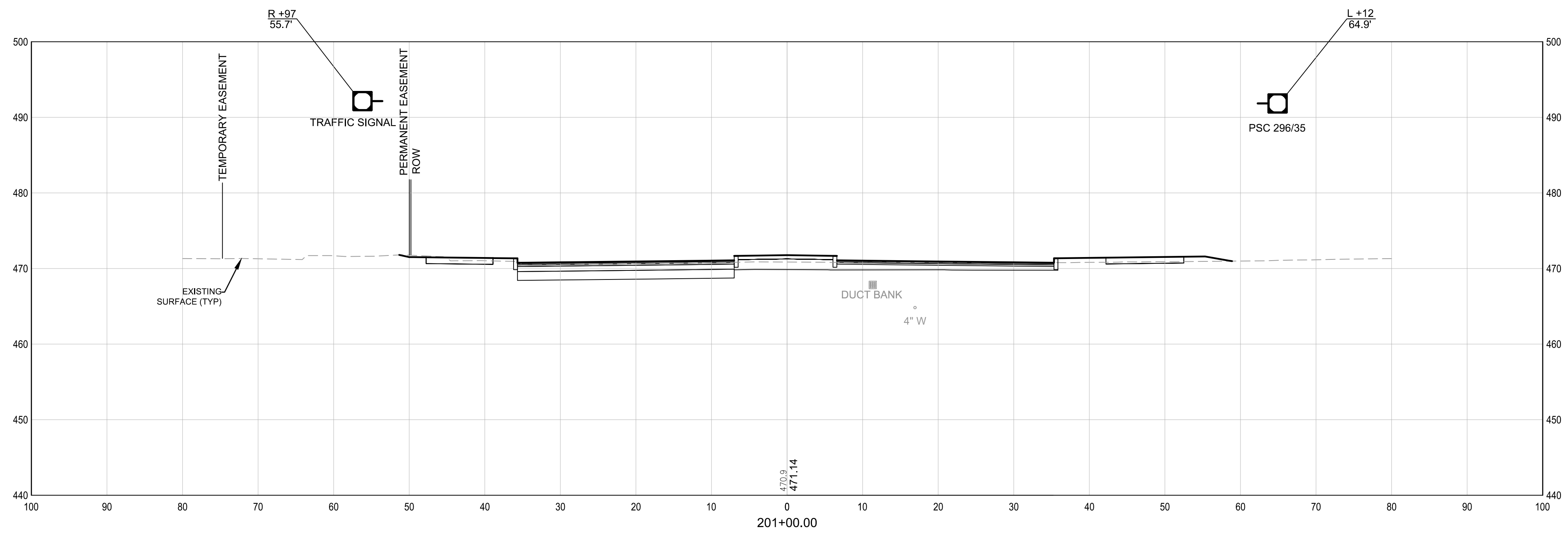
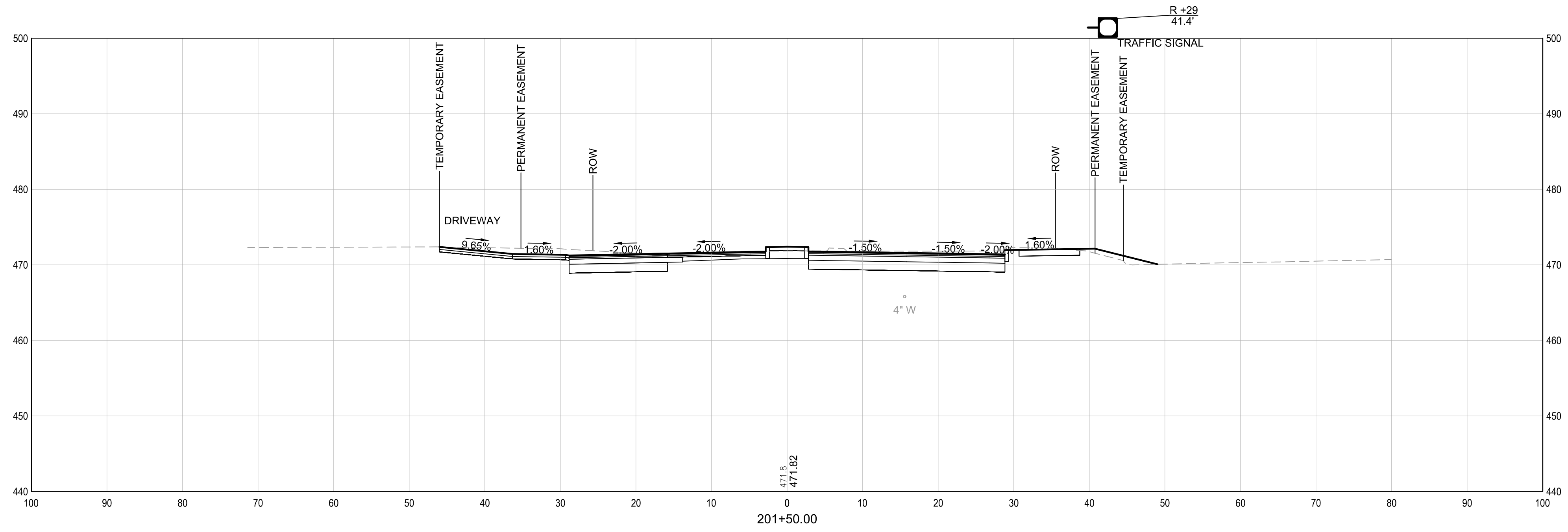
McFarland Johnson
 53 REGIONAL DRIVE
 CONCORD, NEW HAMPSHIRE 03301

CITY OF KEENE
 KEENE, NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION

KEY ROAD CROSS SECTIONS STA
200+00.00 TO STA 200+50.00

SCALE: AS SHOWN	DESIGN: BEP	XS-24 98 OF 143
DRAWN: MJF	PROJECT: 18022.01	
CHECKED: EWM	DATE: SEPTEMBER 2021	

M:\18022.01 KEENE WINCHESTER FINAL\DRAWINGS\SHEET FILES\18022.01-XSEC.DWG

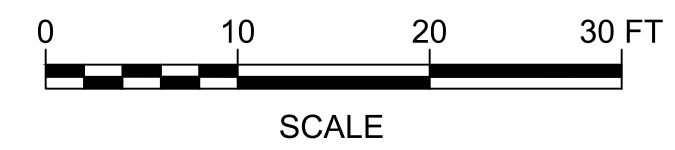
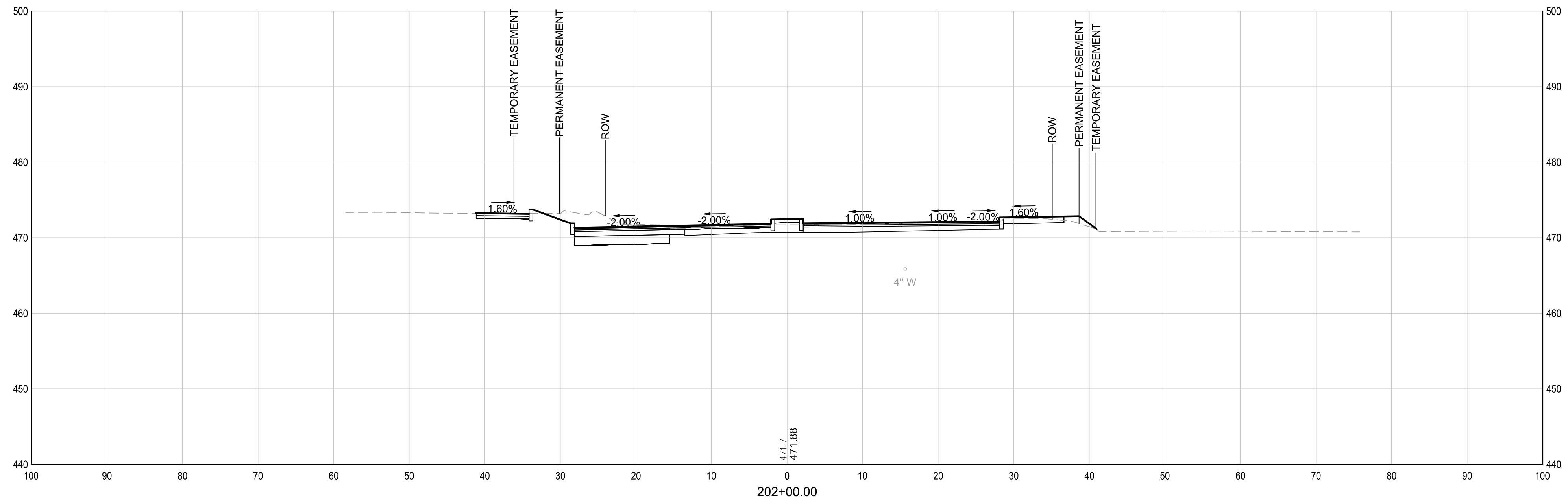
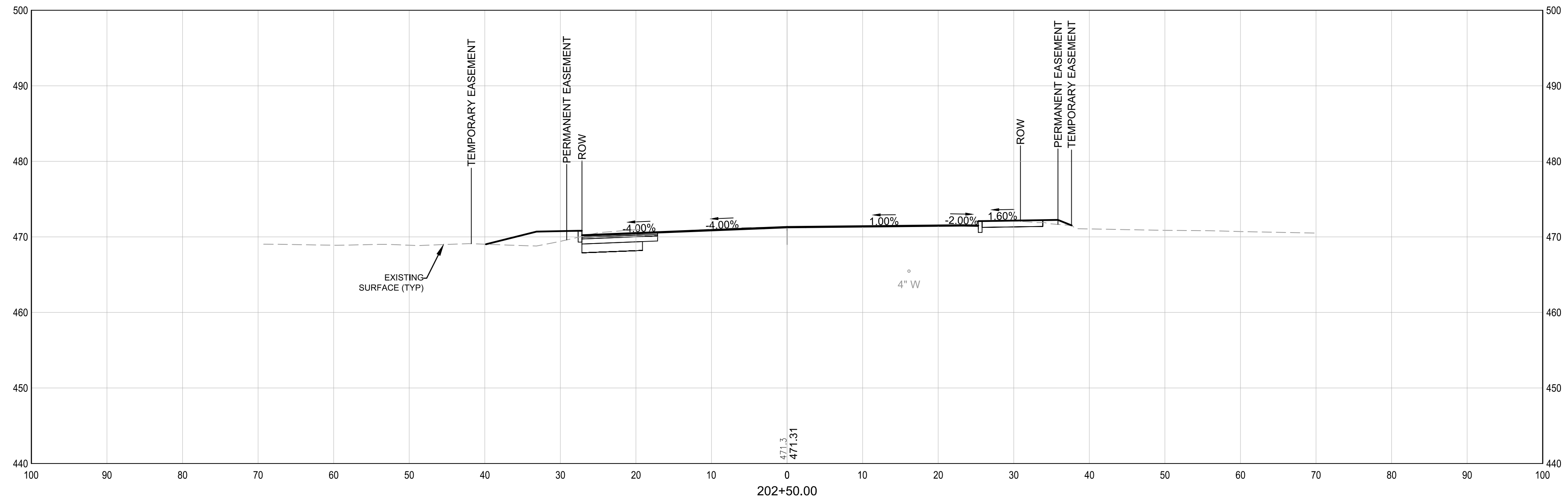



CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
KEY ROAD CROSS SECTIONS STA 201+00.00 TO STA 201+50.00			
SCALE: AS SHOWN	DESIGN: BEP	XS-25 99 OF 143	
DRAWN: MJF	PROJECT: 18022.01		
CHECKED: EWM	DATE: SEPTEMBER 2021		

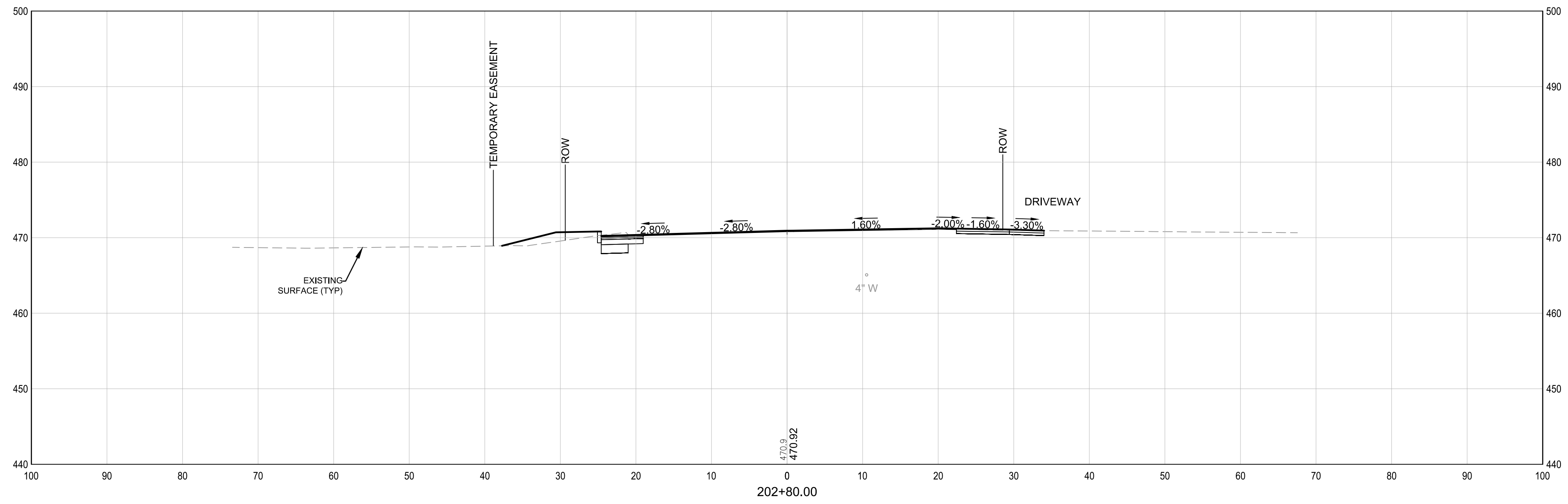
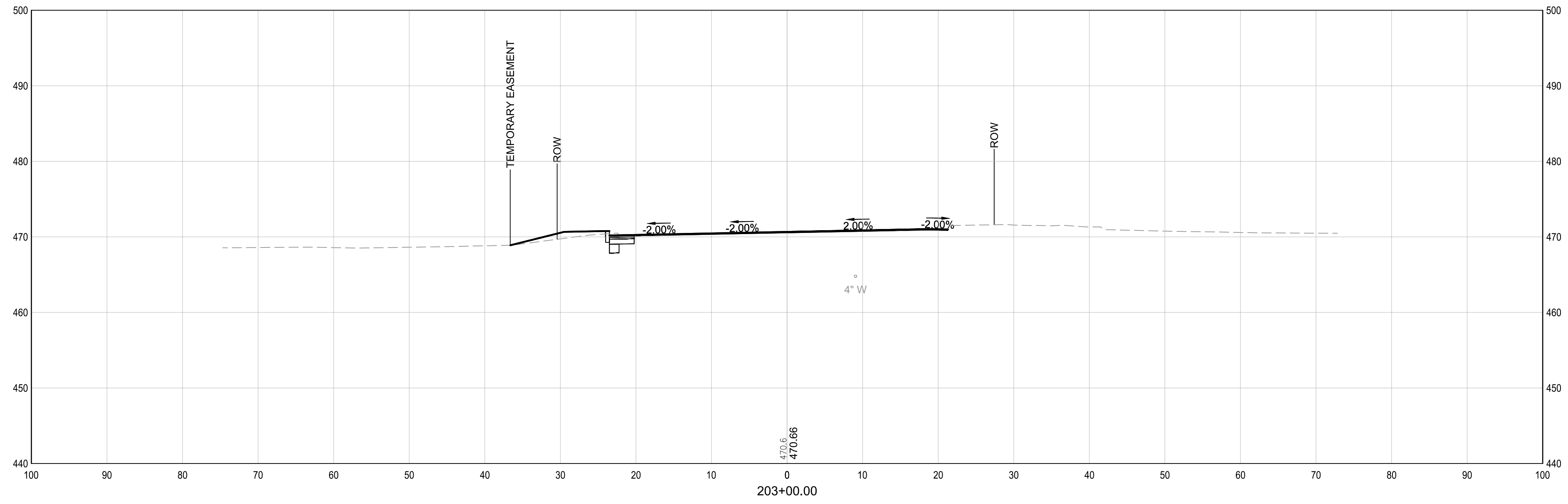
McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

REV	DATE	DESCRIPTION	BY

M:\18022.01 KEENE WINCHESTER FINAL\DRAWINGS\SHEET FILES\18022.01-XSEC.DWG



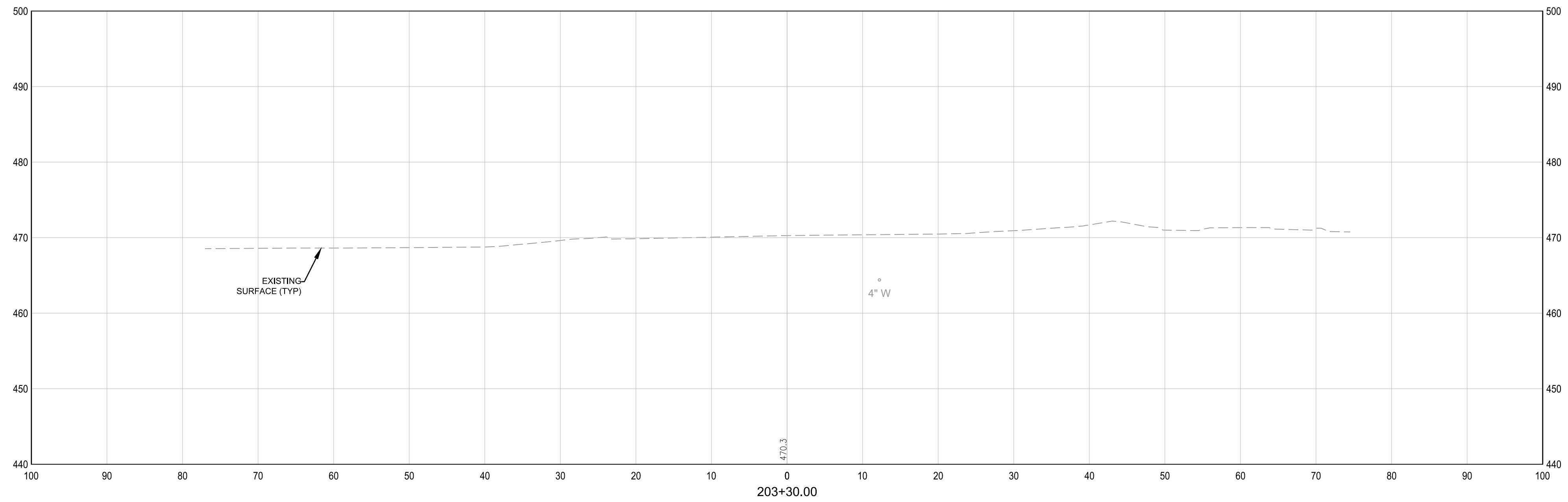
				CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION	
				KEY ROAD CROSS SECTIONS STA 202+00.00 TO STA 202+50.00	
REV	DATE	DESCRIPTION	BY	SCALE: AS SHOWN	DESIGN: BEP
				DRAWN: MJF	PROJECT: 18022.01
				CHECKED: EWM	DATE: SEPTEMBER 2021
 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301				XS-26	
				100 OF 143	




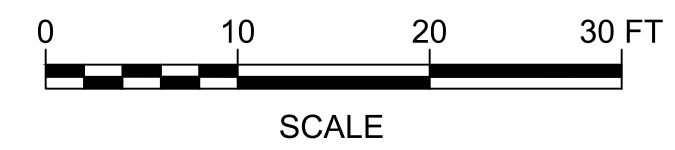
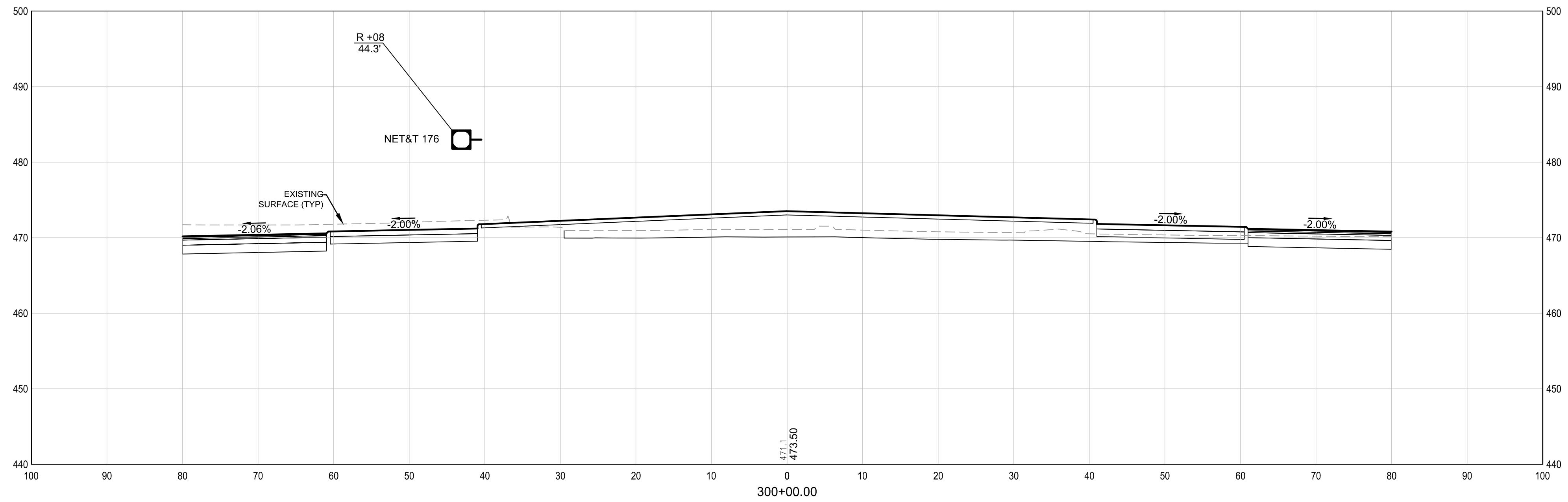
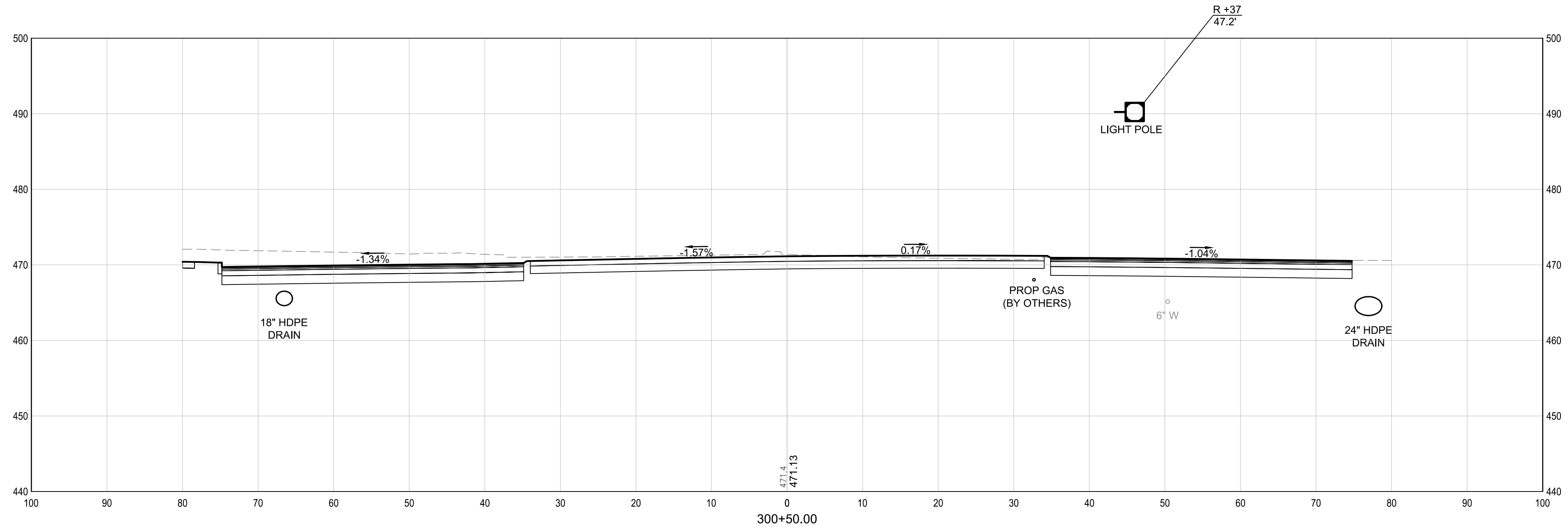
CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
KEY ROAD CROSS SECTIONS STA 202+80.00 TO STA 203+00.00			
SCALE: AS SHOWN	DESIGN: BEP	XS-27 101 OF 143	
DRAWN: MJF	PROJECT: 18022.01		
CHECKED: EWM	DATE: SEPTEMBER 2021		

REV	DATE	DESCRIPTION	BY

McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301



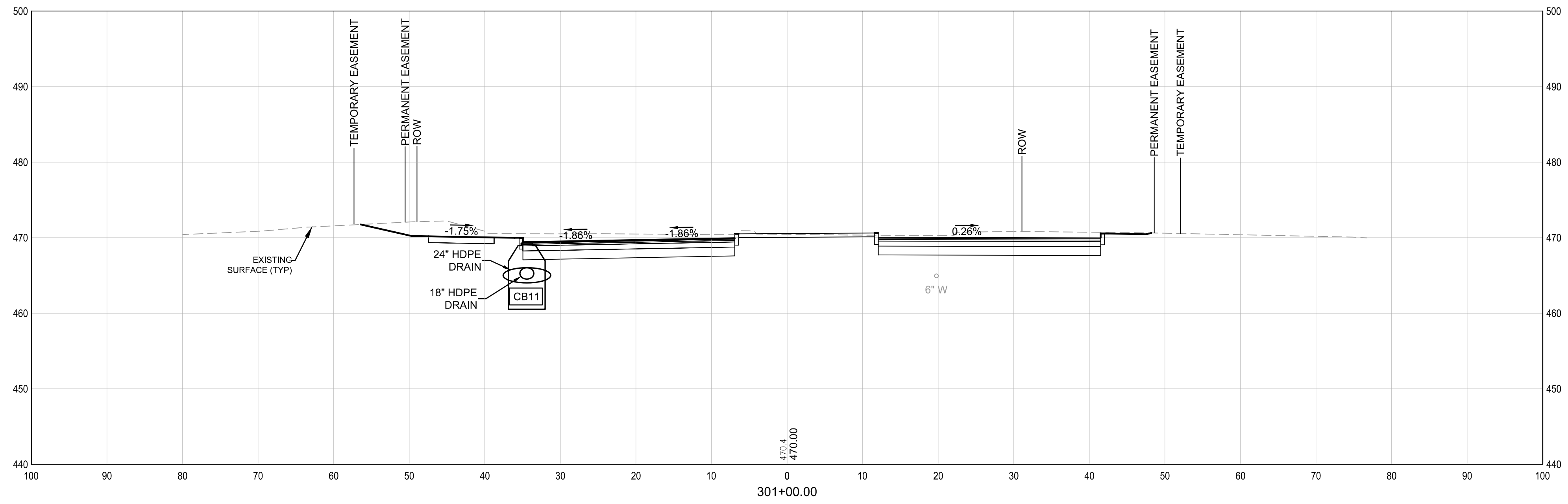
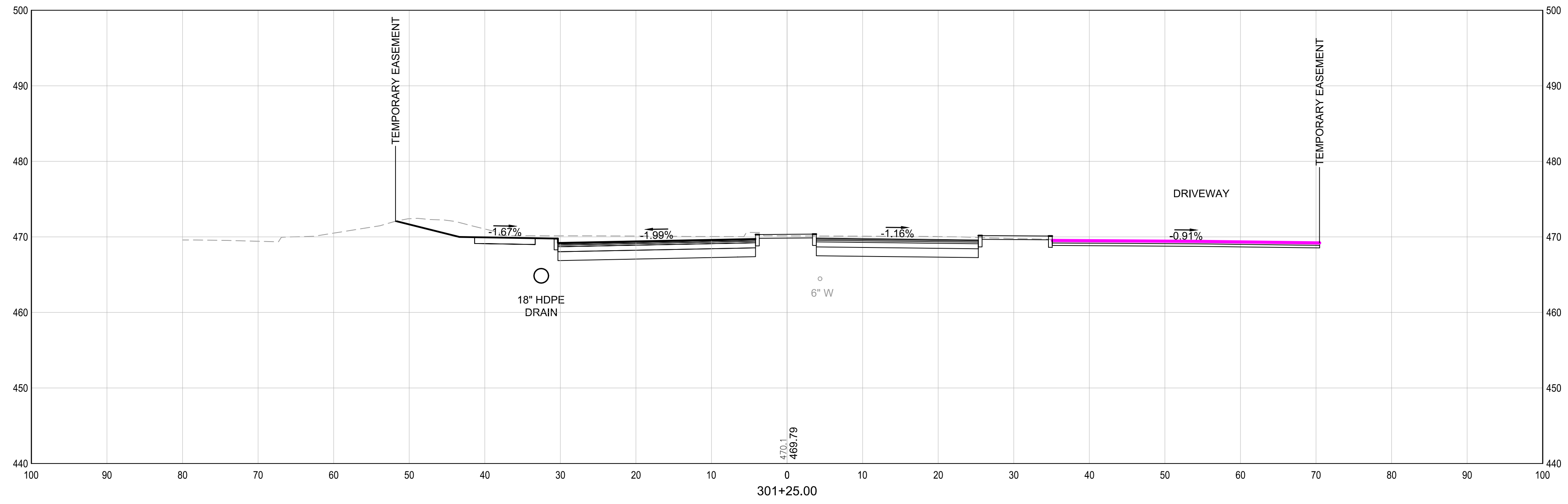
				CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION	
				KEY ROAD CROSS SECTIONS STA 203+30.00	
REV	DATE	DESCRIPTION	BY	SCALE: AS SHOWN	DESIGN: BEP
				DRAWN: MJF	PROJECT: 18022.01
				CHECKED: EWM	DATE: SEPTEMBER 2021
 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301				XS-28 102 OF 143	




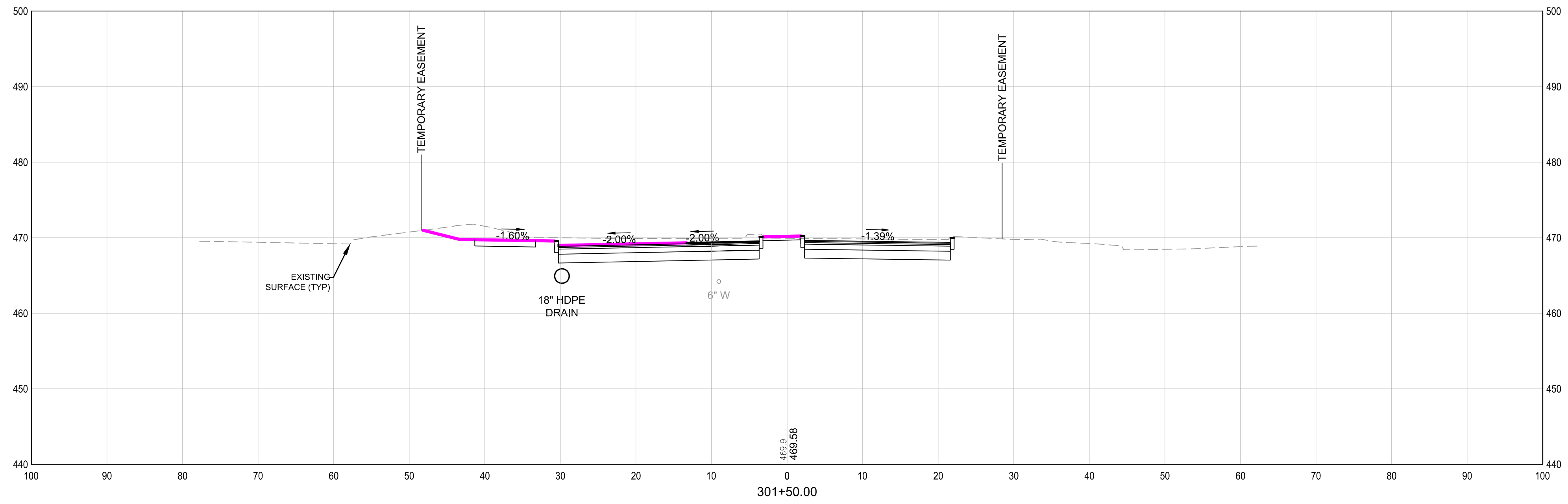
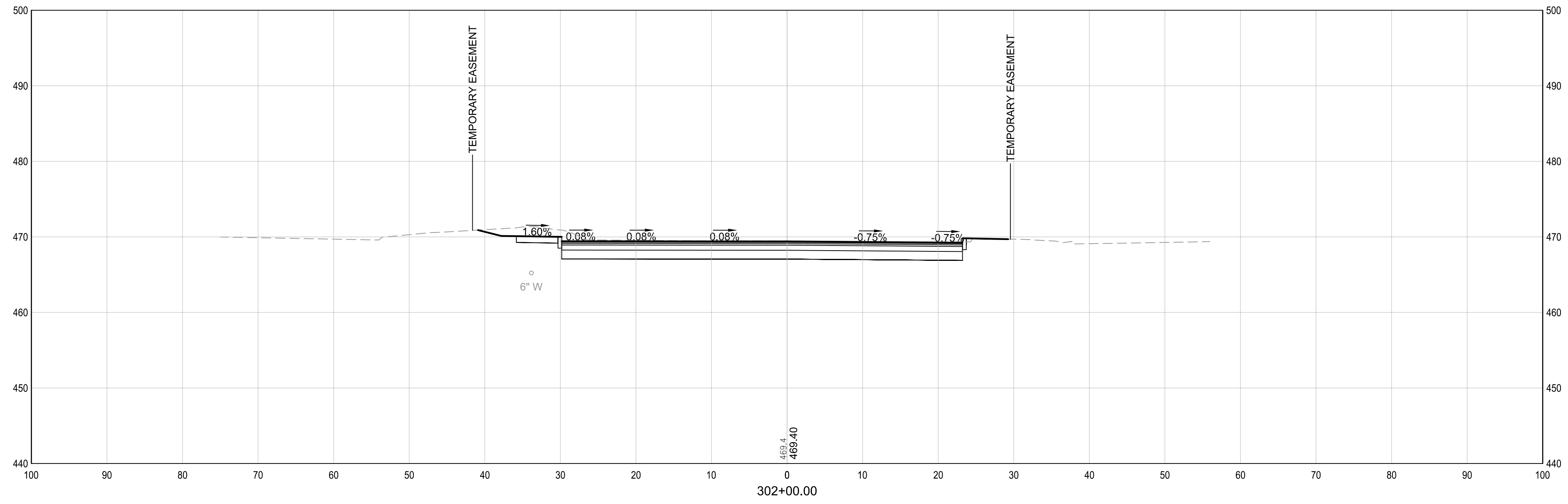
CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
RIVERSIDE PLAZA CROSS SECTIONS STA 300+00.00 TO STA 300+50.00			
SCALE: AS SHOWN	DESIGN: BEP	XS-29 103 OF 143	
DRAWN: MJF	PROJECT: 18022.01		
CHECKED: EWM	DATE: SEPTEMBER 2021		


McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

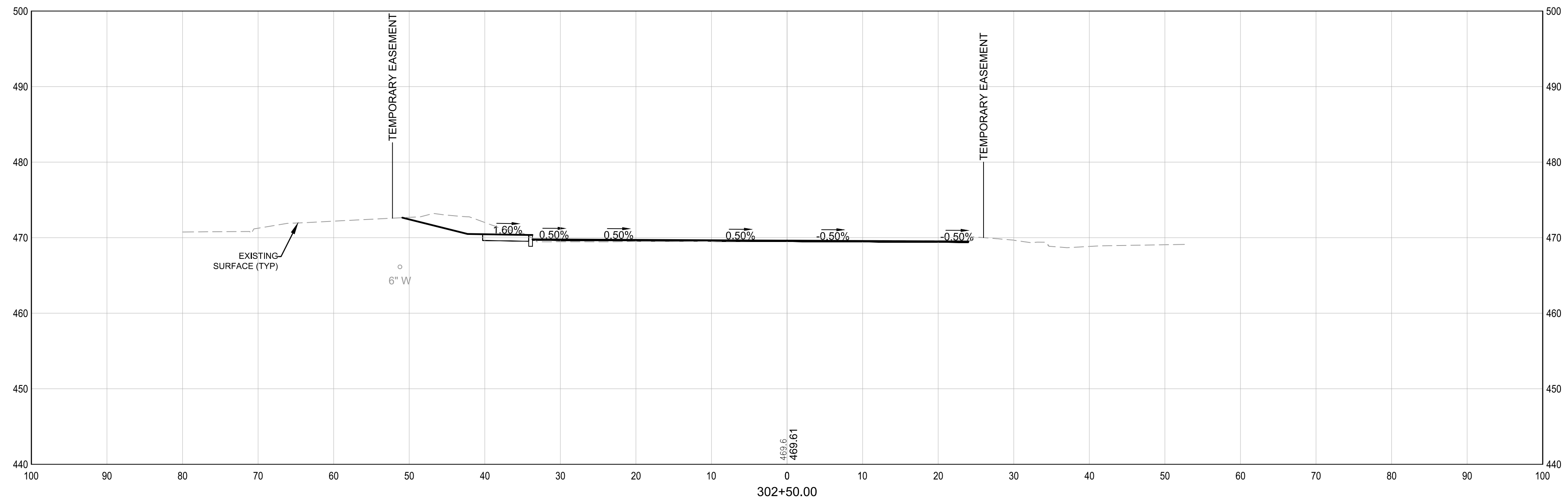
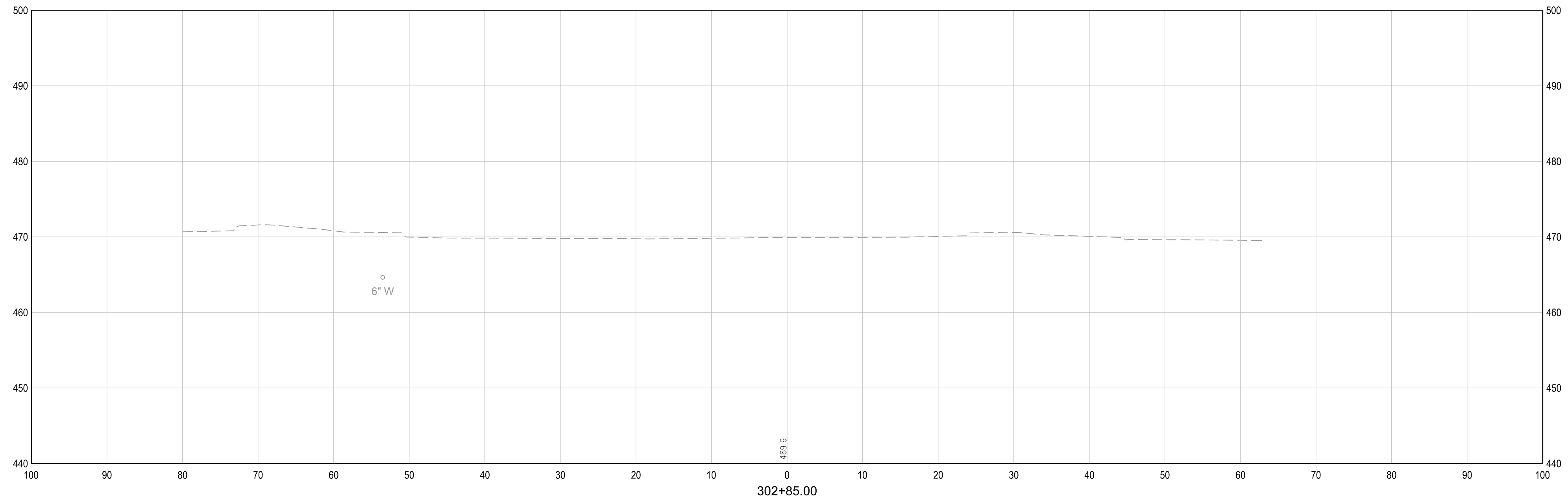
REV	DATE	DESCRIPTION	BY




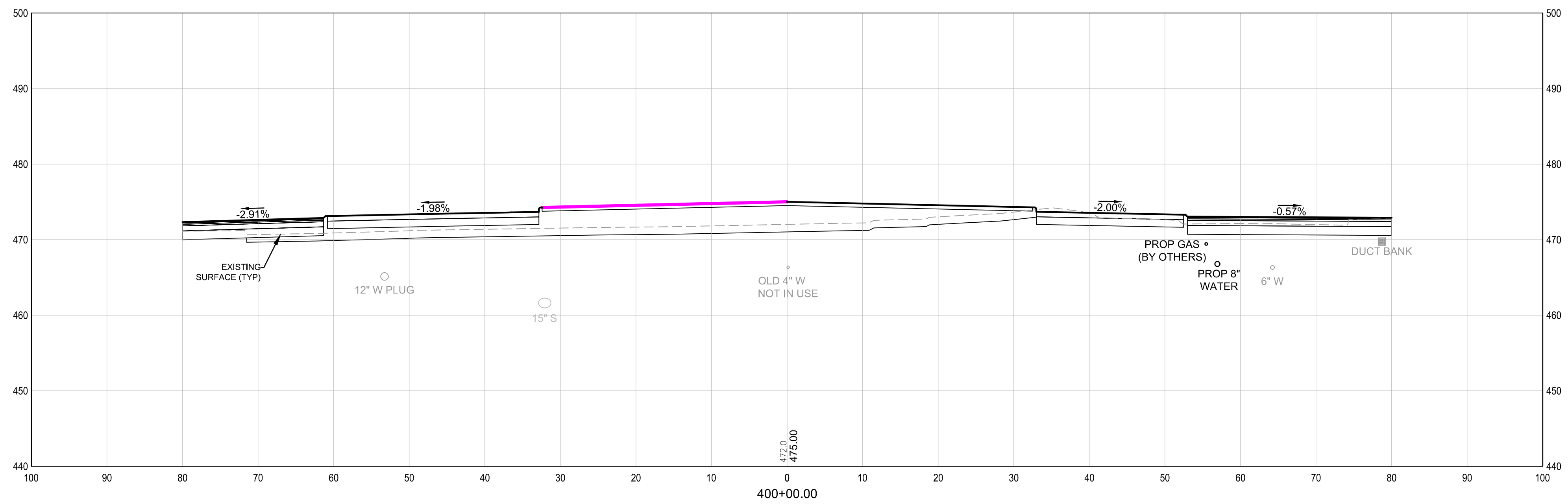
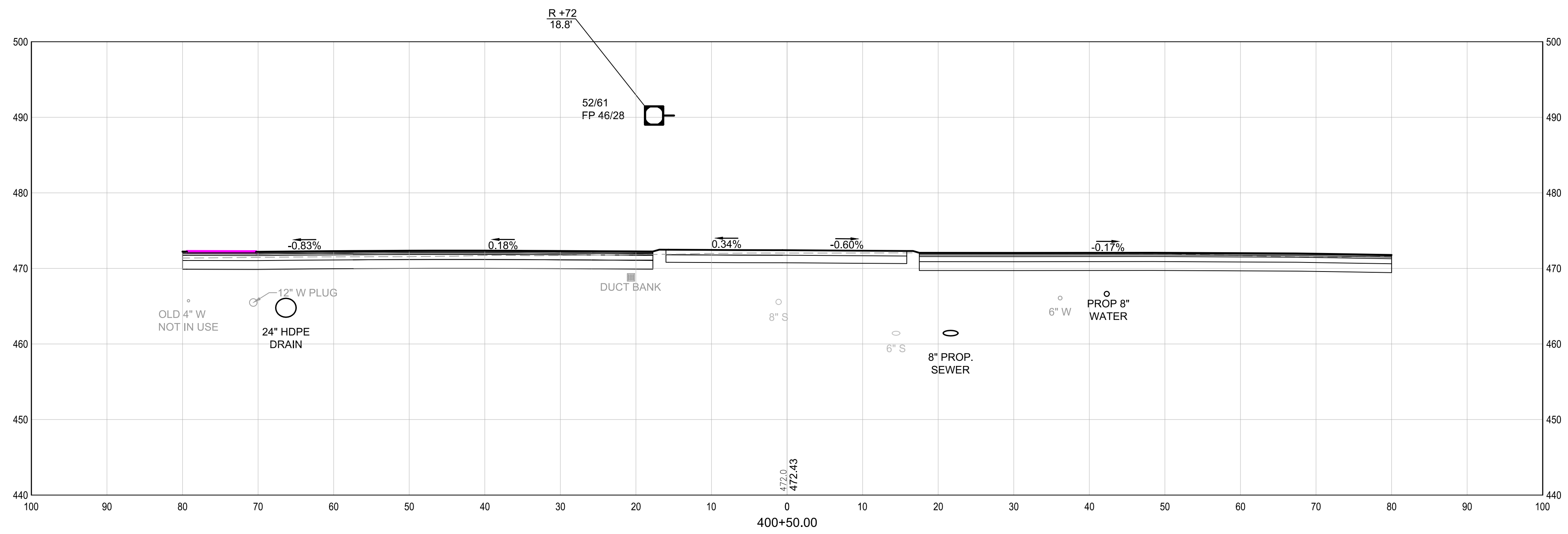
CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
RIVERSIDE PLAZA CROSS SECTIONS STA 301+00.00 TO STA 301+25.00			
REV	DATE	DESCRIPTION	BY
		McFarland Johnson	
53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301		SCALE: AS SHOWN	DESIGN: BEP
		DRAWN: MJF	PROJECT: 18022.01
		CHECKED: EWM	DATE: SEPTEMBER 2021
			XS-30 104 OF 143




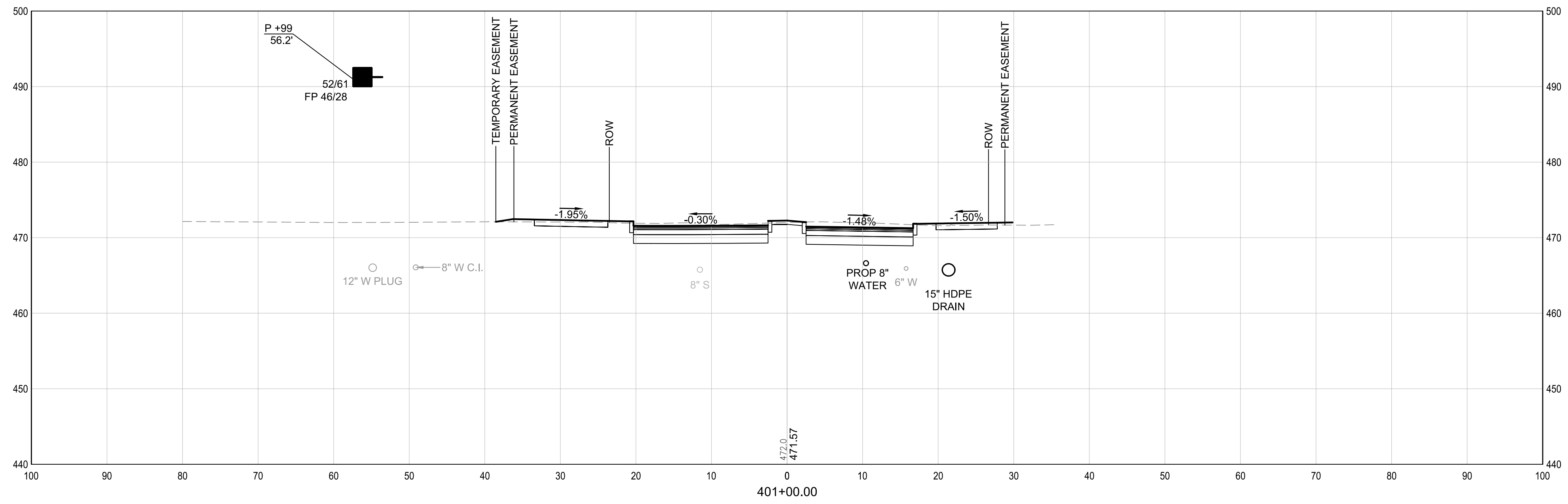
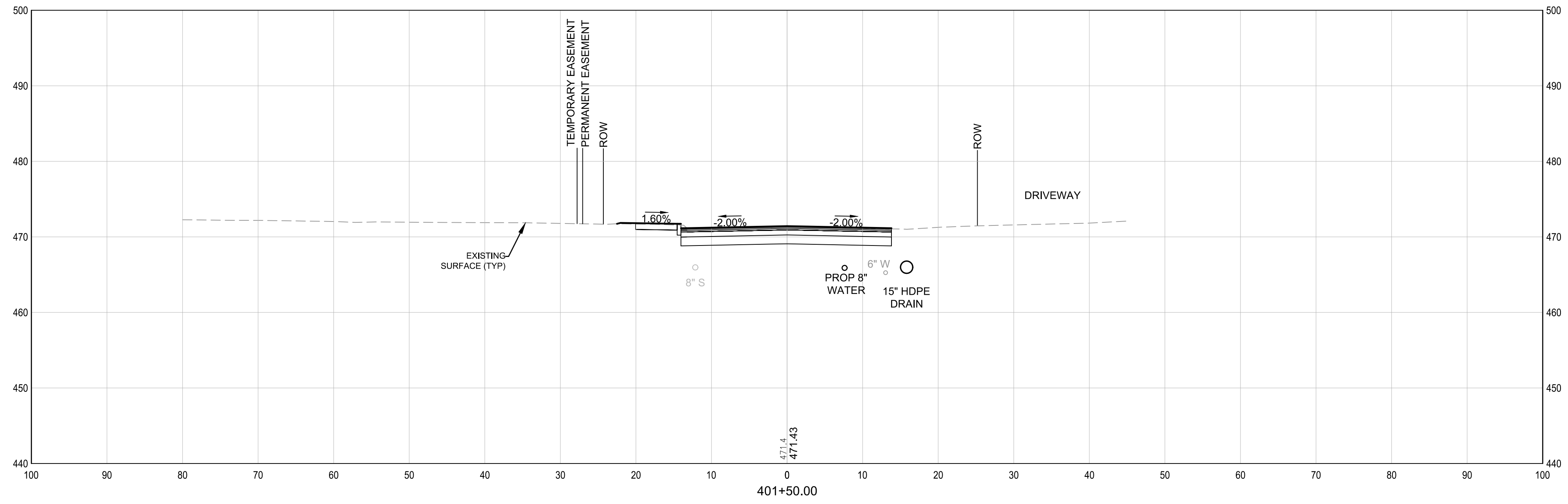
CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
RIVERSIDE PLAZA CROSS SECTIONS STA 301+50.00 TO STA 302+00.00			
REV	DATE	DESCRIPTION	BY
 McFarland Johnson		53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301	
SCALE: AS SHOWN		DESIGN: BEP	XS-31 105 OF 143
DRAWN: MJF		PROJECT: 18022.01	
CHECKED: EWM		DATE: SEPTEMBER 2021	




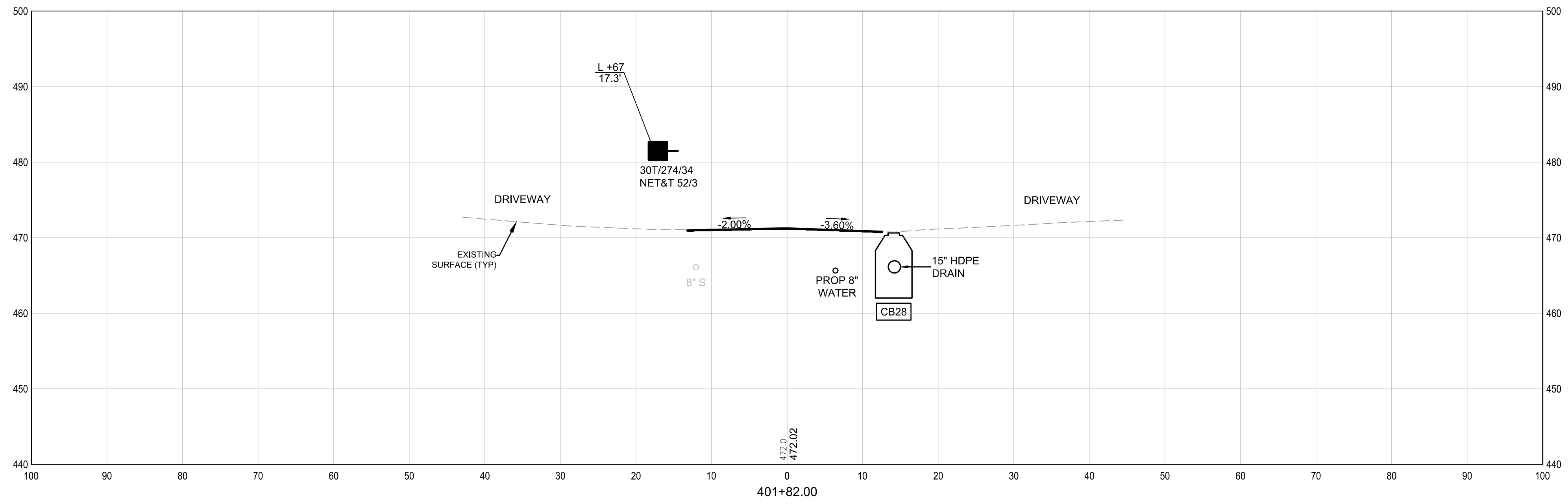
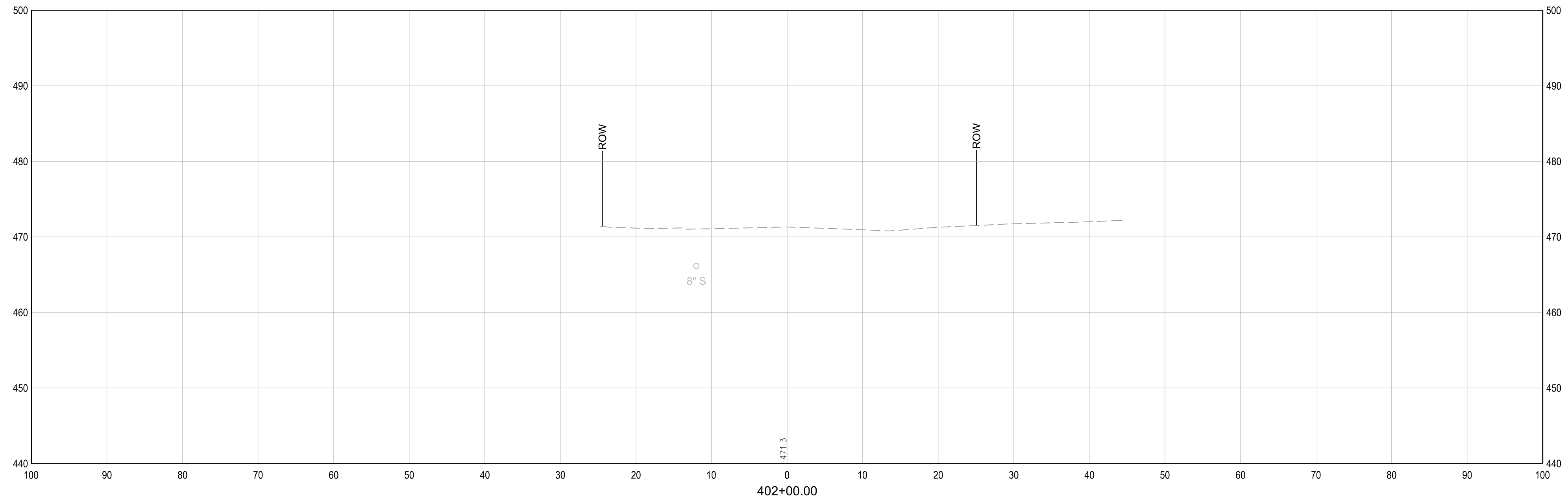
CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
RIVERSIDE PLAZA CROSS SECTIONS STA 302+50.00 TO STA 302+85.00			
REV	DATE	DESCRIPTION	BY
		McFarland Johnson	
53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301		SCALE: AS SHOWN	DESIGN: BEP
		DRAWN: MJF	PROJECT: 18022.01
		CHECKED: EWM	DATE: SEPTEMBER 2021
			XS-32 106 OF 143




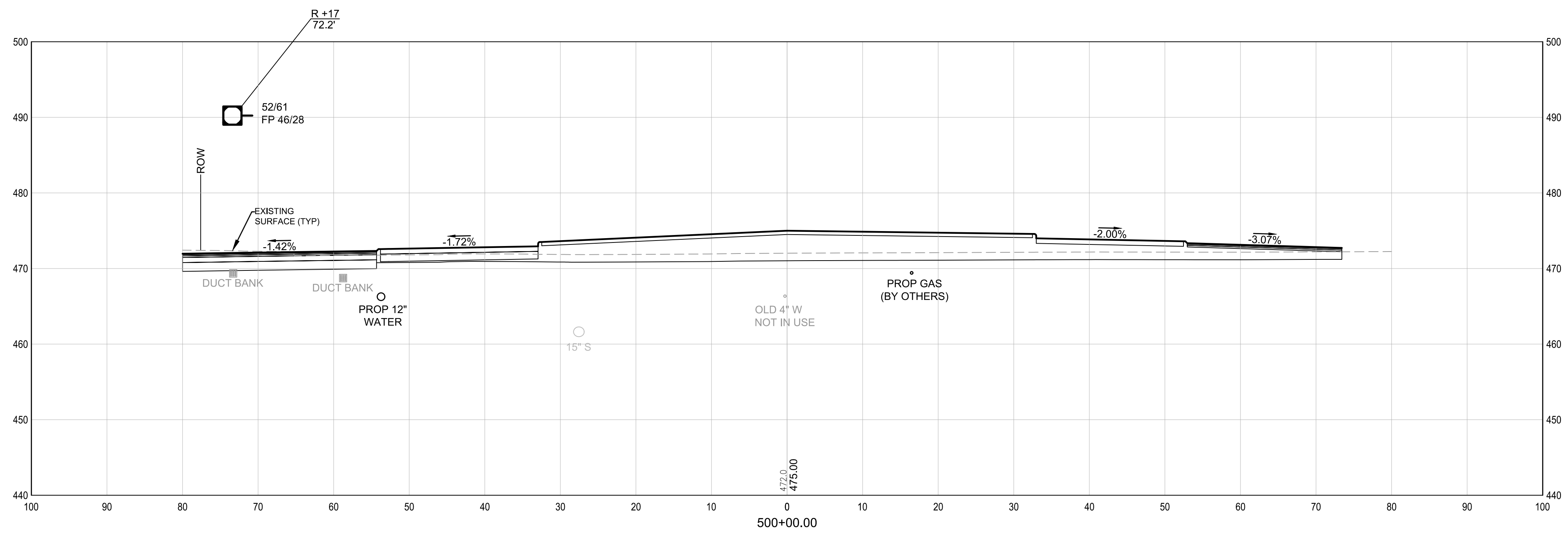
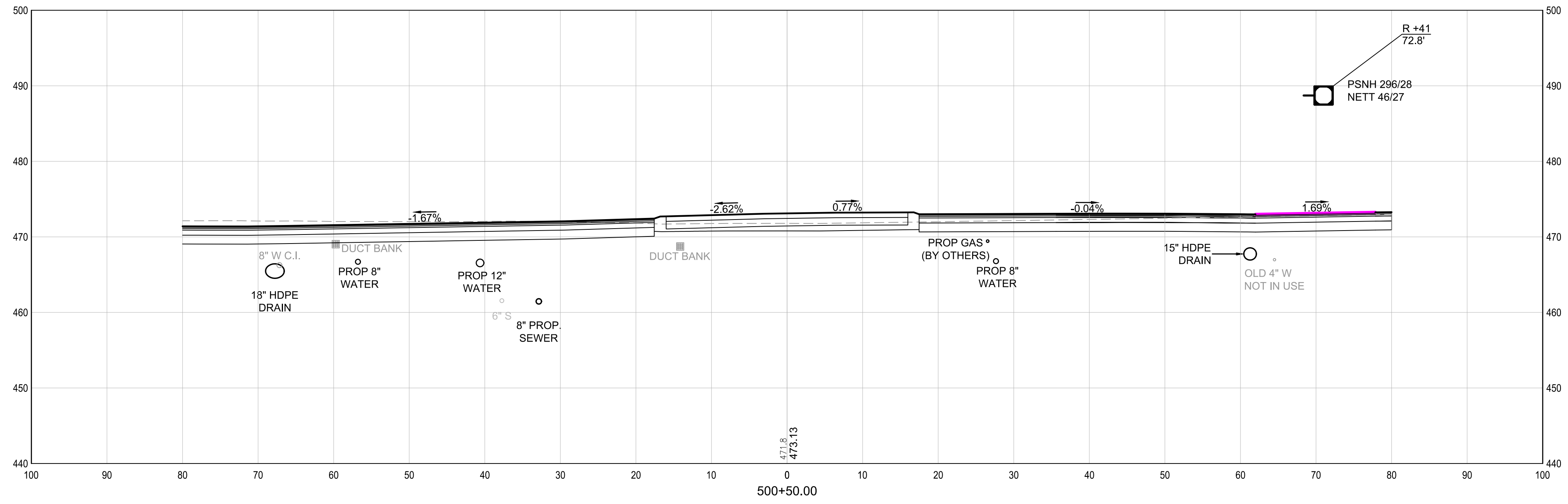
				CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION	
				PEARL STA 400+00.00 TO STA 400+50.00	
REV	DATE	DESCRIPTION	BY	SCALE: AS SHOWN	DESIGN: BEP
				DRAWN: MJF	PROJECT: 18022.01
				CHECKED: EWM	DATE: SEPTEMBER 2021
 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301				XS-33	
				107 OF 143	




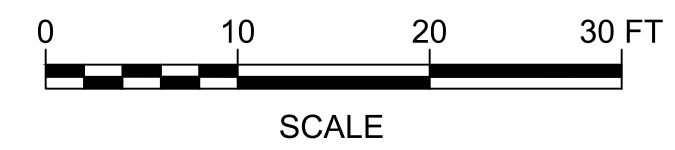
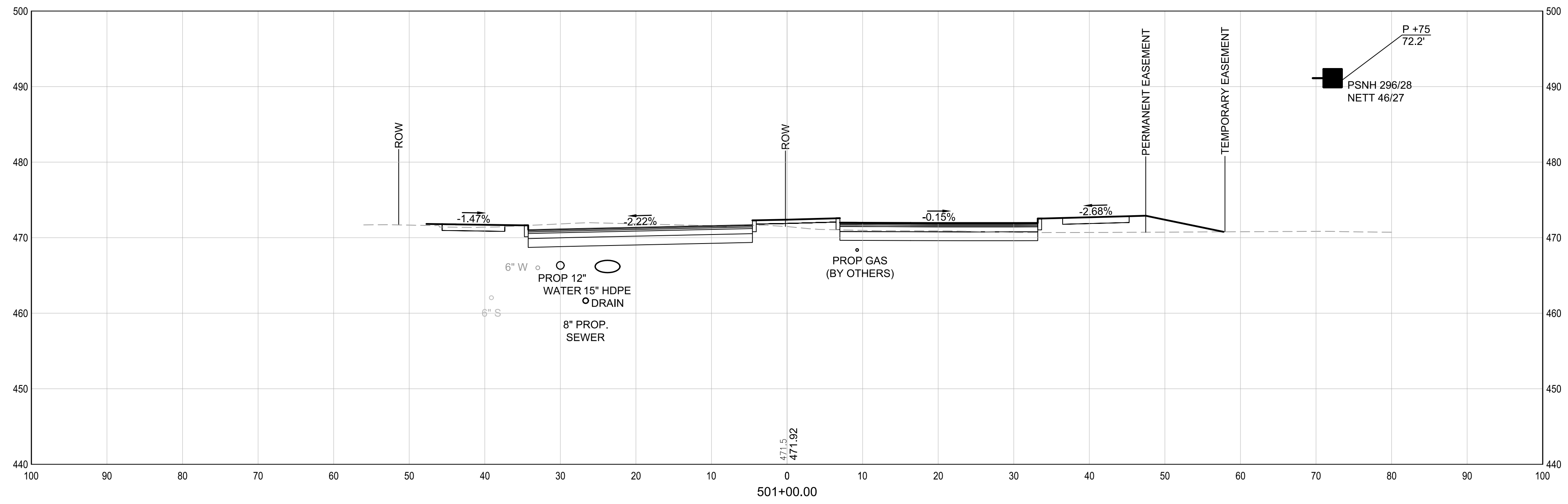
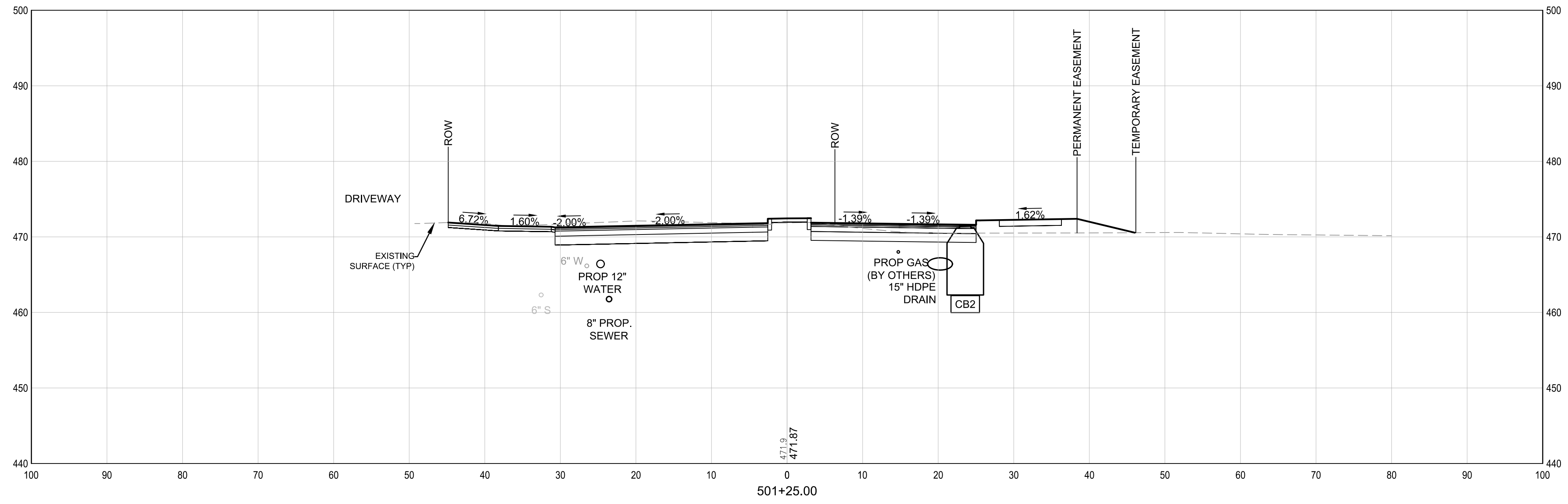
				CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION	
				PEARL STA 401+00.00 TO STA 401+50.00	
REV	DATE	DESCRIPTION	BY	SCALE: AS SHOWN	DESIGN: BEP
				DRAWN: MJF	PROJECT: 18022.01
				CHECKED: EWM	DATE: SEPTEMBER 2021
 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301				XS-34	
				108 OF 143	




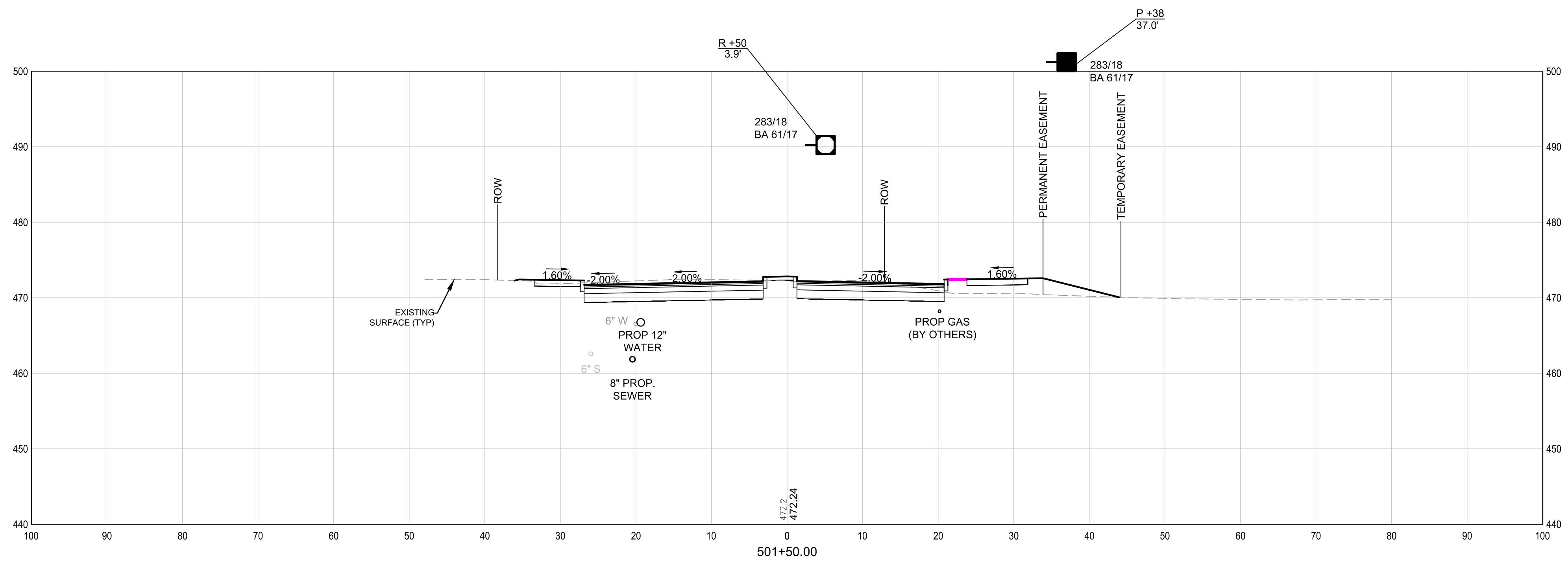
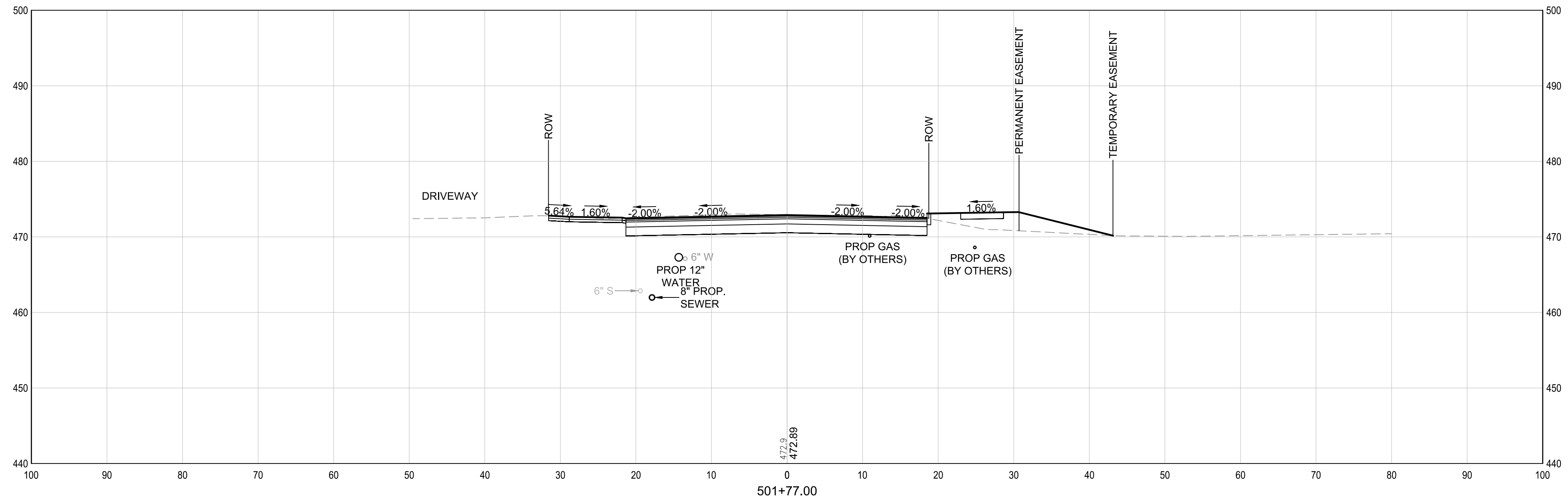
				CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION	
				PEARL STA 401+82.00 TO STA 402+00.00	
REV	DATE	DESCRIPTION	BY	SCALE: AS SHOWN	DESIGN: BEP
				DRAWN: MJF	PROJECT: 18022.01
				CHECKED: EWM	DATE: SEPTEMBER 2021
 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301				XS-35	
				109 OF 143	



				CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION	
				ISLAND STREET CROSS SECTIONS STA 500+00.00 TO STA 500+50.00	
REV	DATE	DESCRIPTION	BY	SCALE: AS SHOWN	DESIGN: BEP
				DRAWN: MJF	PROJECT: 18022.01
				CHECKED: EWM	DATE: SEPTEMBER 2021
 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301				XS-36	
				110 OF 143	



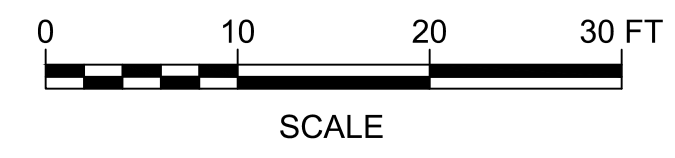
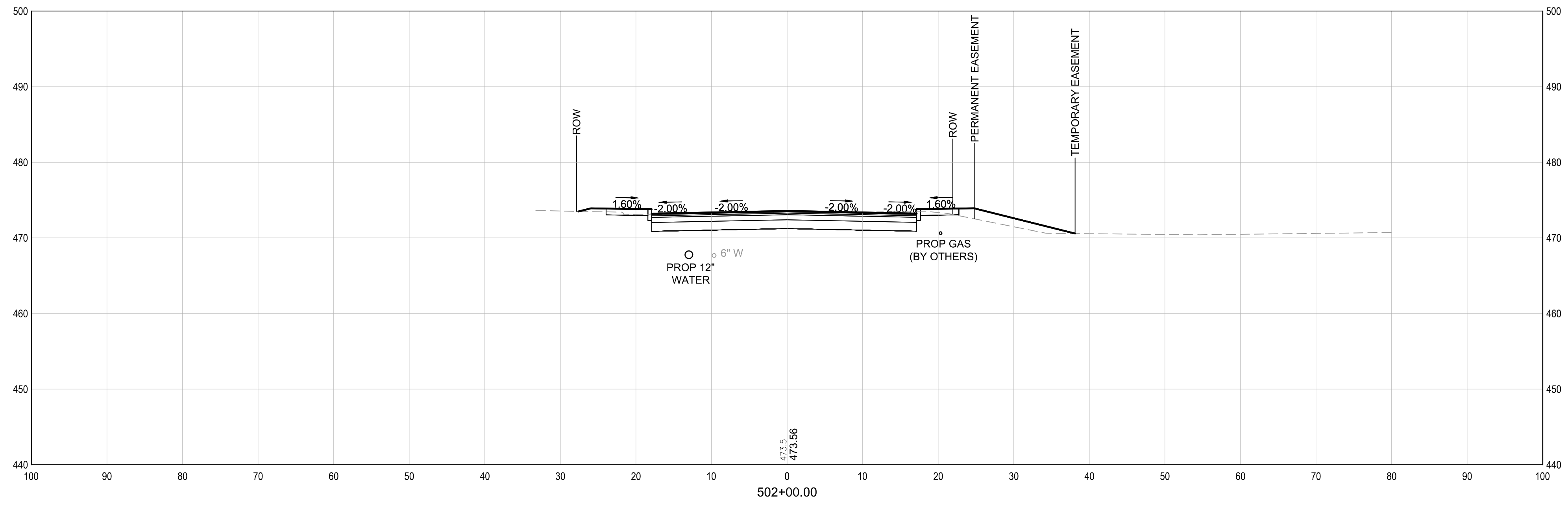
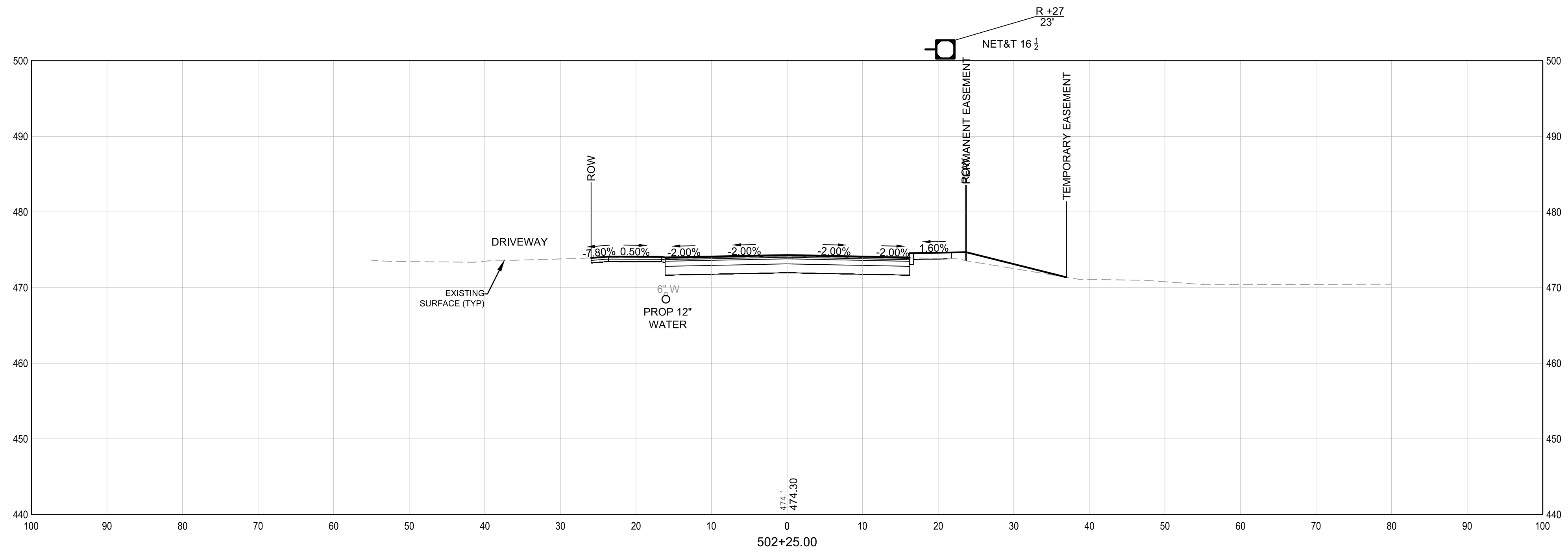
				CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION	
				ISLAND STREET CROSS SECTIONS STA 501+00.00 TO STA 501+25.00	
REV	DATE	DESCRIPTION	BY	SCALE: AS SHOWN	DESIGN: BEP
				DRAWN: MJF	PROJECT: 18022.01
				CHECKED: EWM	DATE: SEPTEMBER 2021
 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301				XS-37	
				111 OF 143	




CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
ISLAND STREET CROSS SECTIONS STA 501+50.00 TO STA 501+77.00			
SCALE: AS SHOWN	DESIGN: BEP	XS-38 112 OF 143	
DRAWN: MJF	PROJECT: 18022.01		
CHECKED: EWM	DATE: SEPTEMBER 2021		

McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

REV	DATE	DESCRIPTION	BY

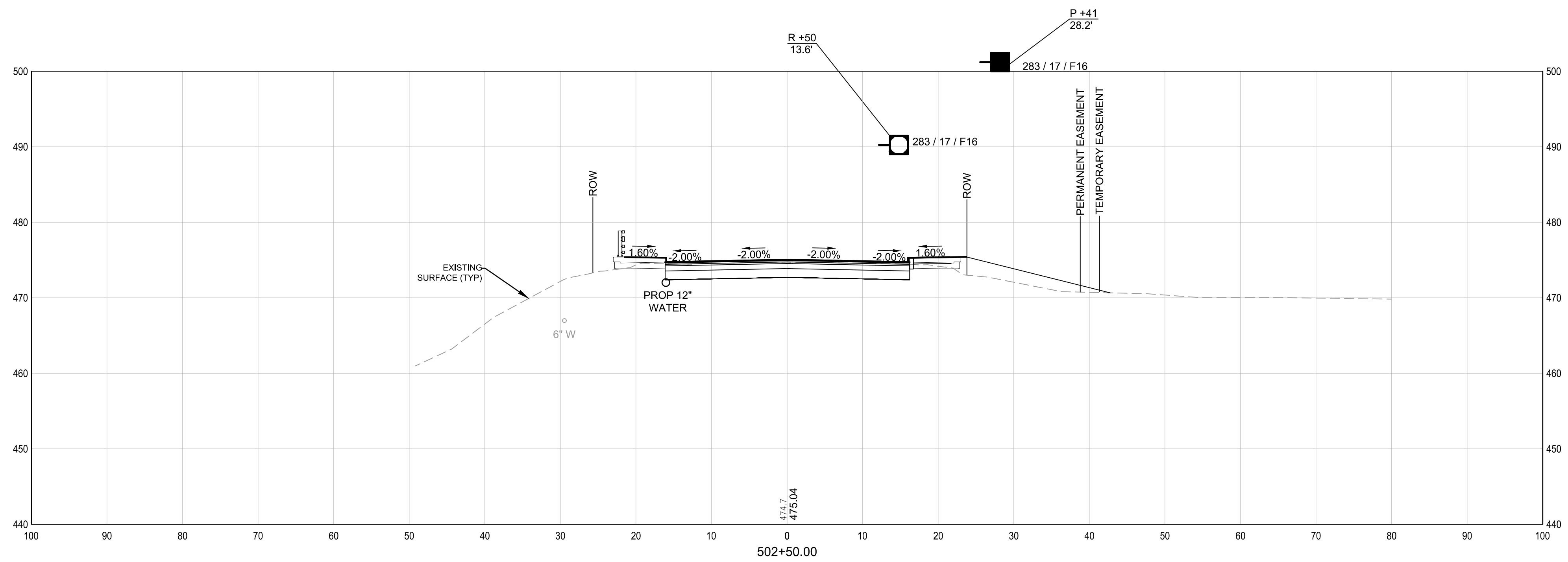
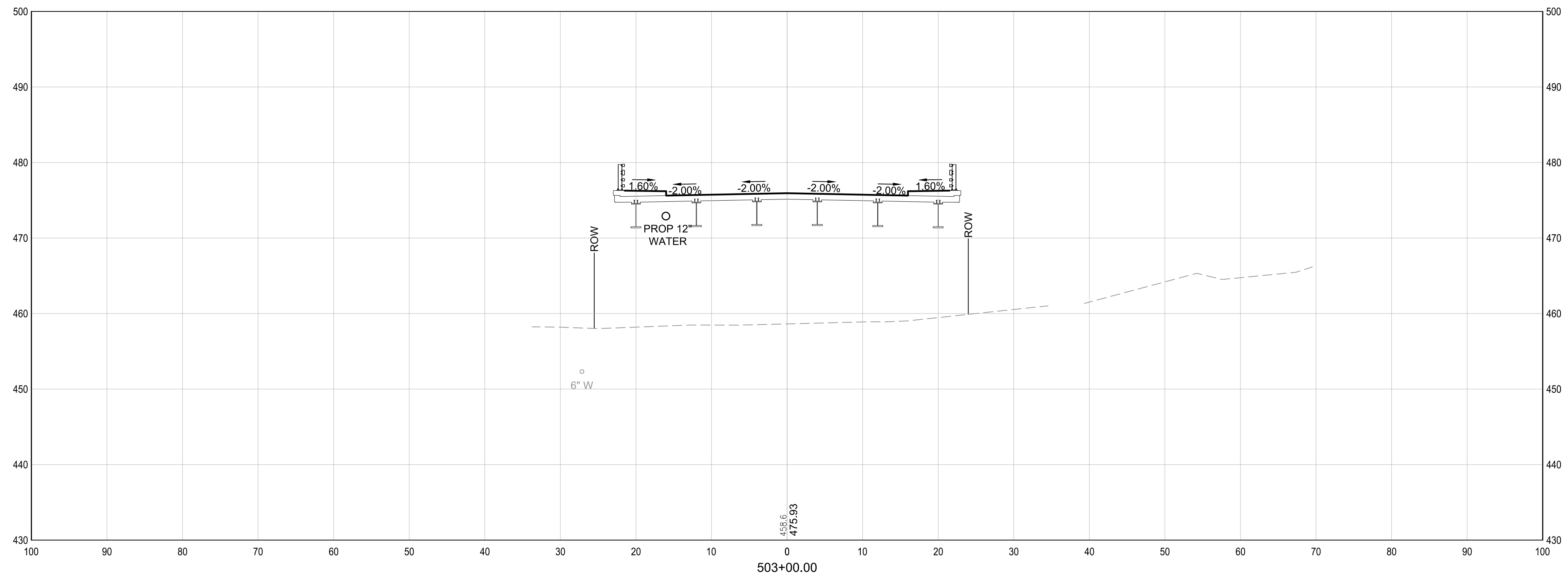


				CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION	
				ISLAND STREET CROSS SECTIONS STA 502+00.00 TO STA 502+25.00	
REV	DATE	DESCRIPTION	BY	SCALE: AS SHOWN	DESIGN: BEP
				DRAWN: MJF	PROJECT: 18022.01
				CHECKED: EWM	DATE: SEPTEMBER 2021




McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

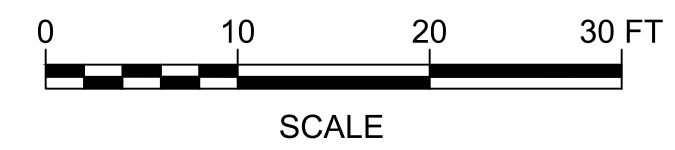
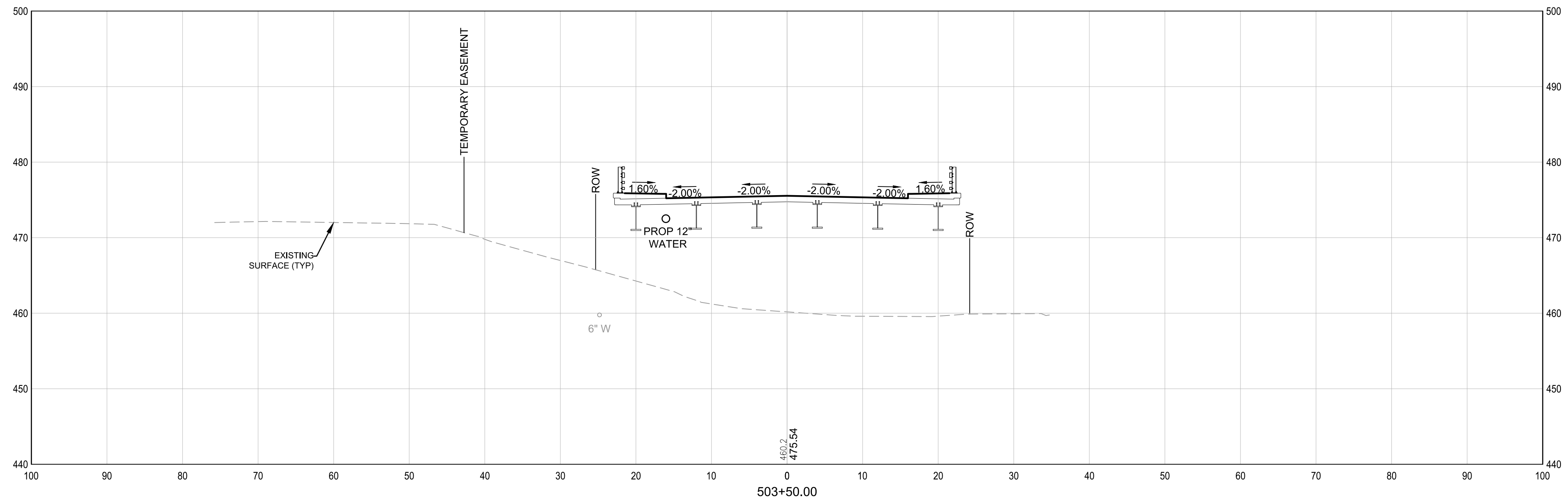
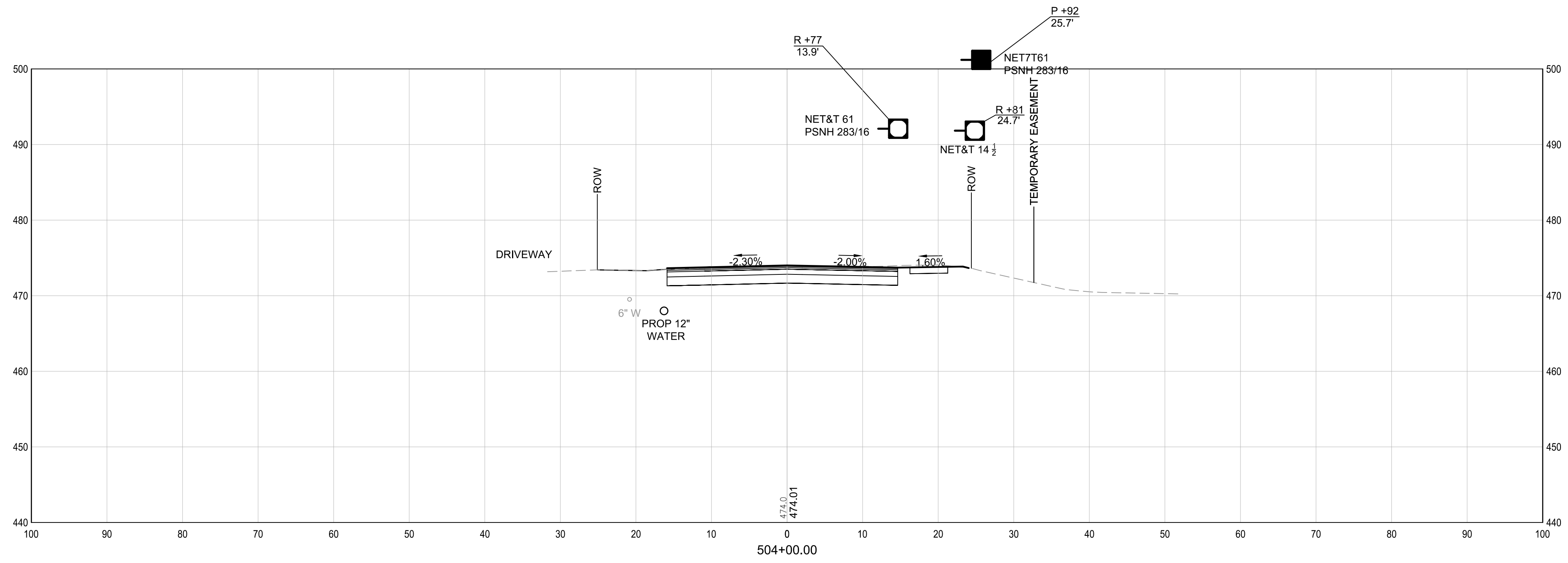
XS-39
113 OF 143




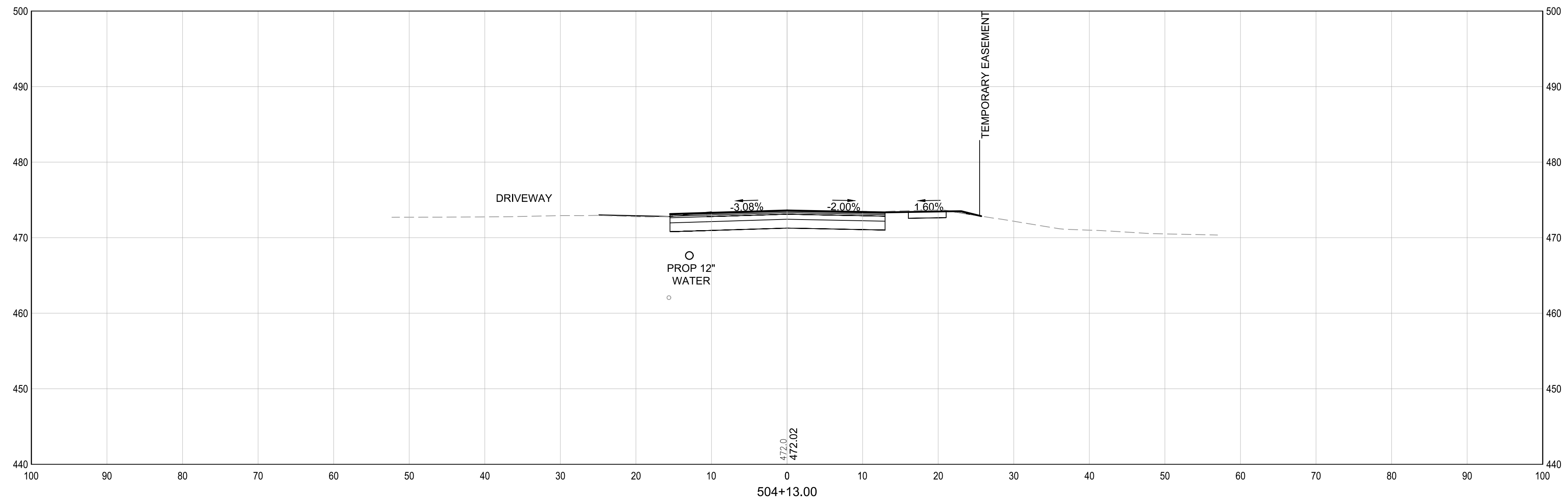
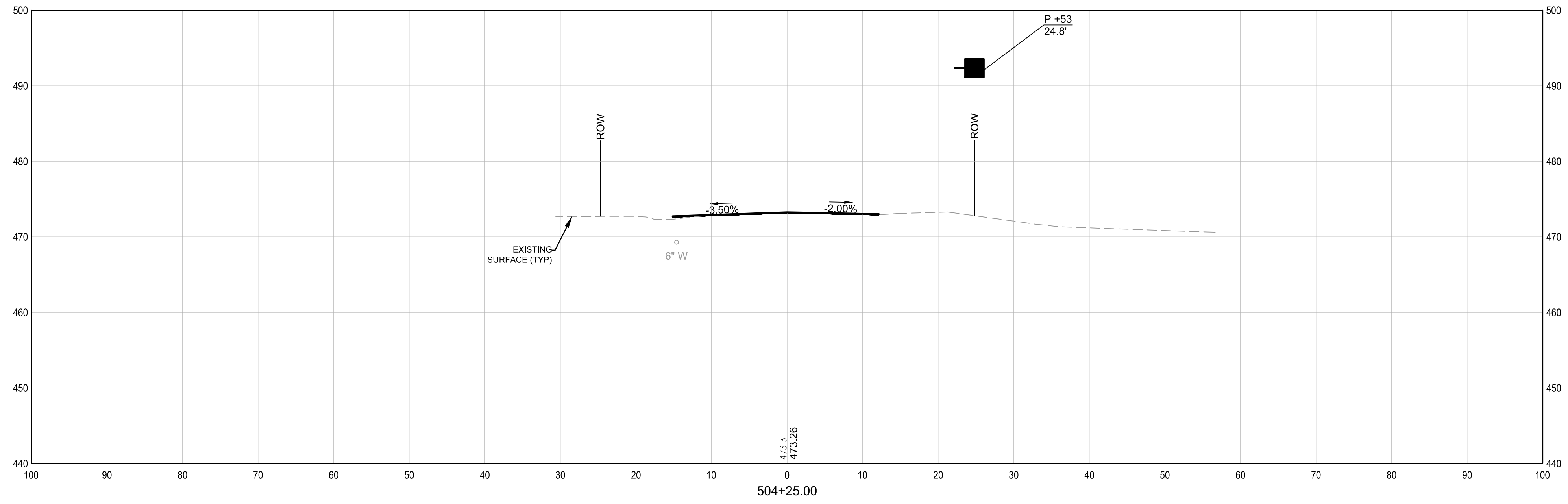
REV	DATE	DESCRIPTION	BY


CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
ISLAND STREET CROSS SECTIONS STA 502+50.00 TO STA 503+00.00			
SCALE: AS SHOWN	DESIGN: BEP	XS-40 114 OF 143	
DRAWN: MJF	PROJECT: 18022.01		
CHECKED: EWM	DATE: SEPTEMBER 2021		

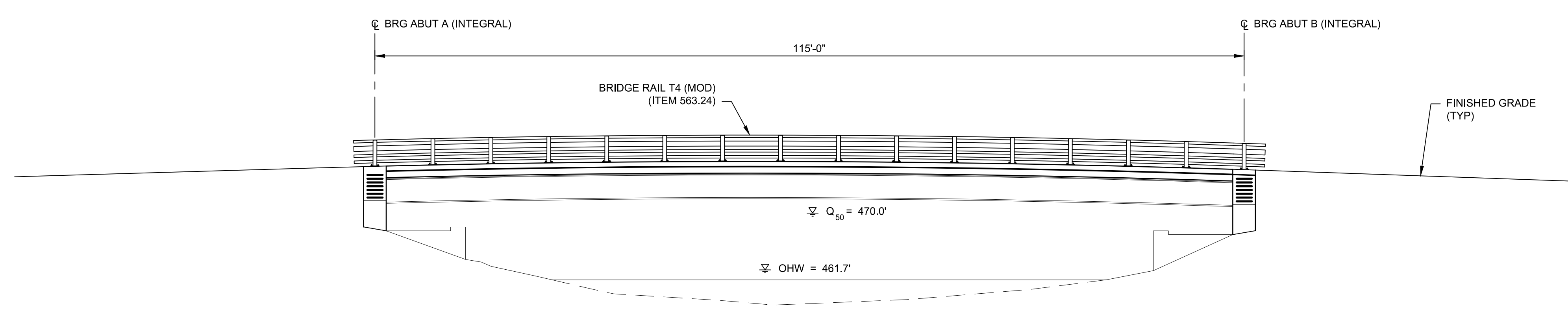
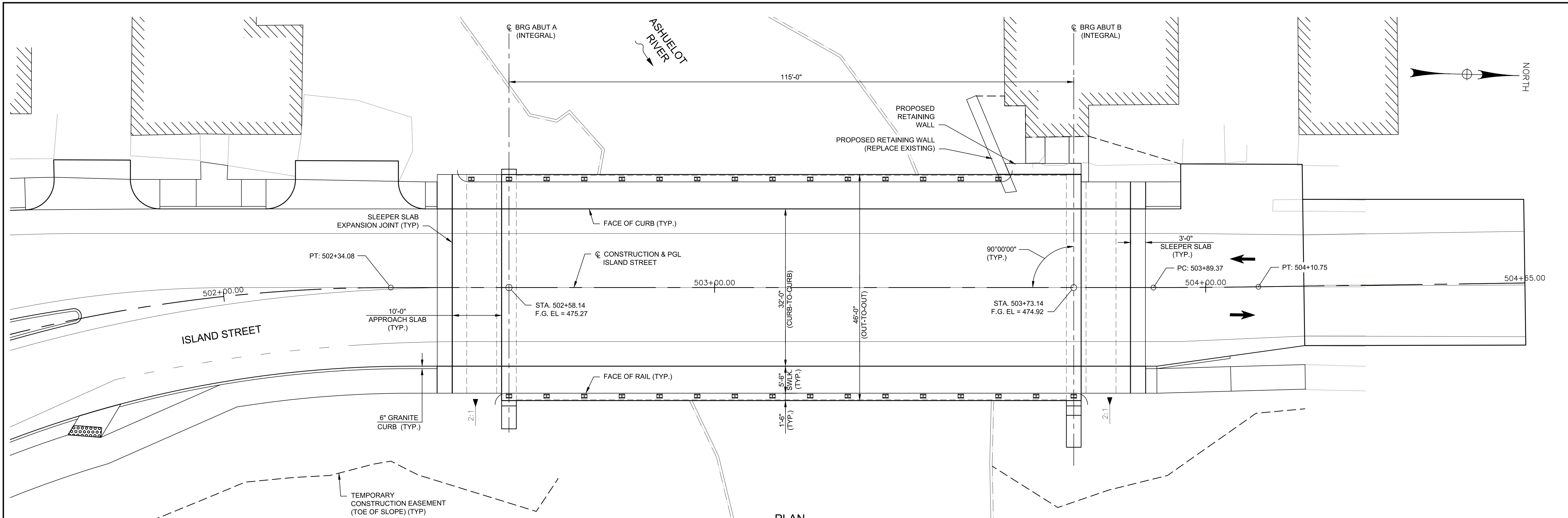
 McFarland Johnson	
53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301	



CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
ISLAND STREET CROSS SECTIONS STA 503+50.00 TO STA 504+00.00			
REV	DATE	DESCRIPTION	BY
		McFarland Johnson	
53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301		SCALE: AS SHOWN	DESIGN: BEP
		DRAWN: MJF	PROJECT: 18022.01
		CHECKED: EWM	DATE: SEPTEMBER 2021
			XS-41 115 OF 143



				CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION	
				ISLAND STREET CROSS SECTIONS STA 504+13.00 TO STA 504+25.00	
REV	DATE	DESCRIPTION	BY	SCALE: AS SHOWN	DESIGN: BEP
				DRAWN: MJF	PROJECT: 18022.01
				CHECKED: EWM	DATE: SEPTEMBER 2021
 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301				XS-42 116 OF 143	



HYDRAULIC DATA *

DRAINAGE AREA:	115 SQ. MILES
DESIGN FLOOD DISCHARGE:	$Q_{50} = 5,120$ CFS
DESIGN FLOOD ELEVATION:	470.0 FT
BRIDGE FULL WATERWAY OPENING PERPENDICULAR TO RIVER:	1115 SQ. FT.

* DISCHARGE & ELEVATION OBTAINED FROM FEMA REPORT.

REV	DATE	DESCRIPTION	BY

McFarland Johnson
 53 REGIONAL DRIVE
 CONCORD, NEW HAMPSHIRE 03301

CITY OF KEENE
 KEENE NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION


GENERAL PLAN AND ELEVATION

SCALE: AS SHOWN	DESIGN: SIW	BR-01 117 OF 143
DRAWN: DJD	PROJECT: 18022.01	
CHECKED: RLJ	DATE: SEPTEMBER 2021	

INDEX OF BRIDGE SHEETS	
Bridge Sheet Number	Description
BR-01	GENERAL PLAN AND ELEVATION
BR-02	QUANTITIES AND INDEX OF BRIDGE SHEETS
BR-03	PROJECT NOTES (1 OF 2)
BR-04	PROJECT NOTES (2 OF 2)
BR-05	SITE PLAN
BR-06	BRIDGE PROFILE
BR-07	SURVEY LAYOUT PLAN
BR-08	EARTHWORK SECTIONS
BR-09	BORING LOGS (1 OF 2)
BR-10	BORING LOGS (2 OF 2)
BR-11	ABUTMENT A MASONRY
BR-12	ABUTMENT B MASONRY
BR-13	ABUTMENT REINFORCEMENT
BR-14	RETAINING WALL PLAN AND ELEVATIONS
BR-15	RETAINING WALL DETAILS
BR-16	FRAMING PLAN AND GIRDER ELEVATION
BR-17	STRUCTURAL STEEL DETAILS
BR-18	CAMBER TABLES
BR-19	DIAPHRAGM DETAILS
BR-20	TYPICAL BRIDGE SECTION
BR-21	DECK REINFORCEMENT & BRIDGE RAIL LAYOUT
BR-22	APPROACH SLAB DETAILS (1 OF 2)
BR-23	APPROACH SLAB DETAILS (2 OF 2)
BR-24	COMPRESSION SEAL JOINT DETAILS (1 OF 2)
BR-25	COMPRESSION SEAL JOINT DETAILS (2 OF 2)
BR-26	T4 STEEL BRIDGE RAIL (MOD)
BR-27	WATER LINE DETAILS

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
207.3	UNCLASSIFIED CHANNEL EXCAVATION	CY	235
209.201	GRANULAR BACKFILL (BRIDGE)	CY	250
211.11	VIBRATION MONITORING SERVICES	HR	80
502.	REMOVAL OF EXISTING BRIDGE STRUCTURE	U	1
503.201	COFFERDAMS	U	1
503.202	COFFERDAMS	U	1
504.1	COMMON BRIDGE EXCAVATION	CY	660
506.2	STEEL SHEET PILING	LB	46600
508.	STRUCTURAL FILL	CY	110
510.1	PILE DRIVING EQUIPMENT	U	1
510.22	HIGH-STRAIN DYNAMIC TESTING	EA	2
510.61	FURNISHING & DRIVING STEEL BEARING PILES	LB	96000
510.65	DRIVING-POINTS FOR STEEL BEARING PILES	EA	12
510.9	PILE SPLICES	EA	12
520.02	CONCRETE CLASS AA, ABOVE FOOTINGS	CY	90
520.0302	CONCRETE CLASS AA APPROACH SLABS (QC/QA)	CY	95
520.7002	CONCRETE BRIDGE DECK (QC/QA)	CY	280
526.3	HIGH MOLECULAR WEIGHT METHACRYLATE CRACK SEALER	GAL	5
534.3	WATER REPELLENT (SILANE/SILOXANE)	GAL	59
538.2	BARRIER MEMBRANE, PEEL AND STICK - VERTICAL SURFACES	SY	25
541.1	PVC WATERSTOPS, NH TYPE 1	LF	92
544.31	REINFORCING STEEL, EPOXY COATED (CONTRACTOR DETAILED)	LB	82500
547.	SHEAR CONNECTORS	EA	2090
550.1	STRUCTURAL STEEL	LB	211600
560.1001	PREFABRICATED COMPRESSION SEAL EXPANSION JOINT	LF	92
562.1	SILICONE JOINT SEALANT	LF	99
563.24	BRIDGE RAIL T4	LF	242
583.1	RIPRAP, CLASS I	CY	30
593.421	GEOTEXTILE; PERM CONTROL CL.2, NON-WOVEN	SY	85
605.906	6" PIPE UNDERDRAIN (CONTRACTORS OPTION)	LF	115
611.06212	12" CEMENT LINED DUCTILE IRON BRIDGE CROSSING PIPE, CL 52	LF	111
611.35226	26" CASING PIPE WITH 12" CEMENT LINED DUCTILE IRON PIPE, CL52	LF	44
628.5	DIAMOND GRINDING CONCRETE PAVEMENT	SY	480
1002.1	REPAIRS OR REPLACEMENTS AS NEEDED - BRIDGE STRUCTURES	\$	*
1010.41	QUALITY CONTROL QUALITY ASSURANCE (QC/QA) FOR CONCRETE	\$	*

* = NOT A BID ITEM

CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
QUANTITIES AND INDEX OF BRIDGE SHEETS			
SCALE: AS SHOWN	DESIGN: SIW	BR-02 118 OF 142	
DRAWN: DJD	PROJECT: 18022.01		
CHECKED: RLJ	DATE: SEPTEMBER 2020		
 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301			
REV	DATE	DESCRIPTION	BY

DESIGN LOADS, MATERIALS AND SPECIFICATIONS

- (1) DESIGN LOADING: HL-93
- (2) DESIGN METHOD: LOAD AND RESISTANCE FACTOR DESIGN METHOD (LRFD)
- (3) SPECIFICATIONS: 2017 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8th ED. NHDOT 2016 STANDARD SPECIFICATIONS AS AMENDED WELDS PER AASHTO/AWS D1.5-2015 (INCLUDES ALL REVISIONS AS OF BID OPENING DATE)
- (4) FOUNDATION DATA: ABUTMENTS AND WINGS: INTEGRAL REINFORCED CONCRETE ABUTMENTS SUPPORTED ON STEEL H-PILES

BEARING PILES: HP12x84 WITH APPROVED PILE POINTS (AASHTO M270, ASTM A709 GRADE 50)
- (5) REINFORCING STEEL: AASHTO M31 (ASTM A 615) GRADE 60 EPOXY COATED BARS: ALL BARS EPOXY COATED.
- (6) STRUCTURAL STEEL: AASHTO M270, GRADE 50W (ASTM A709, GRADE 50W), UNPAINTED (EXCEPT AS NOTED OTHERWISE)
- (7) CONCRETE: DECK, SIDEWALKS, DECK END BACKWALLS: ITEM 520.7002, CONCRETE BRIDGE DECK (QC/QA) 4,000 PSI (AT 28 DAYS)

APPROACH SLABS AND SLEEPER SLABS: ITEM 520.0302, CONCRETE CLASS AA, APPROACH SLABS (QC/QA) 4,000 PSI (AT 28 DAYS)

ABUTMENTS, WINGWALLS, AND RETAINING WALL CONCRETE FACING: ITEM 520.02, CONCRETE CLASS AA, ABOVE FOOTINGS 4,000 PSI (AT 28 DAYS)
- (8) MAINTENANCE OF TRAFFIC: BRIDGE CLOSED WITH DETOUR DURING CONSTRUCTION.

GENERAL NOTES

- (1) CARE SHALL BE TAKEN NOT TO DAMAGE PORTIONS OF THE EXISTING SUBSTRUCTURES THAT ARE TO REMAIN OR PARTS OF THE SUPERSTRUCTURE THAT ARE TO BE SALVAGED. ANY DAMAGE SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER AND REPAIRED AT THE CONTRACTOR'S EXPENSE.
- (2) EXISTING PLANS OF THE SUBSTRUCTURES ARE NOT AVAILABLE. REHABILITATION PLANS FROM 2004 OF THE CURRENT SUPERSTRUCTURE WILL BE PROVIDED WITH THE PROPOSAL DOCUMENTS.
- (3) THE CONTRACTOR SHALL CONTACT DIG SAFE TO SURVEY AND TAG ALL BRIDGE COPING AND UNDERGROUND LOCATIONS NEAR THE BRIDGE, FOR POSSIBLE UTILITIES.
- (4) THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO ENSURE THAT DEBRIS DOES NOT FALL ON THE WATERWAY BELOW THE EXISTING STRUCTURE. ALL COSTS INCLUDING ERECTION, MAINTENANCE AND REMOVAL OF TEMPORARY STRUCTURES OR OTHER SUCH APPROVED METHODS, SHALL BE SUBSIDIARY TO THE APPROPRIATE ITEMS OF WORK BEING PERFORMED.
- (5) ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 3/4", UNLESS OTHERWISE NOTED.
- (6) ALL EXISTING BRONZE DISCS REPRESENTING STATE BENCHMARKS OR SURVEY TRIANGULATION POINTS MUST NOT BE DISTURBED. WHEN THE WORK CALLED FOR INVOLVES DISTURBING A BRONZE DISC THE CONTRACTOR SHALL NOTIFY THE ENGINEER SUFFICIENTLY IN ADVANCE OF THE WORK TO ALLOW THE STATE TO TEMPORARILY RELOCATE THE AFFECTED MARKER.
- (7) VIBRATION MONITORING FOR THE PROTECTION OF EXISTING BUILDINGS SHALL BE PROVIDED UNDER ITEM 211.11, VIBRATION MONITORING SERVICES.
- (8) REFER TO THE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION ON VIBRATION MONITORING.
- (9) FOR BORING NOTES SEE SHEET BR-05.
- (10) FOR HYDRAULIC DATA SEE SHEET BR-01.
- (11) FOR DECK SLAB ELEVATION NOTES SEE SHEET BR-20.
- (12) FOR EXPANSION JOINT NOTES SEE SHEET BR-24.
- (13) FOR SURVEY LAYOUT SEE SHEET BR-07.

BRIDGE REMOVAL NOTES

- (1) ITEM 502, REMOVAL OF EXISTING BRIDGE STRUCTURE, SHALL INCLUDE THE COMPLETE REMOVAL OF THE BRIDGE SUPERSTRUCTURE, BEARINGS, CONCRETE ABUTMENTS TO THE ELEVATIONS SHOWN ON THE PLANS, AND REMOVAL OF ALL OR PORTIONS OF THE CONCRETE RETAINING WALL LOCATED AT THE NORTHWEST QUADRANT AS DETAILED OR NOTED IN THE PLANS. THE DESIGN, CONSTRUCTION MAINTENANCE AND REMOVAL OF ANY TEMPORARY WORKS REQUIRED FOR BRIDGE REMOVAL SHALL BE INCLUDED UNDER ITEM 502.
- (2) THE EXISTING BRIDGE SUPERSTRUCTURE SHALL BE SALVAGED. THE CONTRACTOR SHALL CAREFULLY REMOVE, DISMANTLE, AND DELIVER THE STRUCTURE TO A STORAGE SITE IN KEENE AS DETERMINED BY THE CITY. THE EXISTING SUPERSTRUCTURE SHALL BE REMOVED IN ACCORDANCE WITH THE SPECIAL PROVISION AND PAID FOR UNDER ITEM 502.
- (3) THE CONTACTORS METHOD FOR REMOVAL OF THE EXISTING BRIDGE SHALL BE SUBMITTED FOR DOCUMENTATION, IN ACCORDANCE WITH SECTION 105.02, PRIOR TO THE COMMENCEMENT OF ANY REMOVAL OPERATIONS.

ACCESS FOR BRIDGE CONSTRUCTION

- (1) TEMPORARY FILLS SHALL REMAIN WITHIN WETLAND IMPACT AREAS SHOWN IN THE WETLAND PERMIT AND WITHIN EASEMENTS SHOWN ON THE SITE PLAN. A GEOTEXTILE FABRIC SHALL BE PLACED UNDER ALL TEMPORARY FILLS TO MINIMIZE DISRUPTION OF NATIVE SOILS AND VEGETATION. ALL COSTS SHALL BE CONSIDERED SUBSIDIARY TO THE ITEM THE ACCESS IS REQUIRED FOR.

PILE NOTES

- (1) MAXIMUM FACTORED PILE LOAD: ABUTMENTS A & B: 370 KIPS PER PILE
- (2) STEEL H-PILES SHALL CONFORM TO AASHTO M270, GRADE 50 (ASTM A 709, GRADE 50). ALL ABUTMENT PILES SHALL BE HP12 X 84. PILE POINTS ARE REQUIRED FOR ALL PILES AND SHALL BE PAID FOR UNDER ITEM 510.65.
- (3) THE PILES SHALL BE DRIVEN IN ACCORDANCE WITH SECTION 510 TO A MINIMUM NOMINAL GEOTECHNICAL RESISTANCE EQUAL TO THE MAXIMUM FACTORED LOAD DIVIDED BY A RESISTANCE FACTOR OF 0.65. THE CONTRACTOR WILL CONDUCT PILE DYNAMIC ANALYZER (PDA) TESTS IN ACCORDANCE WITH ITEM 510.21 TO VERIFY THE NOMINAL GEOTECHNICAL RESISTANCE AND THE ACCEPTABILITY OF THE DRIVING SYSTEM.
- (4) THE INTENT OF THE PROJECT IS TO DRIVE ALL PILES TO BEDROCK.
- (5) ESTIMATED PILE LENGTHS: (ESTIMATED PILE LENGTHS ARE BASED ON FINAL PILE CUTOFF ELEVATIONS)

ABUTMENT A: 95 FEET (VERTICAL)
ABUTMENT B: 95 FEET (VERTICAL)
- (6) ONE SPLICE PER PILE WITHIN THE ESTIMATED LENGTH FOR ABUTMENT A AND ABUTMENT B. ALL SPLICES REQUIRED FOR PILES THAT EXCEED THE ESTIMATED LENGTH WILL BE PAID. NO PAYMENT FOR ADDITIONAL PILE SPLICES WITHIN THE ESTIMATED LENGTH WILL BE PAID UNLESS ORDERED. APPROVED ADDITIONAL PILE SPLICES WILL BE PAID UNDER ITEM 510.9.
- (7) PILE LOCATION AND ALIGNMENT TOLERANCES AT ABUTMENTS SHALL CONFORM TO SECTION 510.3.6.4 REQUIREMENTS FOR BENT CAPS SUPPORTED BY PILES.
- (8) PILE LAYOUT DIMENSIONS ARE GIVEN AT THE BOTTOM OF THE ABUTMENTS.

COFFERDAMS

- (1) THE COFFERDAM ITEMS SHALL BE PAID AS FOLLOWS: ABUTMENT A (ITEM 503.201); ABUTMENT B (ITEM 503.202). ALL COSTS FOR MATERIAL, INSTALLATION, MAINTENANCE, AND REMOVAL SHALL BE INCLUDED IN THE COFFERDAM ITEMS.
- (2) ALL ITEMS COVERED UNDER SECTION 503 OF THE SPECIFICATIONS SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER, LICENSED IN THE STATE OF N.H. THE CONTRACTOR SHALL SUBMIT STAMPED WORKING DRAWINGS AND CALCULATIONS FOR REVIEW AND DOCUMENTATION IN ACCORDANCE WITH SECTION 105.02.
- (3) COFFERDAMS WILL BE REQUIRED TO TEMPORARILY SUPPORT EARTH TO CONTAIN EXCAVATION FOR CONSTRUCTION OF THE FOUNDATIONS WITHIN THE RIGHT-OF-WAY AND EASEMENTS SHOWN ON THE SITE PLAN.
- (4) THE COFFERDAM LIMITS SHOWN ON THE PLANS ARE APPROXIMATE AND SHALL BE ADJUSTED AS NECESSARY TO SUIT THE CONTRACTOR'S METHOD OF CONSTRUCTION.
- (5) THE COFFERDAM DESIGN SHALL ACCOUNT FOR THE EFFECTS OF UNBALANCED EARTH PRESSURE AND PILE DRIVING ON THE COFFERDAM STABILITY.
- (6) THE CONTRACTOR SHOULD BE PREPARED TO PERFORM ANY SUBSURFACE INVESTIGATIONS NEEDED FOR THE COFFERDAM DESIGN. ALL COSTS ASSOCIATED WITH THE COMPLETION OF SUBSURFACE INVESTIGATIONS, THE REDESIGN, OR THE REINSTALLATION OF COFFERDAMS DUE TO SUBSURFACE CONDITIONS ENCOUNTERED DURING THE COFFERDAM INSTALLATION THAT ARE DIFFERENT FROM WHAT THE COFFERDAM DESIGNER ASSUMED AND/OR INTERPRETED FROM THE AVAILABLE SUBSURFACE INFORMATION, SHALL BE SUBSIDIARY TO THE ASSOCIATED COFFERDAM ITEM.

UTILITY NOTES

- (1) THE CONTRACTOR IS ADVISED THAT THE EXISTING AERIAL UTILITIES WILL REMAIN IN PLACE UNTIL EACH UTILITY HAS FINISHED THEIR RELOCATION EFFORTS. SEE THE UTILITIES SECTION OF THE PROSECUTION OF WORK FOR ADDITIONAL INFORMATION.
- (2) A NEW WATERLINE SHALL BE INSTALLED ON THE BRIDGE. FOR GENERAL LOCATION OF NEW WATERLINE, SEE SHEETS BR-05 AND BR-16.
- (3) FOR BRIDGE WATER LINE DETAILS WITHIN THE LIMITS OF THE SLEEPER SLABS AND NOTES, SEE SHEET BR-27.

FOUNDATION NOTES

- (1) PROTRUDING BOULDERS OR COBBLES ENCOUNTERED AT THE FINAL EXCAVATION DEPTH SHALL BE REMOVED OR SPLIT TO PROVIDE A LEVEL BEARING SURFACE.
- (2) THE FOUNDATIONS SHALL BE INSTALLED ON A 1'-0" THICK LAYER OF STRUCTURAL FILL PLACED OVER UNDISTURBED SOIL. CLEAN STONE FILL, MEETING THE REQUIREMENTS OF SECTION 508.2.1.3 MAY BE SUBSTITUTED FOR STRUCTURAL FILL IF THE MAXIMUM DEPTH IS LESS THAN 1'-0" AND DIRECTED BY THE ENGINEER.
- (3) ALL SUBSTRUCTURE CONCRETE SHALL BE PLACED IN THE DRY. DEWATERING BY PUMPING OR OTHER METHODS REQUIRED TO MAINTAIN A DRY SUBBASE CONDITION SHALL BE SUBSIDIARY TO COMMON BRIDGE EXCAVATION (ITEM 504.1). PUMPING AREAS SHALL BE LOCATED OUTSIDE THE FOUNDATION LIMITS AND PROPERLY FILTERED TO PREVENT THE PUMPING OF FINES.
- (4) DEWATERING SHALL BE CONTINUOUS UNTIL SUBSTRUCTURES ARE BACKFILLED TO THE ELEVATIONS OF THE SURROUNDING WATER TABLE, UNLESS OTHERWISE DIRECTED.

RETAINING WALL NOTES

- (1) THE RETAINING WALL LOCATED AT THE NORTHWEST CORNER OF THE BRIDGE SHALL BE A STEEL SHEET PILE WALL WITH CONCRETE FACING AS DETAILED ON SHEET BR-14.
- (2) THE SHEET PILE PORTION OF THE WALL SHALL BE PAID FOR UNDER ITEM 506.2, SHEET PILING.
- (3) USED SHEET PILING WILL NOT BE CONSIDERED ACCEPTABLE. ALL SHEET PILING SHALL CONFORM TO ASTM A 572, GRADE 50.

ABUTMENT AND WINGWALL NOTES

- (1) ITEM 534.3, WATER REPELLENT (SILANE-SILOXANE), SHALL BE APPLIED TO ALL EXPOSED NEW CONCRETE SURFACES OF ABUTMENTS, WINGWALLS, AND BACKWALLS TO 1'-0" BELOW FILL LINES.
- (2) ITEM 538.2, BARRIER MEMBRANE, PEEL AND STICK - VERTICAL SURFACES, 2' WIDE WITH PROTECTION BOARD (SUBSIDIARY), SHALL BE PLACED CENTERED OVER THE BEARING SEAT CONSTRUCTION JOINT. ITEM 538.2 PLACED ALONG THE HORIZONTAL CONSTRUCTION JOINTS LOCATED AT THE WINGWALLS SHALL HAVE THE PROTECTION BOARD OMITTED.
- (3) ABUTMENTS SHALL BE BACKFILLED TO THE LEVEL OF THE BRIDGE SEAT ELEVATION PRIOR TO ERECTING THE GIRDERS.
- (4) ALL ANCHOR BOLTS AT THE ABUTMENTS SHALL BE CAST-IN-PLACE OR CORED DRILLED, USING A TEMPLATE. ROCK DRILLING IS NOT ALLOWED.
- (5) A BLOCK OUT SHALL BE PROVIDED IN THE ABUTMENT BACKWALL BETWEEN GIRDERS 1 AND 2 FOR WATERLINE INSTALLATION.

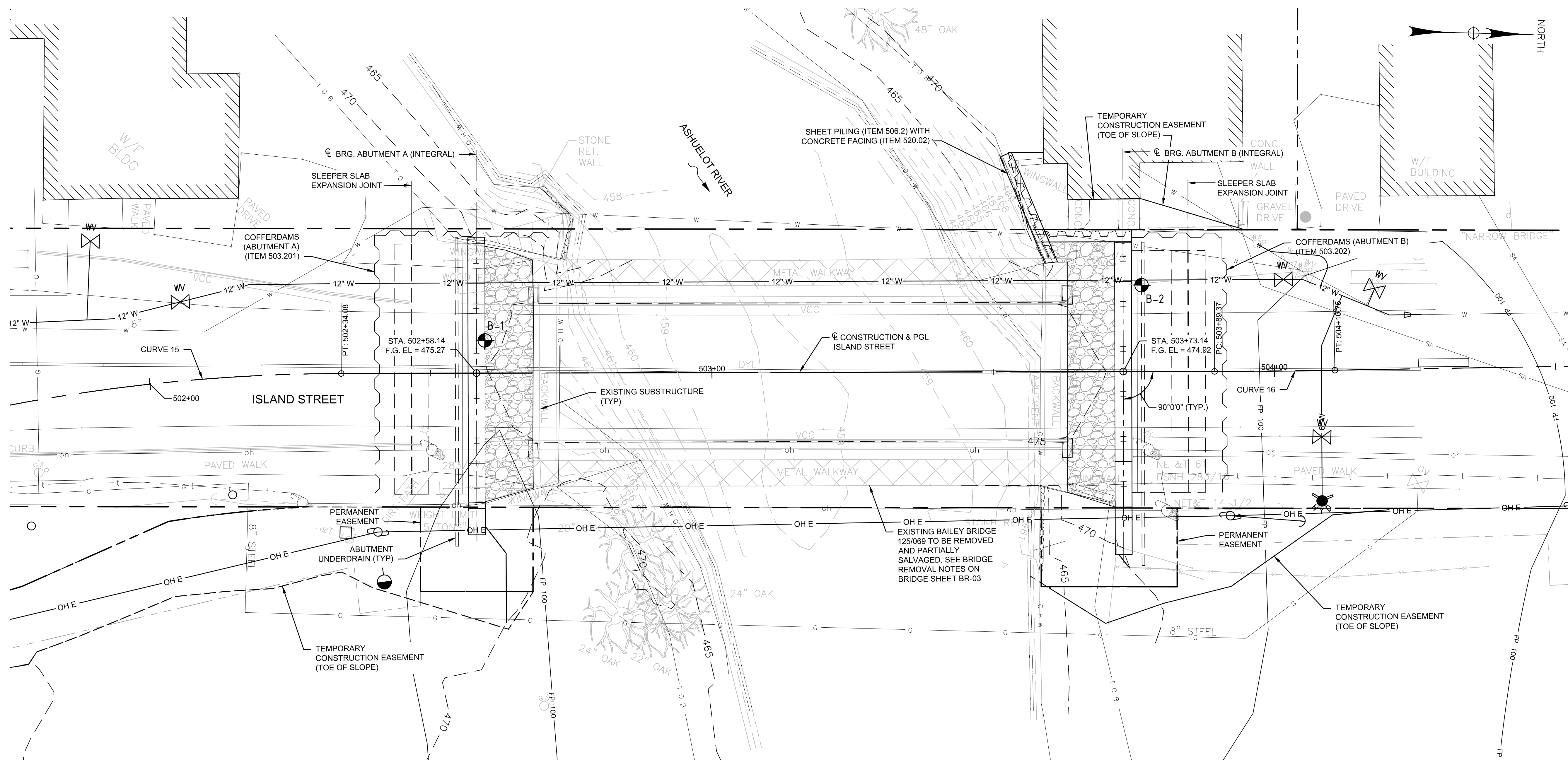
SUBSTRUCTURE - REHABILITATION NOTES

- (1) EXISTING ABUTMENTS NOTED TO REMAIN SHALL BE INSPECTED FOR DETERIORATED CONCRETE JOINTLY BY THE ENGINEER AND CONTRACTOR. ALL DETERIORATED CONCRETE SHALL BE REMOVED. CONCRETE SURFACES OF THE REMOVAL LIMITS SHALL BE SAWCUT TO A 1" DEPTH TO PROVIDE CLEAN REMOVAL LINES. ALL INSPECTION, REMOVAL, AND CLEANING SHALL BE AS SPECIFIED IN SECTION 512 AND PAID FOR UNDER ITEM 1002.1. REPAIR MATERIALS (I.E. CONCRETE, REINFORCEMENT, CRACK SEALER) PLACED IN THESE AREAS SHALL BE PAID UNDER 1002.1.
- (2) PRIOR TO PLACING NEW CONCRETE AGAINST EXISTING CONCRETE SURFACES, THE EXISTING CONCRETE SURFACES SHALL BE BLAST CLEANED AND PREPARED TO A SATURATED SURFACE-DRY CONDITION. ALL COSTS SHALL BE INCLUDED UNDER 1002.1.
- (3) ALL REPAIR DETAILS SHALL BE APPROVED BY THE ENGINEER PRIOR TO COMMENCING WORK.

CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
PROJECT NOTES (1 OF 2)			
SCALE: AS SHOWN	DESIGN: SIW	BR-03 119 OF 142	
DRAWN: SLM	PROJECT: 18022.01		
CHECKED: RLJ	DATE: SEPTEMBER 2020		



McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301



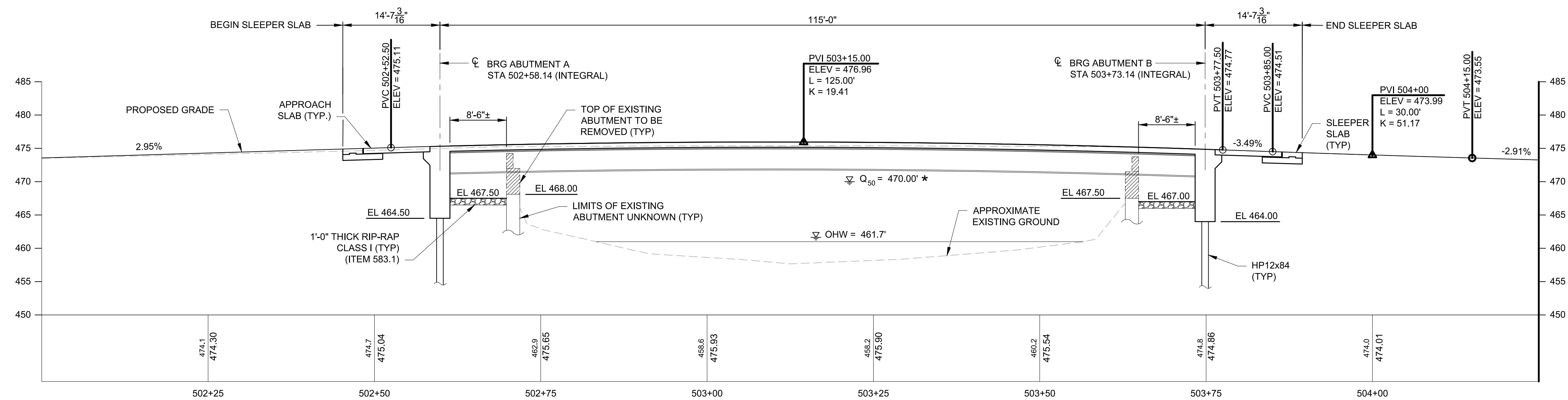
SITE PLAN
SCALE: 1" = 10'

BORING NOTES:

- BORINGS INDICATED THUS: WERE MADE BY GZA GEOENVIRONMENTAL, INC. IN JANUARY 2019.
- BORINGS ARE FOR DESIGN PURPOSES SHOWING CONDITIONS AT BORING POINTS ONLY AND DO NOT NECESSARILY INDICATE MATERIAL TO BE ENCOUNTERED DURING CONSTRUCTION.
- WATER LEVELS INDICATED THUS WERE MEASURED AT THE TIME OF EXPLORATION. THE WATER LEVELS ENCOUNTERED DURING CONSTRUCTION MAY VARY CONSIDERABLY DUE TO PREVAILING CLIMATE, RAINFALL, OR OTHER FACTORS.
- FOR BORING LOGS SEE BRIDGE SHEETS BR-09 & BR-10.

BORING LOCATIONS				
NUMBER	STATION	OFFSET	NORTHING	EASTING
B-1	502+60	6' LT.	156500.8406	817546.4041
B-2	503+77	15' LT.	156384.3585	817589.2366

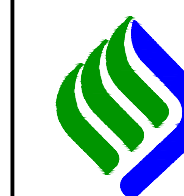
<p>McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301</p>				<p>CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION</p> <p>SITE PLAN</p>	
REV	DATE	DESCRIPTION	BY	DRAWN: DJD	PROJECT: 18022.01
				CHECKED: RLJ	DATE: SEPTEMBER 2021
				BR-05	121 OF 143



PROFILE - ISLAND STREET
SCALE: 1" = 10'

* OBTAINED FROM FEMA REPORT

REV	DATE	DESCRIPTION	BY

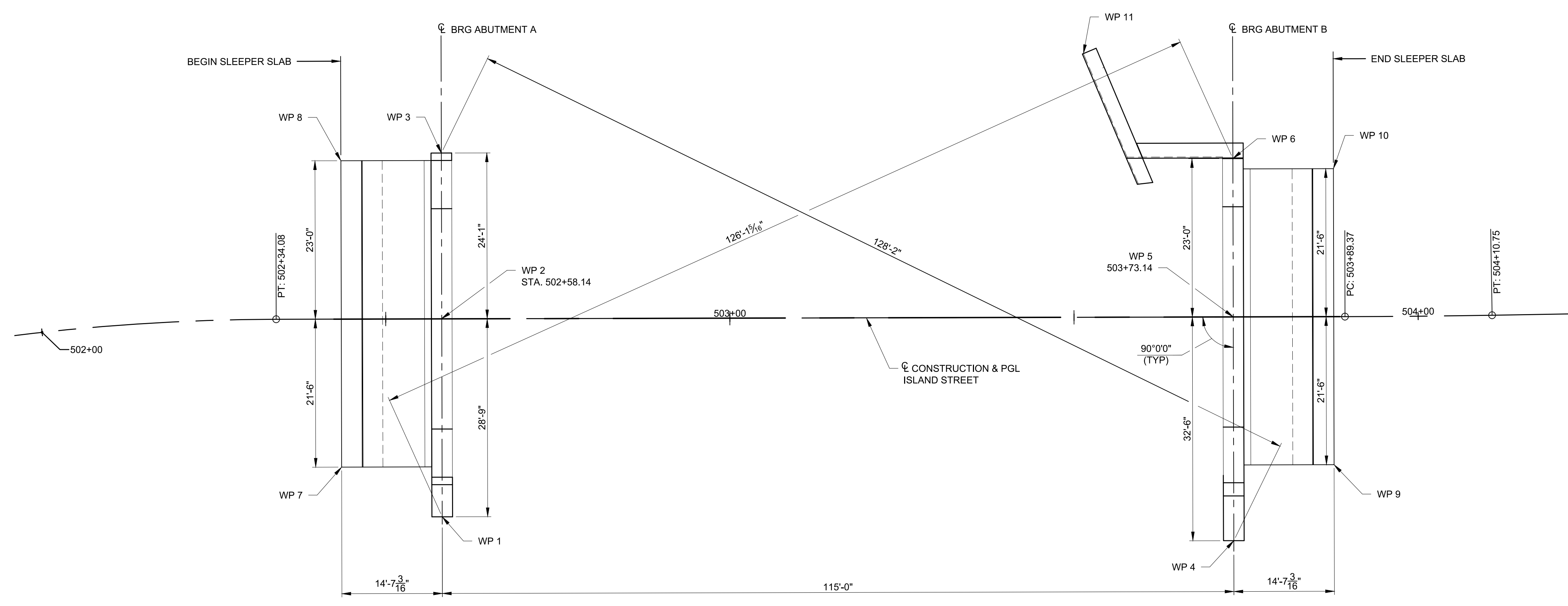
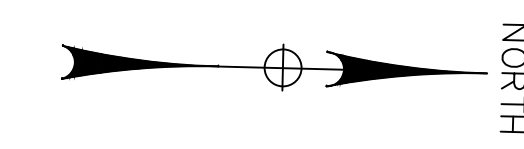


McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

**CITY OF KEENE
KEENE, NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION
BRIDGE PROFILE**

SCALE: AS SHOWN	DESIGN: SIW
DRAWN: DJD	PROJECT: 18022.01
CHECKED: RLJ	DATE: SEPTEMBER 2021


BR-06

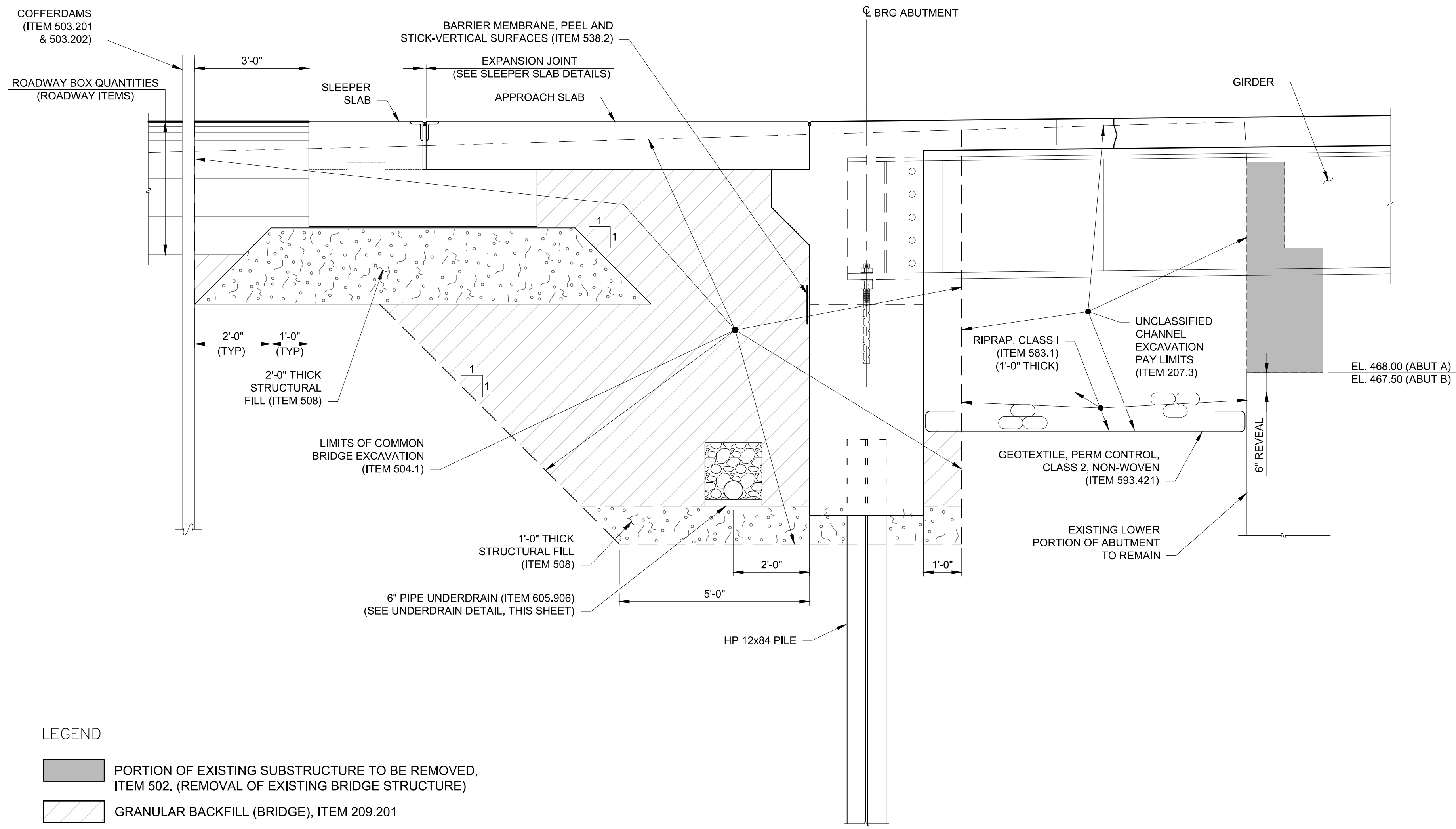




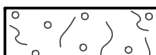
SURVEY LAYOUT PLAN
SCALE: 1" = 10'

WORKING POINT COORDINATES NH GRID SYSTEM		
WORKING POINT	NORTH	EAST
WP 1	156383.8504	817893.8317
WP 2 (STA 502+58.14)	156383.0381	817865.0932
WP 3	156382.3576	817841.0195
WP 4	156498.9105	817894.3307
WP 5 (STA 503+73.14)	156497.9921	817861.8436
WP 6	156497.3422	817838.8528
WP 7	156369.0524	817886.9971
WP 8	156367.7950	817842.5149
WP 9	156513.1928	817882.9225
WP 10	156511.9778	817839.9397
WP 11	156475.2477	817824.1694

NOTE:
1. ALL DIMENSIONS ARE FOR REFERENCE ONLY. LAYOUT PER COORDINATES.

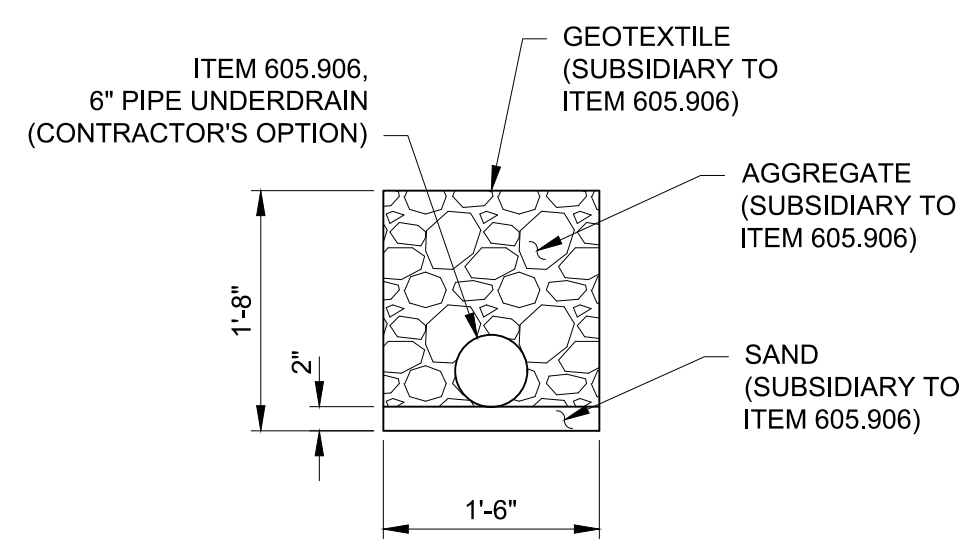
				CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
				SURVEY LAYOUT PLAN			
REV	DATE	DESCRIPTION	BY	 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301			
SCALE: AS SHOWN		DESIGN: SIW		DRAWN: DJD		PROJECT: 18022.01	
CHECKED: RLJ		DATE: SEPTEMBER 2020		BR-07		123 OF 142	



- LEGEND**
-  PORTION OF EXISTING SUBSTRUCTURE TO BE REMOVED, ITEM 502. (REMOVAL OF EXISTING BRIDGE STRUCTURE)
 -  GRANULAR BACKFILL (BRIDGE), ITEM 209.201
 -  STRUCTURAL FILL, ITEM 508.


TYPICAL ABUTMENT EARTHWORK SECTION
SCALE: 1/2" = 1'-0"

- NOTES:**
- SEE ABUTMENT MASONRY SHEETS FOR SLOPE AND TERMINATION OF UNDERDRAIN (SHEETS BR-11 AND BR-12).



UNDERDRAIN DETAIL
(SEE NOTE 1)
SCALE: 3/4" = 1'-0"

NOTE:
GEOTEXTILE, AGGREGATE, AND SAND SHALL MEET THE REQUIREMENT OF SECTION 605

CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
EARTHWORK SECTIONS			
REV	DATE	DESCRIPTION	BY
 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301			
SCALE: AS SHOWN		DESIGN: SIW	BR-08 124 OF 143
DRAWN: DJD		PROJECT: 18022.01	
CHECKED: RLJ		DATE: SEPTEMBER 2021	

TEST BORING REPORT										BORING NO. B-1	
STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION MATERIALS & RESEARCH BUREAU - GEOTECHNICAL SECTION										SHEET NO. 1 OF 3	
PROJECT NAME ISLAND STREET, KEENE 18022.01 BRIDGE NO. 125/069										STA. 502+60 OFF. LT 06	
DESCRIPTION Island Street Bridge Replacement										BASELINE Island St.	
										ELEVATION (ft) 475.0	
GROUNDWATER			EQUIPMENT		SAMPLER		CASING		CORE		
DATE	TIME	DEPTH (ft)	ELEV. (ft)	BOTTOM OF CASING	BOTTOM OF HOLE	TYPE: SIZE I.D. (in):	S	HW			
1/15/19	9:00 am	8.2	466.8			HAMMER WT. (lb):	140		DRILL RIG		
						HAMMER FALL (in):	30		Truck F50		
						HAMMER TYPE:	Safety				
DEPTH (ft)	STRATUM CHANGE (ft)	BLOWS PER 0.5 ft	SAMPLE NUMBER	SAMPLER RECOVERY (ft) [%]	DEPTH RANGE (ft)	FIELD CLASSIFICATION AND REMARKS					STRATUM SYMBOL
0	0.6	474.4	100/0.1			- ASPHALT - S-1, 0.5' - 0.6', 0.1' recovered. Asphalt - BOULDER -					
2.0	473.0				2.0	Medium dense, dark brown, FINE to MEDIUM SAND, little silt.					
9.4			S-2	1.0 [50]	4.0	Medium dense, brown, FINE to MEDIUM SAND, little silt.					
5.7			S-3	1.3 [65]	6.0	Very loose, brown, FINE to MEDIUM SAND, little silt, trace gravel.					
10.2			S-4	0.5 [25]	11.0	- SAND -					
15.1			S-5	0.4 [21]	16.0	- SAND - Very loose, brown, FINE to MEDIUM SAND, little silt, trace gravel.					
20.5			S-6	0.1 [4]	21.0	Loose, brown, FINE to MEDIUM SAND, little silt.					
25.6			S-7	0.4 [21]	26.0	Medium dense, dark gray, silty FINE SAND, trace gravel.					
28.0	447.0										

BOTTOM OF ABUTMENT A
EL. 464.50

Sampler	Identification	COHESIVE SOILS		NON-COHESIVE SOILS		Soil Descriptions	Proportion
		Blows/foot (N)	Consistency	Blows/foot (N)	Apparent Density	Capitalized Soil Name	Major Component
S	Standard Split Spoon	0 - 1	Very Soft	0 - 4	Very Loose	Lower Case Adjective	35% - 50%
SL	Large Spoon (O.D. = 3 in)	2 - 4	Soft	5 - 10	Loose	Some	20% - 35%
T	Thin Wall Tube	5 - 8	Medium Stiff	11 - 30	Medium Dense	Little	10% - 20%
U	Undisturbed Piston	9 - 15	Stiff	31 - 50	Dense	Trace	1% - 10%
O	Open End Rod	16 - 20	Very Stiff	> 50	Very Dense		
A	Auger Flight	> 30	Hard				
C	Core Barrel						
NR	Not Recorded						

TEST BORING REPORT										BORING NO. B-1	
STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION MATERIALS & RESEARCH BUREAU - GEOTECHNICAL SECTION										SHEET NO. 2 OF 3	
PROJECT NAME ISLAND STREET, KEENE 18022.01 BRIDGE NO. 125/069										STA. 502+60 OFF. LT 06	
DESCRIPTION Island Street Bridge Replacement										BASELINE Island St.	
										ELEVATION (ft) 475.0	
DEPTH (ft)	STRATUM CHANGE (ft)	BLOWS PER 0.5 ft	SAMPLE NUMBER	SAMPLER RECOVERY (ft) [%]	DEPTH RANGE (ft)	FIELD CLASSIFICATION AND REMARKS					STRATUM SYMBOL
30			WOR/12		29.0	Very loose, gray, SILT, trace fine sand.					
31.0					31.0	- SILT -					
34.0			WOR/24		34.0	- SILT -					
35			S-9	2.0 [100]	36.0	Very loose, gray, clayey SILT, trace fine to medium sand.					
39.0	436.0		WOH/24		39.0	Very soft, gray, silty CLAY. Pocket penetrometer: 1.15 tsf Torvane: 1.5 tsf					
41.0					41.0						
49.0			WOR/24		49.0	Very soft, gray, silty CLAY. Pocket penetrometer: 1.0 tsf Torvane: 1.5 tsf					
51.0					51.0	- SILTY CLAY -					
59.0			WOH/24		59.0	Very soft, gray, silty CLAY. Pocket penetrometer: 1.15 tsf Torvane: 1.5 tsf					
61.0					61.0	- SILTY CLAY -					

TEST BORING REPORT										BORING NO. B-1	
STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION MATERIALS & RESEARCH BUREAU - GEOTECHNICAL SECTION										SHEET NO. 3 OF 3	
PROJECT NAME ISLAND STREET, KEENE 18022.01 BRIDGE NO. 125/069										STA. 502+60 OFF. LT 06	
DESCRIPTION Island Street Bridge Replacement										BASELINE Island St.	
										ELEVATION (ft) 475.0	
DEPTH (ft)	STRATUM CHANGE (ft)	BLOWS PER 0.5 ft	SAMPLE NUMBER	SAMPLER RECOVERY (ft) [%]	DEPTH RANGE (ft)	FIELD CLASSIFICATION AND REMARKS					STRATUM SYMBOL
66.0			WOR/24		66.0	Very soft, gray, silty CLAY. Pocket penetrometer: 0.7 tsf Torvane: 1.2 tsf					
71.0			S-13	2.0 [100]	71.0	- SILTY CLAY -					
79.0			WOR/18		79.0	Very soft, gray, silty CLAY. Pocket penetrometer: 0.6 tsf Torvane: 1.2 tsf					
81.0					81.0						
89.0	386.0	21	S-14	1.4 [71]	89.0	- SAND - Dense, gray, silty FINE to COARSE SAND, little gravel.					
90.9	384.1	10 23 100/0.4			90.9	(Advanced roller bit into bedrock from 91 to 93 feet below ground surface)					
93.0					93.0	- BEDROCK - Bottom of Exploration @ 93.0 ft (El. 382.0)					

NOTE:

- FOR BORING LOCATIONS AND NOTES, SEE BR-05.
- BORINGS WERE MADE BY GZA ENVIRONMENTAL, INC. IN JANUARY 2019.

CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION BORING LOGS (1 OF 2)			
REV	DATE	DESCRIPTION	BY
McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301			
SCALE: AS SHOWN		DESIGN: SIW	
DRAWN: DJD		PROJECT: 18022.01	
CHECKED: RLJ		DATE: SEPTEMBER 2021	
			BR-09 125 OF 143

TEST BORING REPORT										BORING NO. B-2																																																																																										
STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION MATERIALS & RESEARCH BUREAU - GEOTECHNICAL SECTION										SHEET NO. <u>1</u> OF <u>3</u>																																																																																										
PROJECT NAME ISLAND STREET, KEENE 18022.01 BRIDGE NO. 125/069										STA. <u>503+77</u> OFF. <u>LT 15</u>																																																																																										
DESCRIPTION <u>Island Street Bridge Replacement</u>										BASELINE <u>Island St.</u>																																																																																										
ELEVATION (ft) <u>474.5</u>										START/END <u>1/15/19 / 1/16/19</u>																																																																																										
DRILLER <u>P. Labossiere (NEBC)</u>										INSPECTOR <u>A. Martin</u>																																																																																										
CLASSIFIER <u>A. Martin</u>										EAST/NORTH (ft) <u>-- / --</u>																																																																																										
GROUNDWATER			EQUIPMENT		SAMPLER		CASING		CORE																																																																																											
DATE	TIME	DEPTH (ft)	ELEV. (ft)	BOTTOM OF CASING (ft)	TYPE	S	HW																																																																																													
1/16/19	1:00 pm	7.8	466.7	30	HAMMER WT. (lb):	140		DRILL RIG																																																																																												
					HAMMER FALL (in):	30		Truck F50																																																																																												
					HAMMER TYPE:	Safety																																																																																														
DEPTH (ft)	STRATUM CHANGE (ft)	BLOWS PER 0.5 ft	SAMPLE NUMBER	SAMPLER RECOVERY (ft) [%]	DEPTH RANGE (ft)	FIELD CLASSIFICATION AND REMARKS					STRATUM SYMBOL																																																																																									
0						- ASPHALT -																																																																																														
1.0	473.5	80			1.0																																																																																															
13		5	S-1	1.0 [50]	3.0	Medium dense, brown, FINE to COARSE SAND, little gravel, trace silt.																																																																																														
7		4	S-2	1.1 [54]	5.0	Medium dense, brown, silty FINE to COARSE SAND, trace gravel.																																																																																														
5		5	S-3	1.0 [50]	7.0	Loose, brown, FINE to MEDIUM SAND, trace silt.																																																																																														
4		4	S-4	0.6 [29]	9.0	Loose, brown, FINE to MEDIUM SAND, little silt, trace gravel.																																																																																														
10		4			11.0	- SAND -																																																																																														
15		6	S-5	0.5 [25]	14.0	Medium dense, brown, FINE to COARSE SAND, little gravel, trace silt.																																																																																														
6		8			16.0																																																																																															
20		5	S-6	0.5 [25]	19.0	Loose, brown, gravelly FINE to COARSE SAND, trace silt.																																																																																														
4		2			21.0																																																																																															
25	24.0	7	S-7	0.8 [42]	24.0	Loose, gray, silty FINE SAND, trace gravel.																																																																																														
3		2			26.0	- SILTY SAND -																																																																																														
<table border="1"> <thead> <tr> <th>Sampler</th> <th>Identification</th> <th colspan="2">COHESIVE SOILS</th> <th colspan="2">NON-COHESIVE SOILS</th> <th colspan="2">Soil Descriptions</th> <th colspan="2">Proportion</th> </tr> <tr> <td>S</td> <td>Standard Split Spoon</td> <td>Blows/foot (N)</td> <td>Consistency</td> <td>Blows/foot (N)</td> <td>Apparent Density</td> <td>Capitalized Soil Name</td> <td>Lower Case Adjective</td> <td colspan="2">Major Component</td> </tr> </thead> <tbody> <tr> <td>SL</td> <td>Large Spoon (O.D. = 3 in)</td> <td>0 - 1</td> <td>Very Soft</td> <td>0 - 4</td> <td>Very Loose</td> <td></td> <td></td> <td colspan="2">35% - 50%</td> </tr> <tr> <td>T</td> <td>Thin Wall Tube</td> <td>2 - 4</td> <td>Soft</td> <td>5 - 10</td> <td>Loose</td> <td></td> <td>Some</td> <td colspan="2">20% - 35%</td> </tr> <tr> <td>U</td> <td>Undisturbed Piston</td> <td>5 - 8</td> <td>Medium Stiff</td> <td>11 - 30</td> <td>Medium Dense</td> <td></td> <td>Little</td> <td colspan="2">10% - 20%</td> </tr> <tr> <td>O</td> <td>Open End Rod</td> <td>9 - 15</td> <td>Stiff</td> <td>31 - 50</td> <td>Dense</td> <td></td> <td>Trace</td> <td colspan="2">1% - 10%</td> </tr> <tr> <td>A</td> <td>Auger Flight</td> <td>16 - 20</td> <td>Very Stiff</td> <td>> 50</td> <td>Very Dense</td> <td></td> <td></td> <td colspan="2"></td> </tr> <tr> <td>C</td> <td>Core Barrel</td> <td>> 30</td> <td>Hard</td> <td></td> <td></td> <td></td> <td></td> <td colspan="2"></td> </tr> <tr> <td>NR</td> <td>Not Recorded</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td colspan="2"></td> </tr> </tbody> </table>											Sampler	Identification	COHESIVE SOILS		NON-COHESIVE SOILS		Soil Descriptions		Proportion		S	Standard Split Spoon	Blows/foot (N)	Consistency	Blows/foot (N)	Apparent Density	Capitalized Soil Name	Lower Case Adjective	Major Component		SL	Large Spoon (O.D. = 3 in)	0 - 1	Very Soft	0 - 4	Very Loose			35% - 50%		T	Thin Wall Tube	2 - 4	Soft	5 - 10	Loose		Some	20% - 35%		U	Undisturbed Piston	5 - 8	Medium Stiff	11 - 30	Medium Dense		Little	10% - 20%		O	Open End Rod	9 - 15	Stiff	31 - 50	Dense		Trace	1% - 10%		A	Auger Flight	16 - 20	Very Stiff	> 50	Very Dense					C	Core Barrel	> 30	Hard							NR	Not Recorded								
Sampler	Identification	COHESIVE SOILS		NON-COHESIVE SOILS		Soil Descriptions		Proportion																																																																																												
S	Standard Split Spoon	Blows/foot (N)	Consistency	Blows/foot (N)	Apparent Density	Capitalized Soil Name	Lower Case Adjective	Major Component																																																																																												
SL	Large Spoon (O.D. = 3 in)	0 - 1	Very Soft	0 - 4	Very Loose			35% - 50%																																																																																												
T	Thin Wall Tube	2 - 4	Soft	5 - 10	Loose		Some	20% - 35%																																																																																												
U	Undisturbed Piston	5 - 8	Medium Stiff	11 - 30	Medium Dense		Little	10% - 20%																																																																																												
O	Open End Rod	9 - 15	Stiff	31 - 50	Dense		Trace	1% - 10%																																																																																												
A	Auger Flight	16 - 20	Very Stiff	> 50	Very Dense																																																																																															
C	Core Barrel	> 30	Hard																																																																																																	
NR	Not Recorded																																																																																																			

BOTTOM OF ABUTMENT B
EL. 464.00

TB 12: P:\M\BESIGHT PROJECT DATABASES\04 0100014.00 - DOT ISLAND STREET BRIDGE NO. 125-069.GPJ 1/24/2019 1:20:03 PM TB-12

TEST BORING REPORT										BORING NO. B-2	
STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION MATERIALS & RESEARCH BUREAU - GEOTECHNICAL SECTION										SHEET NO. <u>2</u> OF <u>3</u>	
PROJECT NAME ISLAND STREET, KEENE 18022.01 BRIDGE NO. 125/069										STA. <u>503+77</u> OFF. <u>LT 15</u>	
DESCRIPTION <u>Island Street Bridge Replacement</u>										BASELINE <u>Island St.</u>	
ELEVATION (ft) <u>474.5</u>										START/END <u>1/15/19 / 1/16/19</u>	
DRILLER <u>P. Labossiere (NEBC)</u>										INSPECTOR <u>A. Martin</u>	
CLASSIFIER <u>A. Martin</u>										EAST/NORTH (ft) <u>-- / --</u>	
DEPTH (ft)	STRATUM CHANGE (ft)	BLOWS PER 0.5 ft	SAMPLE NUMBER	SAMPLER RECOVERY (ft) [%]	DEPTH RANGE (ft)	FIELD CLASSIFICATION AND REMARKS					STRATUM SYMBOL
30	29.0	445.5	WOH/24		29.0	Very soft, gray, silty CLAY. Pocket penetrometer: 0.7 tsf Torvane: 1.2 tsf					
			S-8	1.5 [75]	31.0						
35			WOH/24		34.0	Very soft, gray, silty CLAY. Pocket penetrometer: 0.7 tsf Torvane: 1.2 tsf					
			S-9	1.2 [58]	36.0						
40			WOH/24		39.0	Very soft, gray, SILT & CLAY. Pocket penetrometer: 0.9 tsf Torvane: 2.5 tsf					
			S-10	1.5 [75]	41.0	- SILTY CLAY -					
45											
50			WOH/24		49.0	No Recovery					
			S-11	0.0 [0]	51.0						
55						- SILTY CLAY -					
60			WOH/24		59.0	Very soft, gray, SILT & CLAY. Pocket penetrometer: 1.1 tsf Torvane: 1.2 tsf					
			S-12	2.0 [100]	61.0	- SILTY CLAY -					
65											


TB 13: P:\M\BESIGHT PROJECT DATABASES\04 0100014.00 - DOT ISLAND STREET BRIDGE NO. 125-069.GPJ 1/24/2019 1:20:03 PM TB-13

TEST BORING REPORT										BORING NO. B-2	
STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION MATERIALS & RESEARCH BUREAU - GEOTECHNICAL SECTION										SHEET NO. <u>3</u> OF <u>3</u>	
PROJECT NAME ISLAND STREET, KEENE 18022.01 BRIDGE NO. 125/069										STA. <u>503+77</u> OFF. <u>LT 15</u>	
DESCRIPTION <u>Island Street Bridge Replacement</u>										BASELINE <u>Island St.</u>	
ELEVATION (ft) <u>474.5</u>										START/END <u>1/15/19 / 1/16/19</u>	
DRILLER <u>P. Labossiere (NEBC)</u>										INSPECTOR <u>A. Martin</u>	
CLASSIFIER <u>A. Martin</u>										EAST/NORTH (ft) <u>-- / --</u>	
DEPTH (ft)	STRATUM CHANGE (ft)	BLOWS PER 0.5 ft	SAMPLE NUMBER	SAMPLER RECOVERY (ft) [%]	DEPTH RANGE (ft)	FIELD CLASSIFICATION AND REMARKS					STRATUM SYMBOL
70			WOH/24		69.0	Very soft, gray, CLAY & SILT. Pocket penetrometer: 0.6 tsf Torvane: 1.3 tsf					
			S-13	2.0 [100]	71.0	- SILTY CLAY -					
75											
80			WOH/24		79.0	Very soft, gray, SILT & CLAY. Pocket penetrometer: 0.6 tsf Torvane: 1.2 tsf					
			S-14	1.1 [54]	81.0						
85	84.0	390.5	7	5	84.0	Loose, gray, silty FINE to COARSE SAND, trace gravel.					
			S-15	0.2 [8]	86.0	- SILTY SAND -					
90			49	23	89.0	Dense, gray, silty FINE to COARSE SAND, trace gravel.					
			16	19	91.0	(Advanced roller bit to bedrock from approximately 91 to 93 feet below ground surface)					
						- BEDROCK -					
						Bottom of Exploration @ 93.0 ft (El. 381.5)					
95											
100											

TB 14: P:\M\BESIGHT PROJECT DATABASES\04 0100014.00 - DOT ISLAND STREET BRIDGE NO. 125-069.GPJ 1/24/2019 1:20:03 PM TB-14

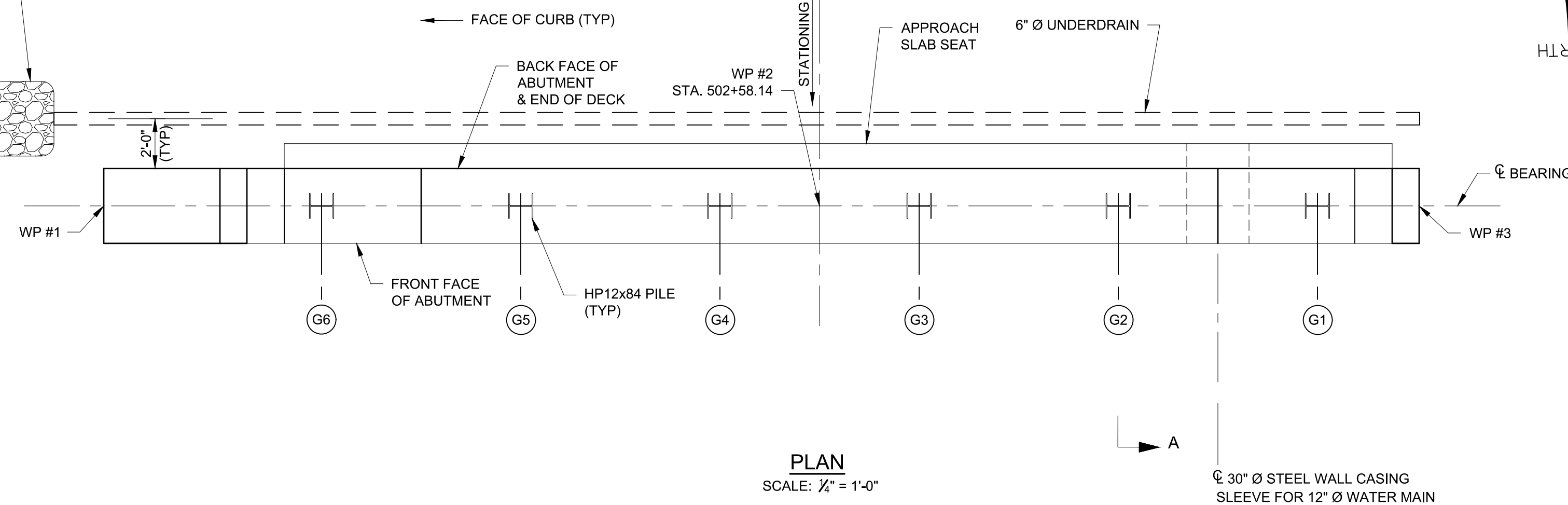
NOTE:

- FOR BORING LOCATIONS AND NOTES, SEE BR-05.
- BORINGS WERE MADE BY GZA ENVIRONMENTAL, INC. IN JANUARY 2019.

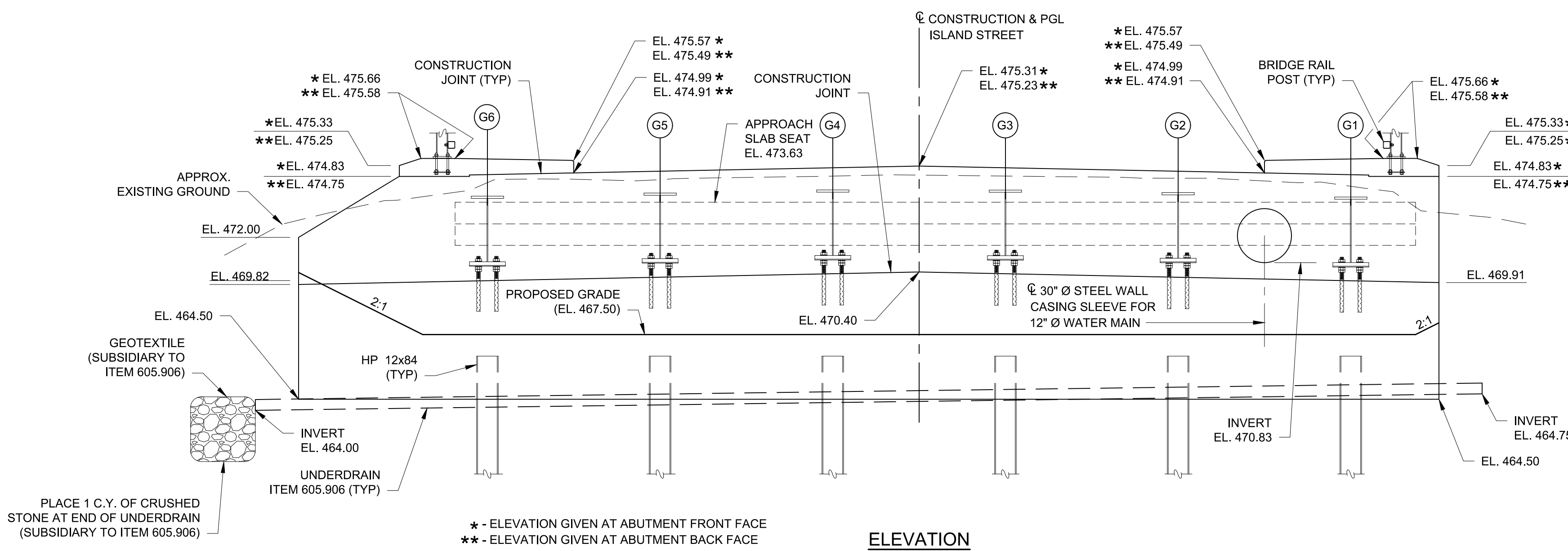
CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION BORING LOGS (2 OF 2)			
REV	DATE	DESCRIPTION	BY
 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301			
SCALE: AS SHOWN		DESIGN: SIW	
DRAWN: DJD		PROJECT: 18022.01	
CHECKED: RLJ		DATE: SEPTEMBER 2021	
			BR-10 126 OF 143

PLACE 1 C.Y. OF CRUSHED STONE AT END OF UNDERDRAIN (SUBSIDIARY TO ITEM 605.906)

GEOTEXTILE (SUBSIDIARY TO ITEM 605.906)

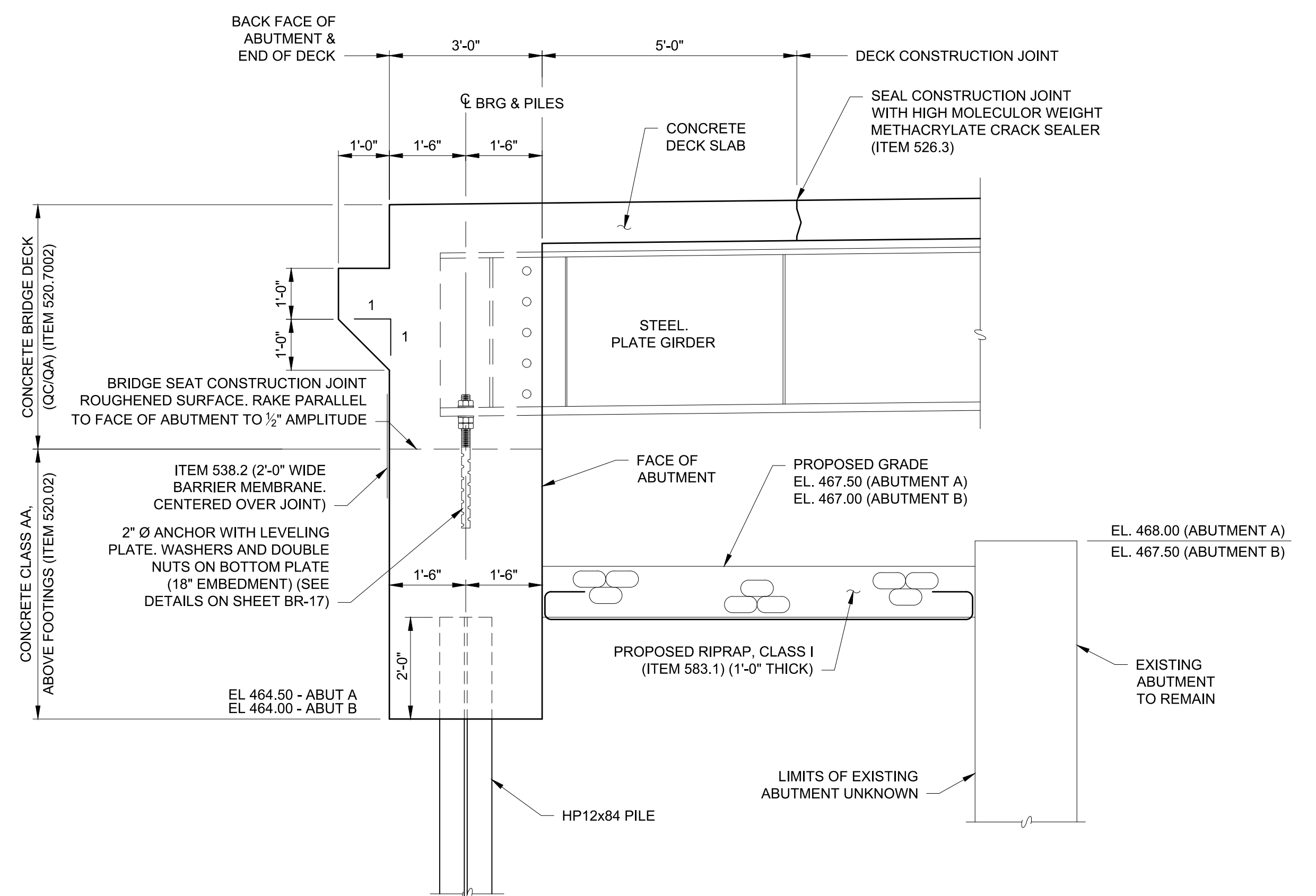


PLAN
SCALE: 1/4" = 1'-0"



ELEVATION
SCALE: 1/4" = 1'-0"


* - ELEVATION GIVEN AT ABUTMENT FRONT FACE
** - ELEVATION GIVEN AT ABUTMENT BACK FACE



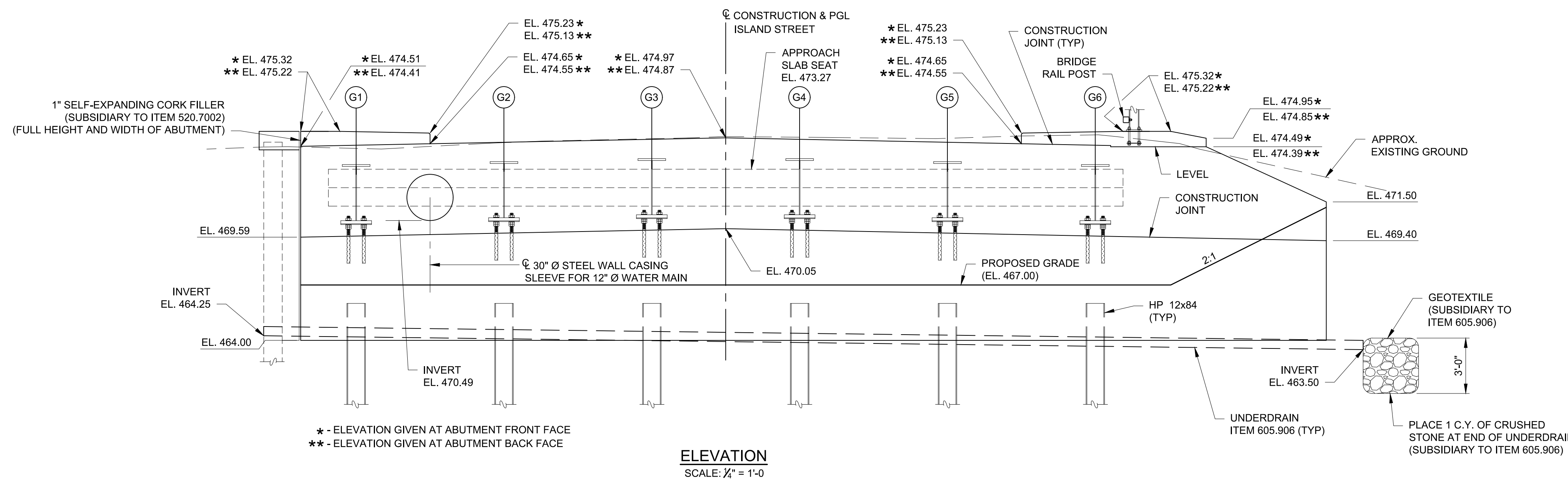
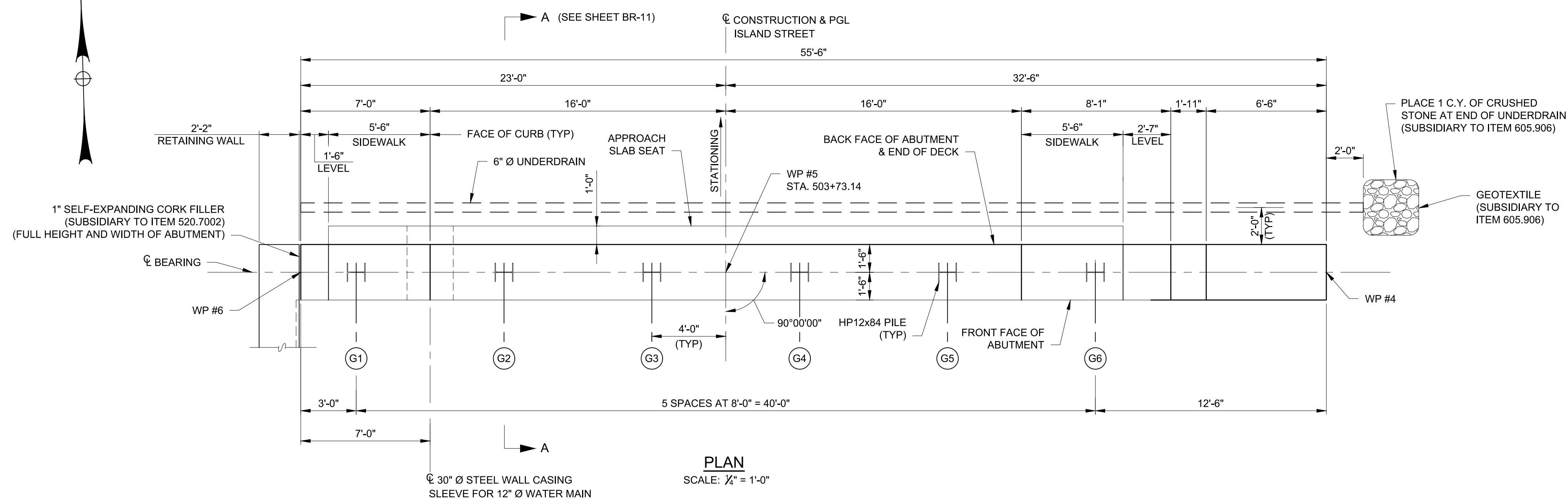
SECTION A-A
SCALE: 1/2" = 1'-0"

NOTES:

1. SEE SHEET BR-17 FOR GIRDER BEARING DETAILS.
2. SEE BR-27 FOR WATERLINE GEOMETRY AT ABUTMENT.
3. SEE BR-08 FOR EARTHWORK SECTION.


CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION ABUTMENT A MASONRY			
REV	DATE	DESCRIPTION	BY
 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301			
SCALE: AS SHOWN		DESIGN: SIW	BR-11 127 OF 142
DRAWN: DJD		PROJECT: 18022.01	
CHECKED: RLJ		DATE: SEPTEMBER 2020	

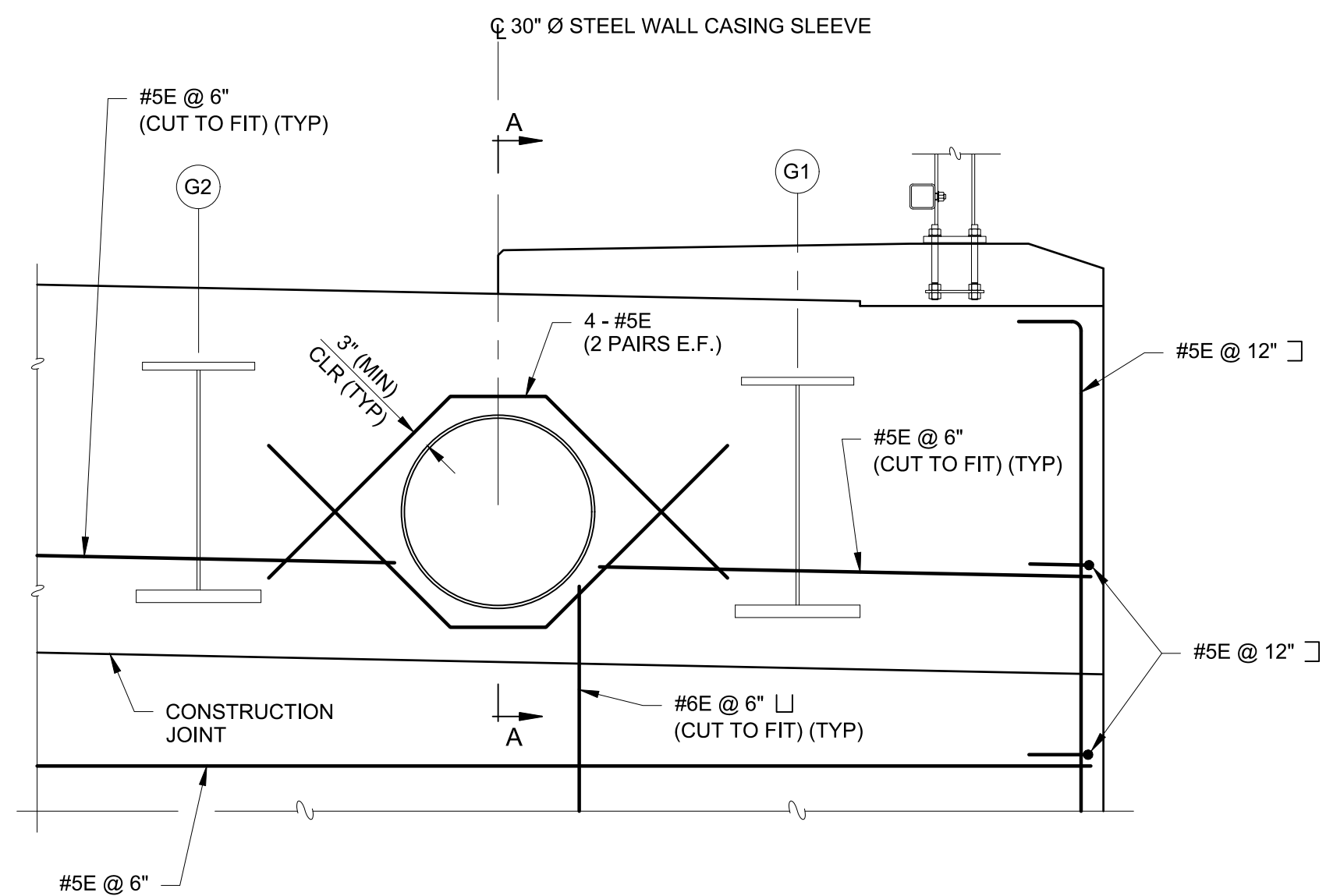
NORTH



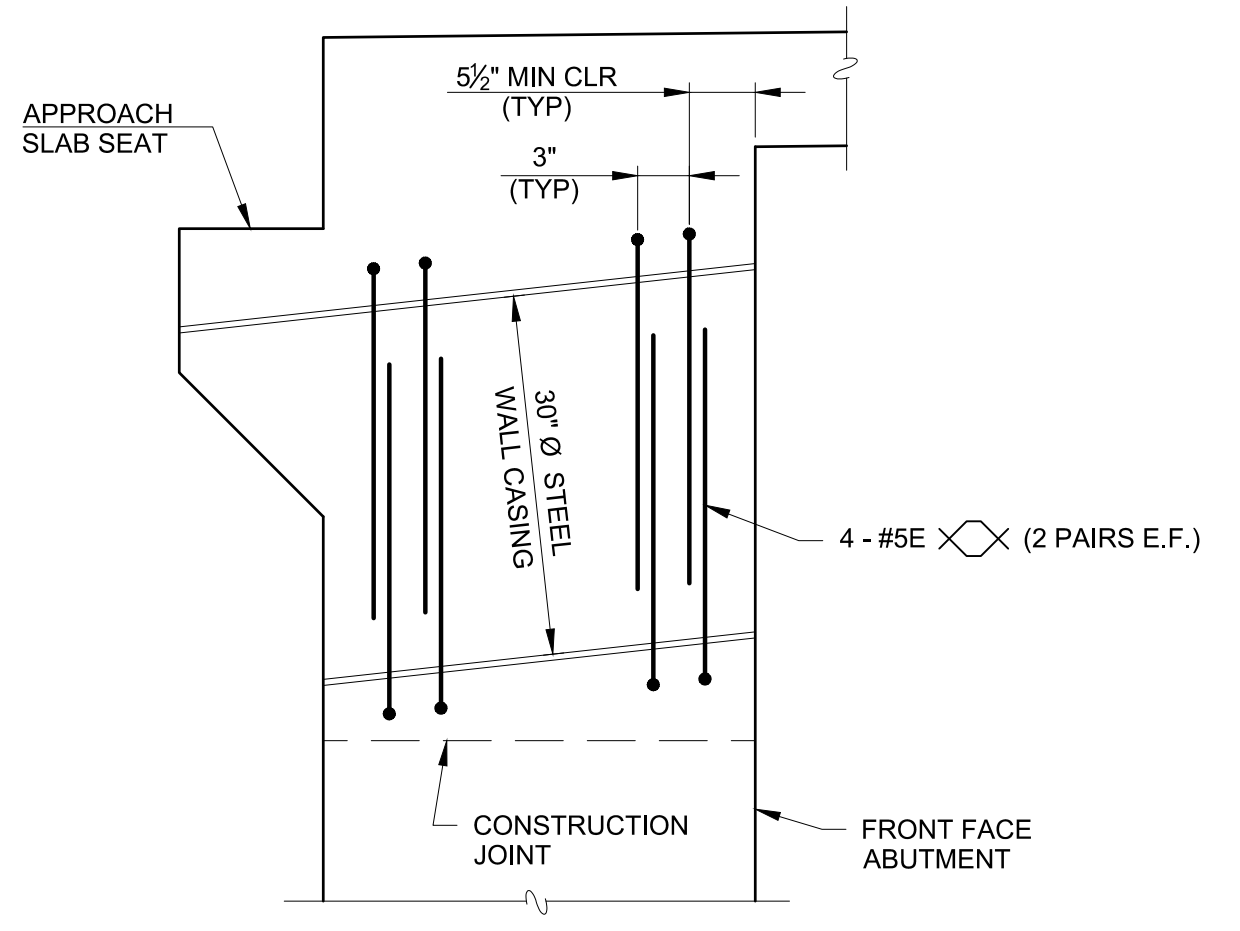
NOTES:

1. SEE SHEET BR-17 FOR GIRDER BEARING DETAILS.
2. SEE BR-27 FOR WATERLINE GEOMETRY AT ABUTMENT.
3. SEE BR-08 FOR EARTHWORK SECTION.

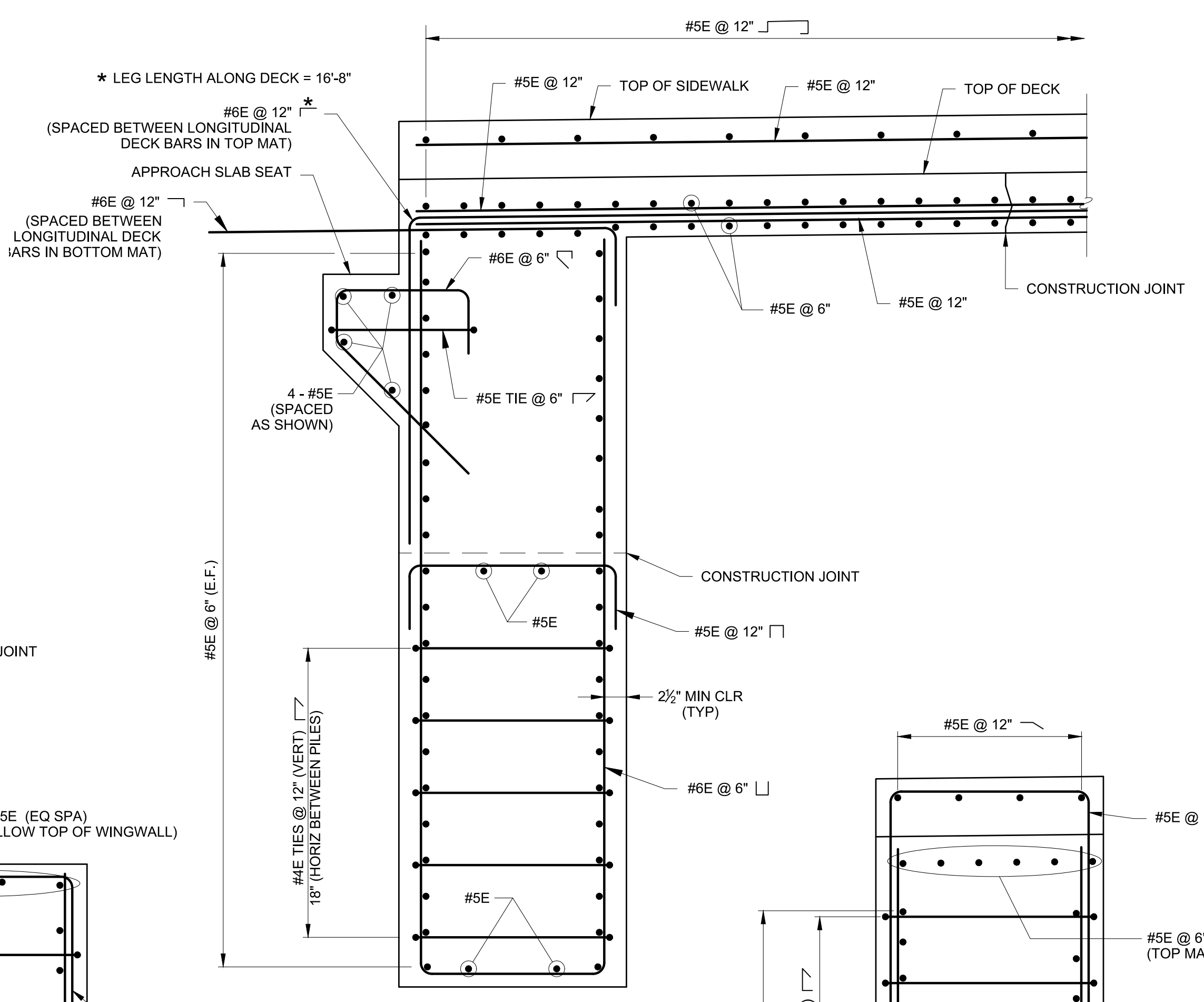
CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION ABUTMENT B MASONRY			
REV	DATE	DESCRIPTION	BY
		McFarland Johnson	
53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301		SCALE: AS SHOWN	DESIGN: SIW
		DRAWN: SLM	PROJECT: 18022.01
		CHECKED: RLJ	DATE: SEPTEMBER 2020
BR-12			128 OF 142



BLOCKOUT FOR WATER MAIN
(ABUTMENT A SHOWN, ABUTMENT B SIMILAR)
SCALE: 1/2" = 1'-0"

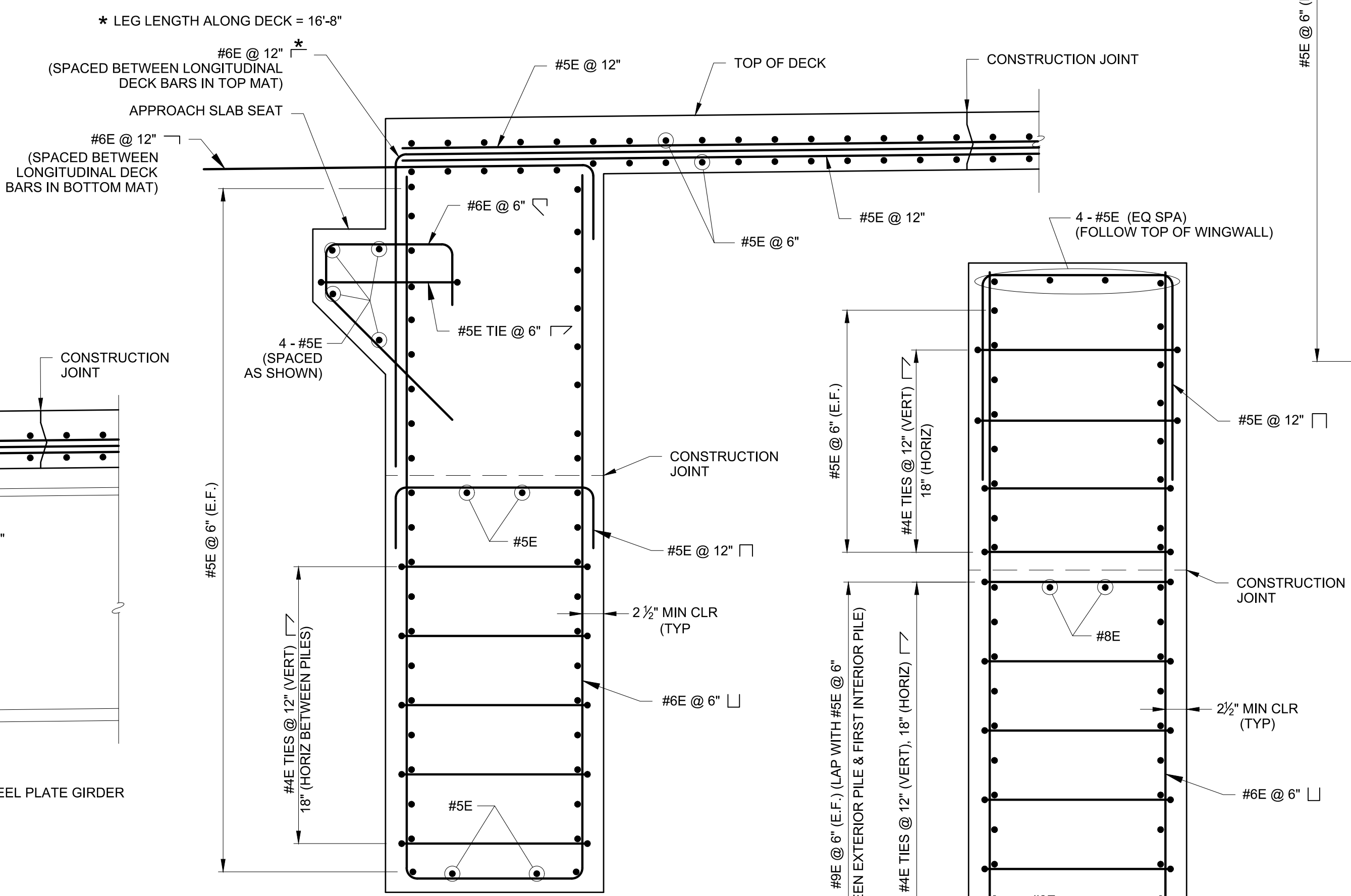


SECTION A-A
SCALE: 3/4" = 1'-0"

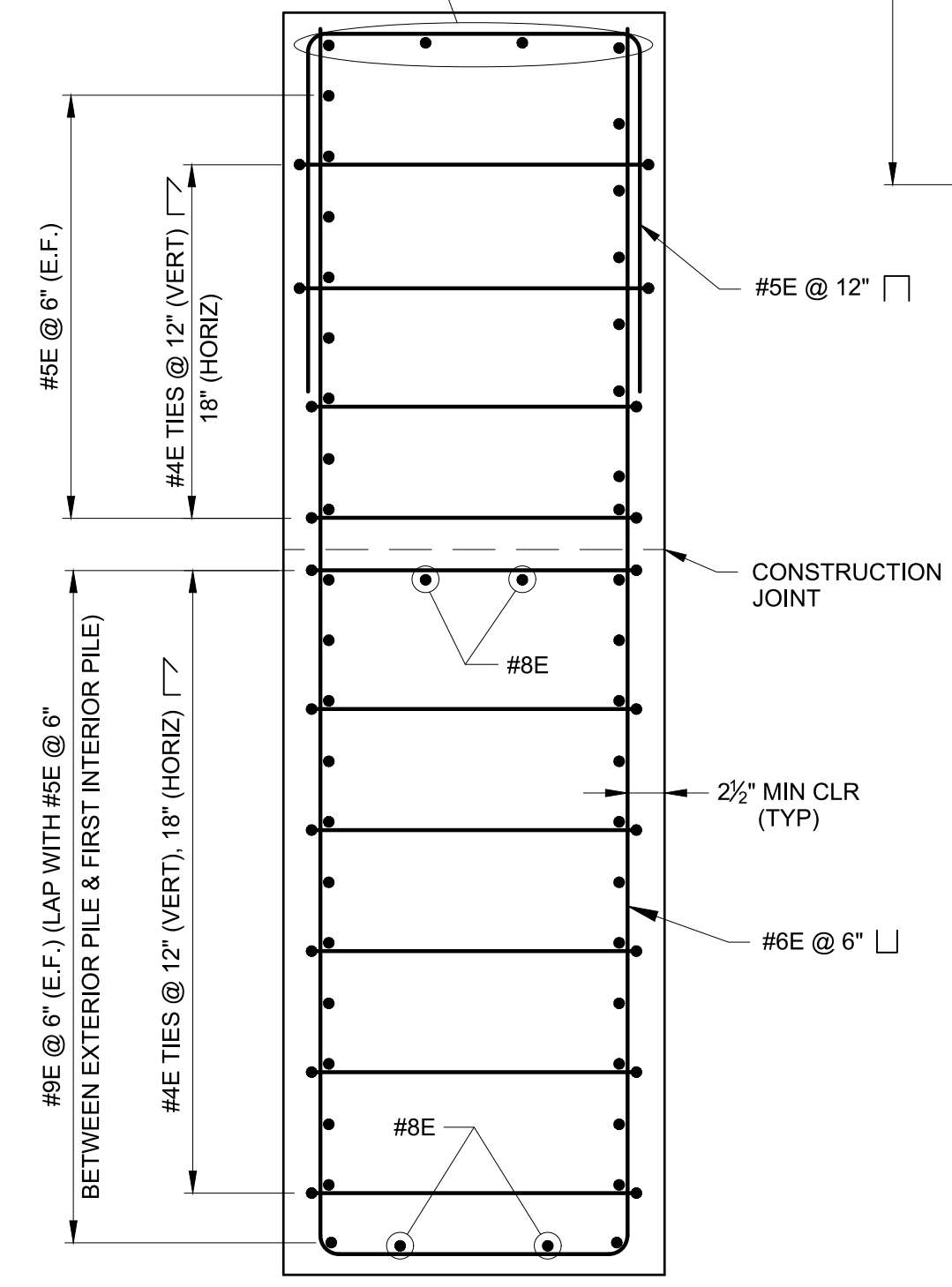


SECTION THRU ABUTMENT (AT SIDEWALK)
SCALE: 3/4" = 1'-0"

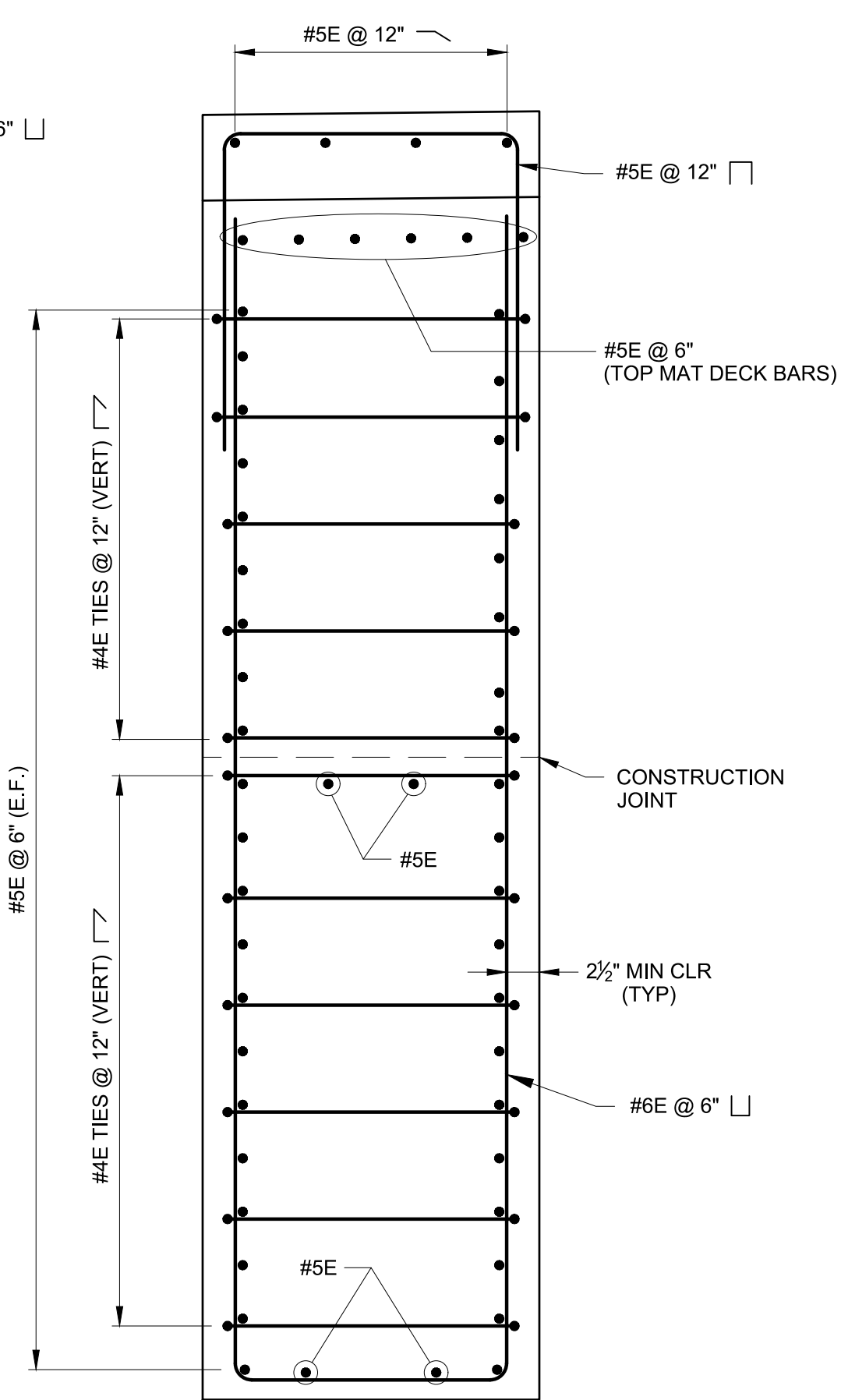
NOTE:
1. PROVIDE #5E @ 12" □, BOTH HORIZONTALLY AND VERTICALLY AT THE NW AND SW END BELOW THE CONSTRUCTION JOINT AND BOTH ABOVE AND BELOW THE CONSTRUCTION JOINT AT THE NE AND SE ENDS. THE VERTICAL BAR AT THE SW AND NW ENDS SHALL EXTEND THROUGH THE CONSTRUCTION JOINT (SEE BLOCKOUT FOR WATER MAIN DETAIL)



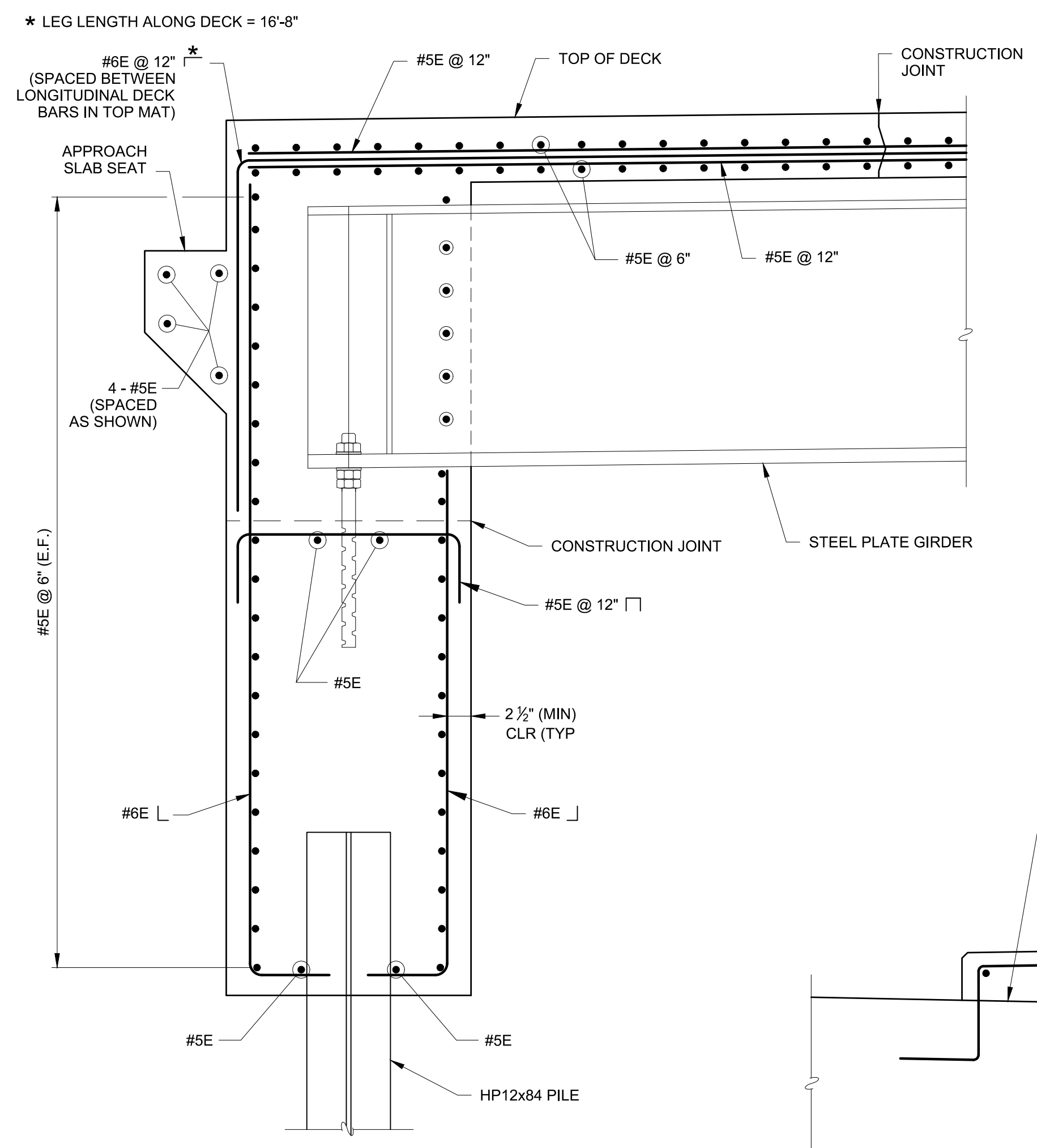
SECTION THRU ABUTMENT
SCALE: 3/4" = 1'-0"



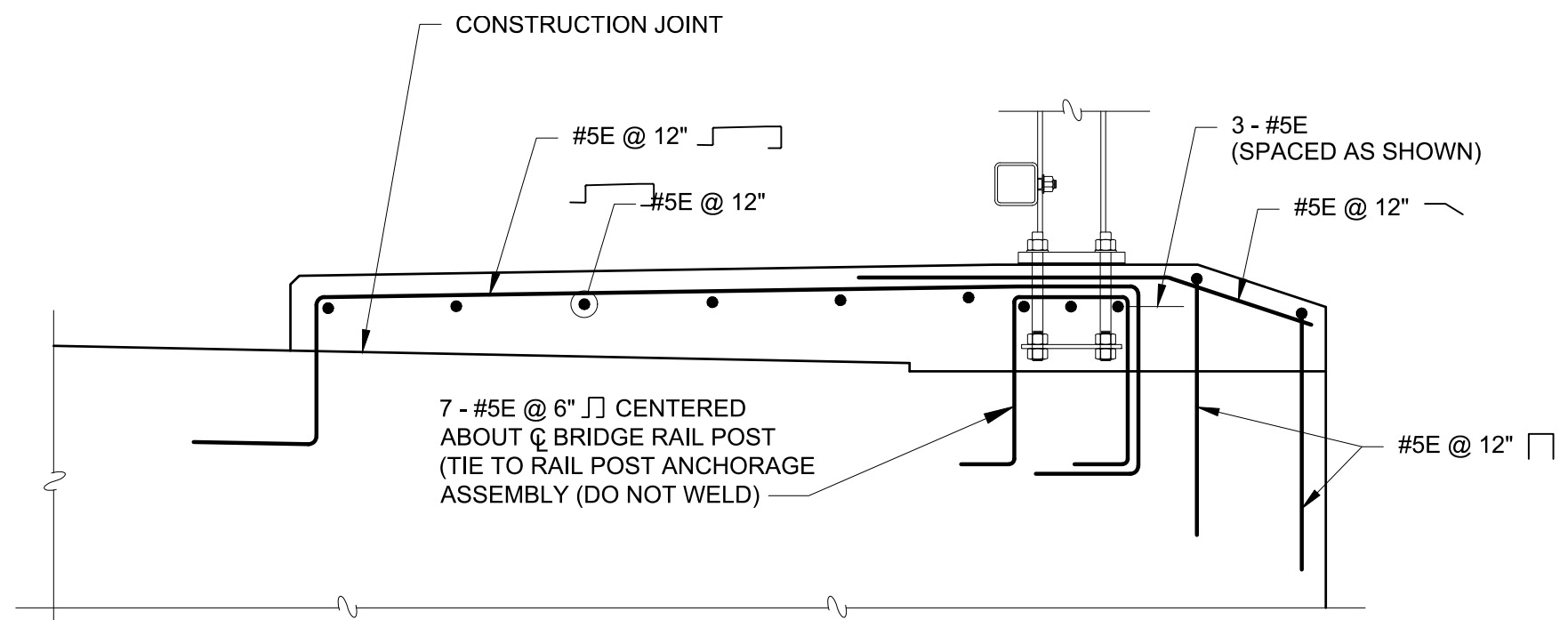
SECTION THRU NE AND SE WINGWALLS
SCALE: 3/4" = 1'-0"



SECTION THRU SW WINGWALL
SCALE: 3/4" = 1'-0"



SECTION THRU ABUTMENT (AT GIRDER & PILE LOCATION)
SCALE: 3/4" = 1'-0"



TRANSVERSE SECTION THRU SIDEWALK (AT ABUTMENT)
SCALE: 3/4" = 1'-0"

REINFORCEMENT LAP SPLICE LENGTH	
BAR SIZE	LENGTH (in)
#3	23.0
#4	30.0
#5	38.0
#6	45.0
#7	52.0
#8	59.0
#9	76.0

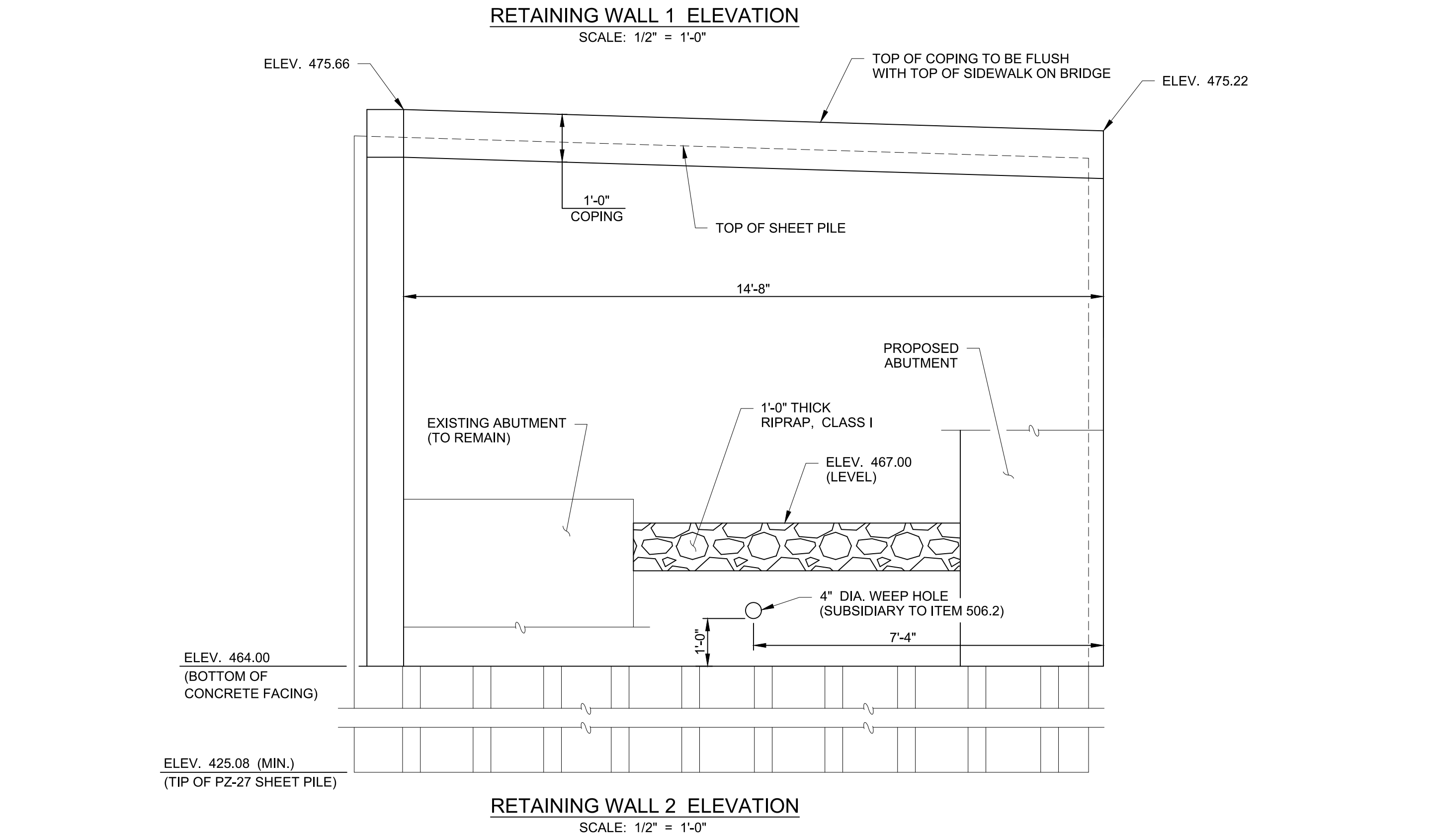
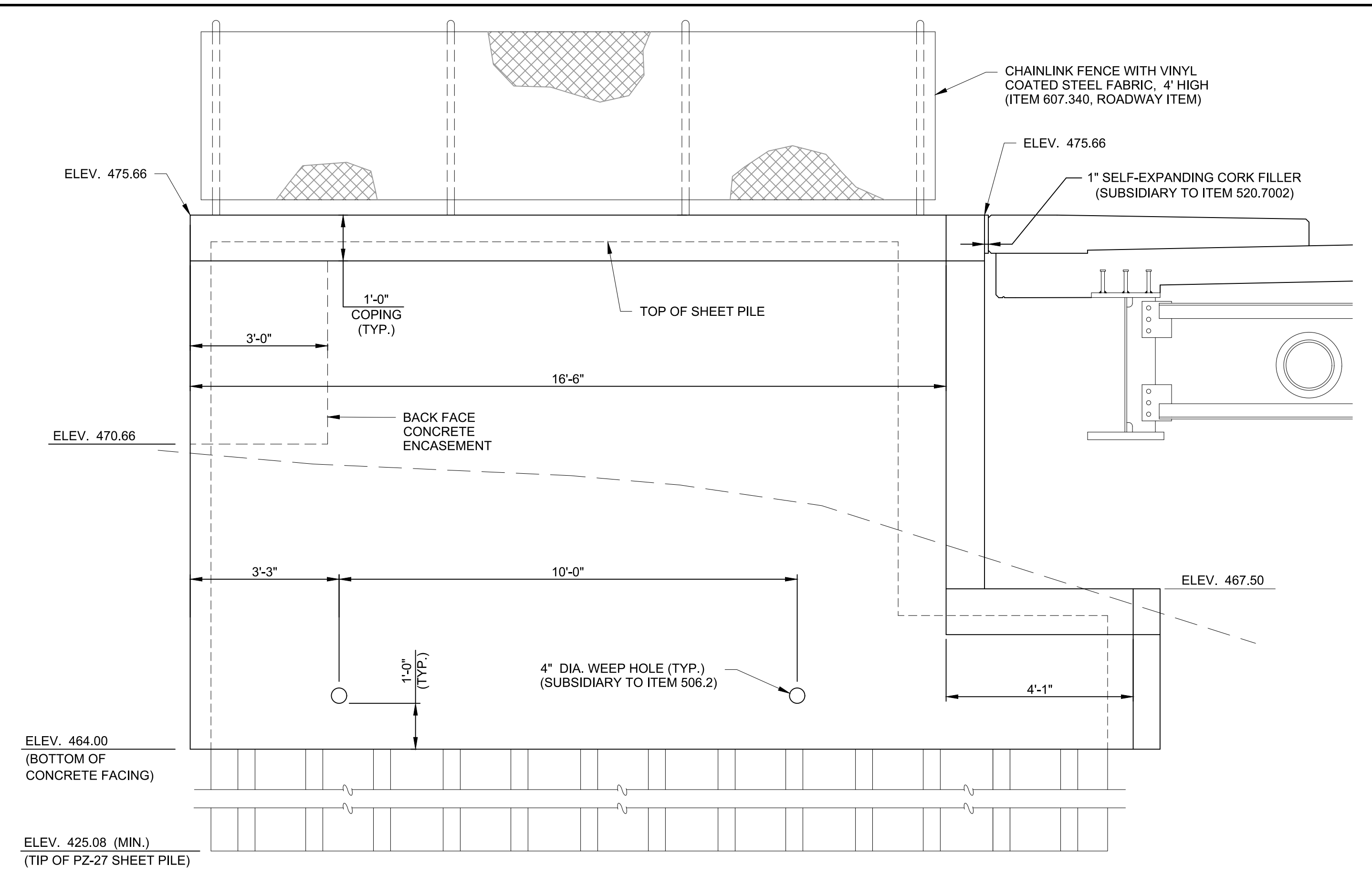
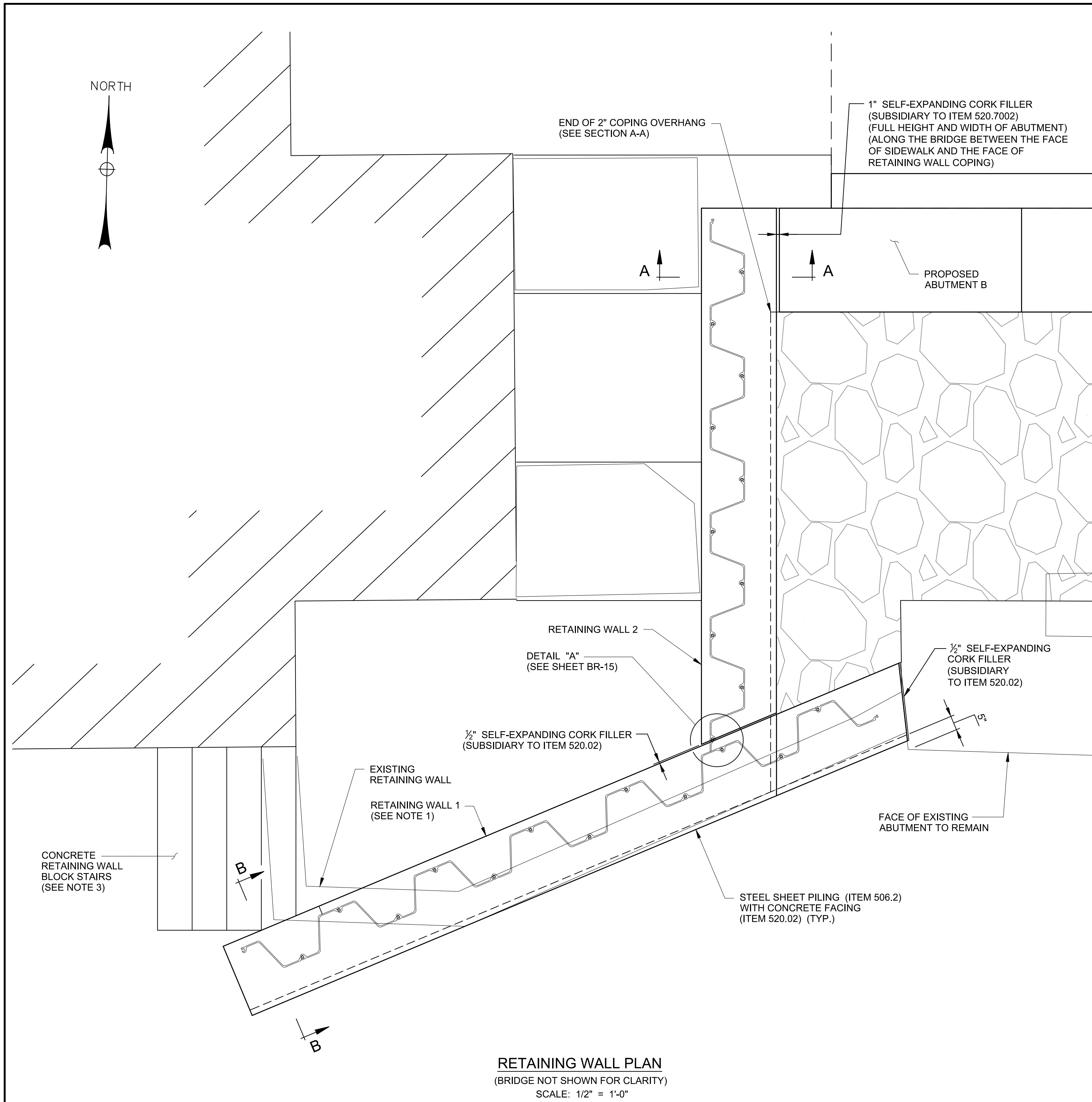
McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

**CITY OF KEENE
KEENE, NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION
ABUTMENT REINFORCEMENT**

REV	DATE	DESCRIPTION	BY

SCALE: AS SHOWN DESIGN: SIW
DRAWN: SLM PROJECT: 18022.01
CHECKED: XXX DATE: SEPTEMBER 2020

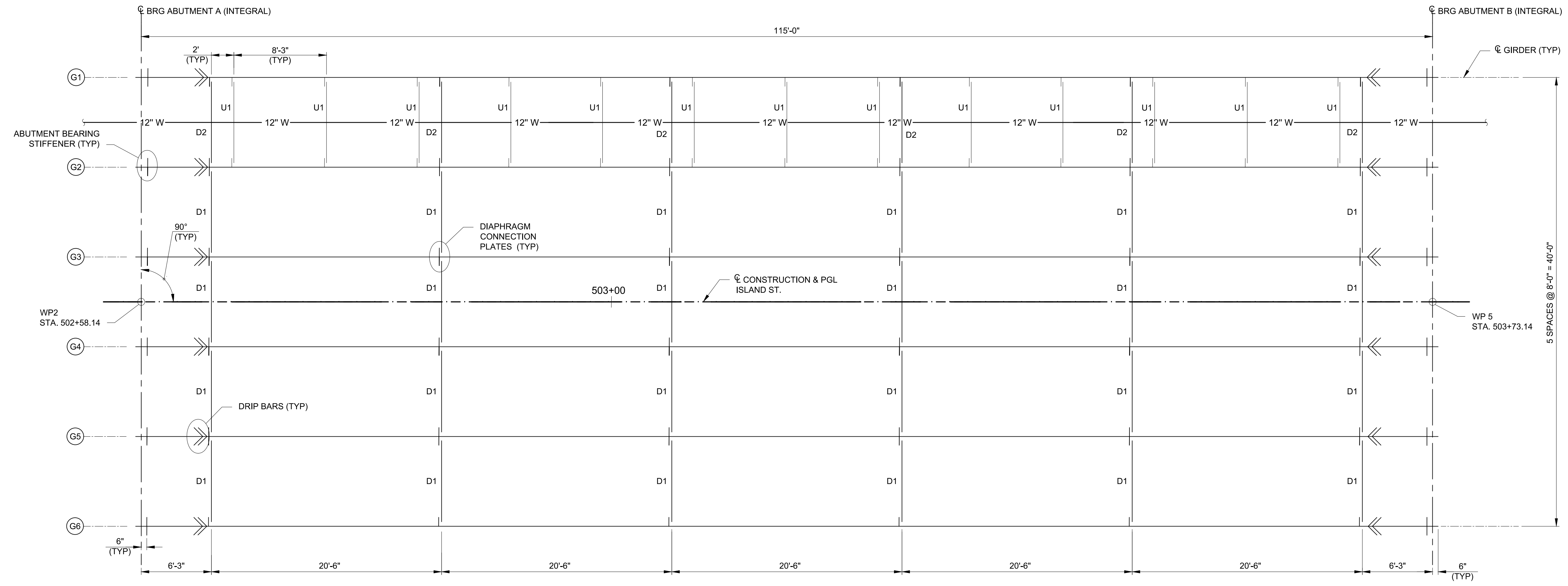
BR-13
129 OF 142



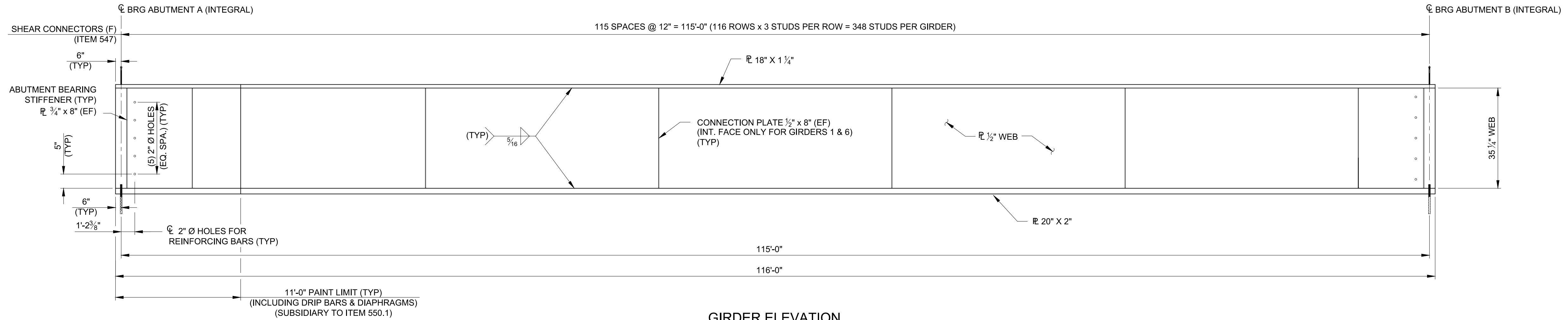
NOTES:

1. PORTIONS OF THE EXISTING RETAINING WALL INTERFERING WITH THE CONSTRUCTION OF THE PROPOSED RETAINING WALL SHALL BE REMOVED. ALL COSTS, INCLUDING EXCAVATION, ASSOCIATED WITH THE REMOVAL OF THE EXISTING RETAINING WALL SHALL BE INCLUDED IN REMOVAL OF EXISTING BRIDGE STRUCTURE (ITEM 502.). PORTIONS OF THE EXISTING RETAINING WALL TO REMAIN SHALL BE A MINIMUM OF 1'-0" BELOW FINISH GRADE, AND SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.
2. THE BACK FACE OF THE SHEETING SHALL NOT BE BACKFILLED UNTIL THE CONCRETE FACING HAS BEEN CONSTRUCTED AND THE FRONT FACE BACKFILLING HAS BEEN COMPLETED.
3. THE CONTRACTOR SHALL SUBMIT DETAILS FOR APPROVAL OF THE PROPOSED STAIRS AND LAYOUT, INCLUDING ALL PROPOSED MATERIALS. ALL COSTS ASSOCIATED WITH STAIRS SHALL BE SUBSIDIARY TO ITEM 506.2.
4. FOR SECTION A-A, SEE SHEET BR-15.
5. FOR SECTION B-B, SEE SHEET BR-15.


<p>McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301</p>				<p>CITY OF KEENE KEENE NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION RETAINING WALL PLAN AND ELEVATIONS</p>		
						SCALE: AS SHOWN
REV	DATE	DESCRIPTION	BY	DRAWN: SLM	PROJECT: 18022.01	
				CHECKED: RLJ	DATE: SEPTEMBER 2020	

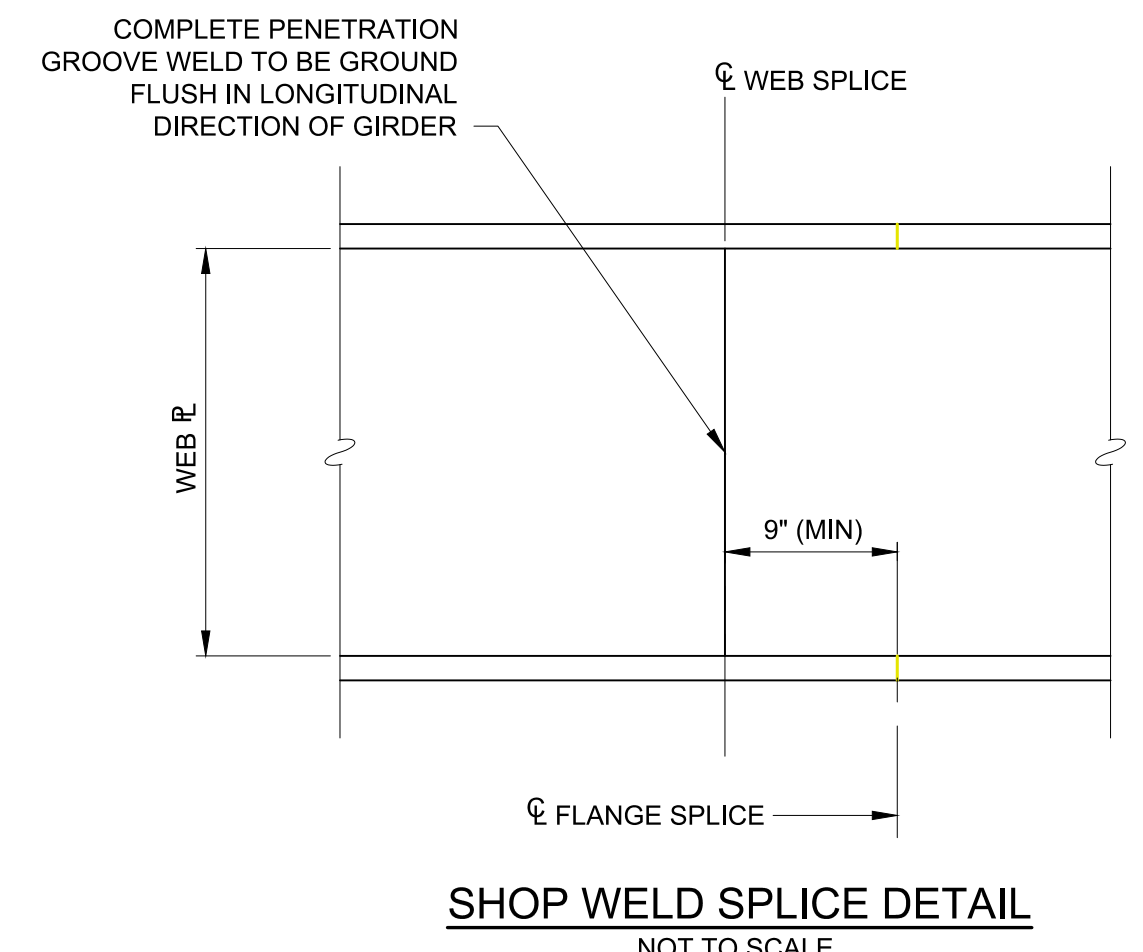
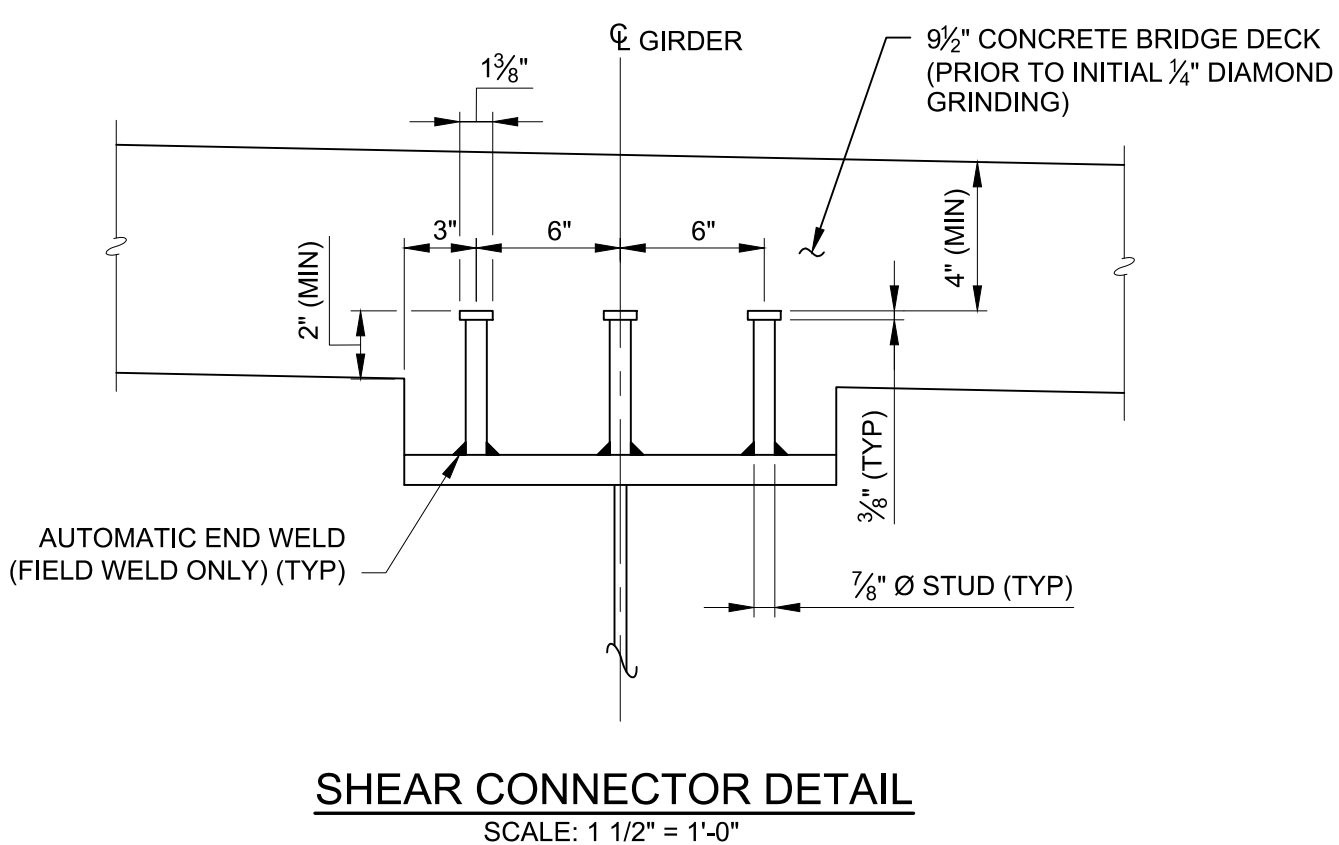
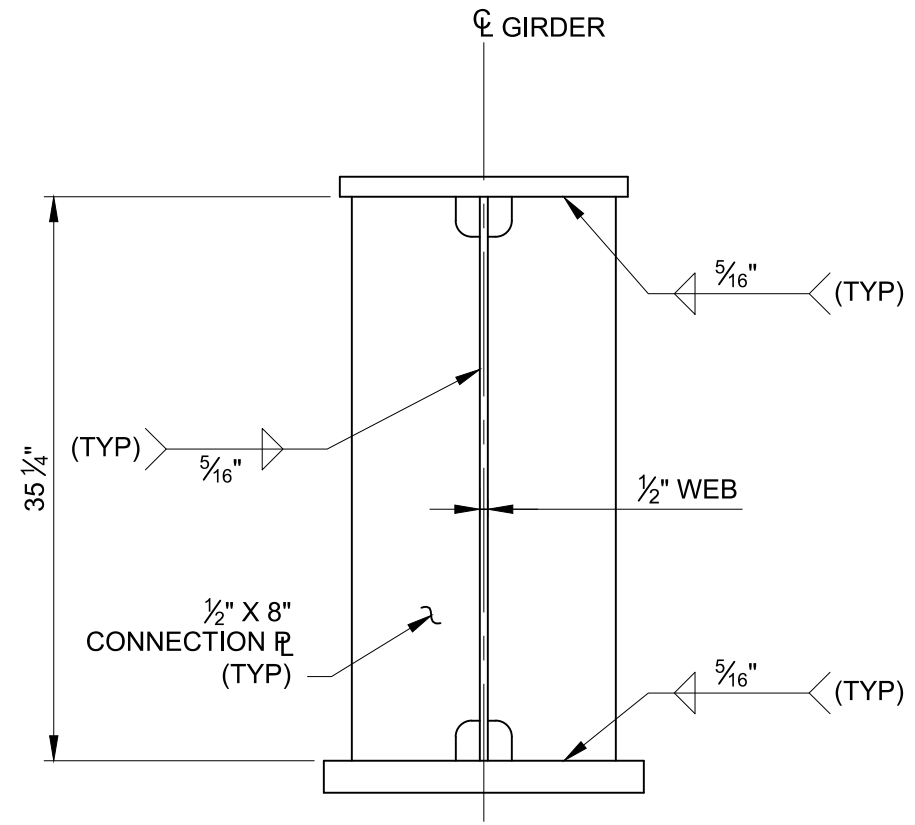
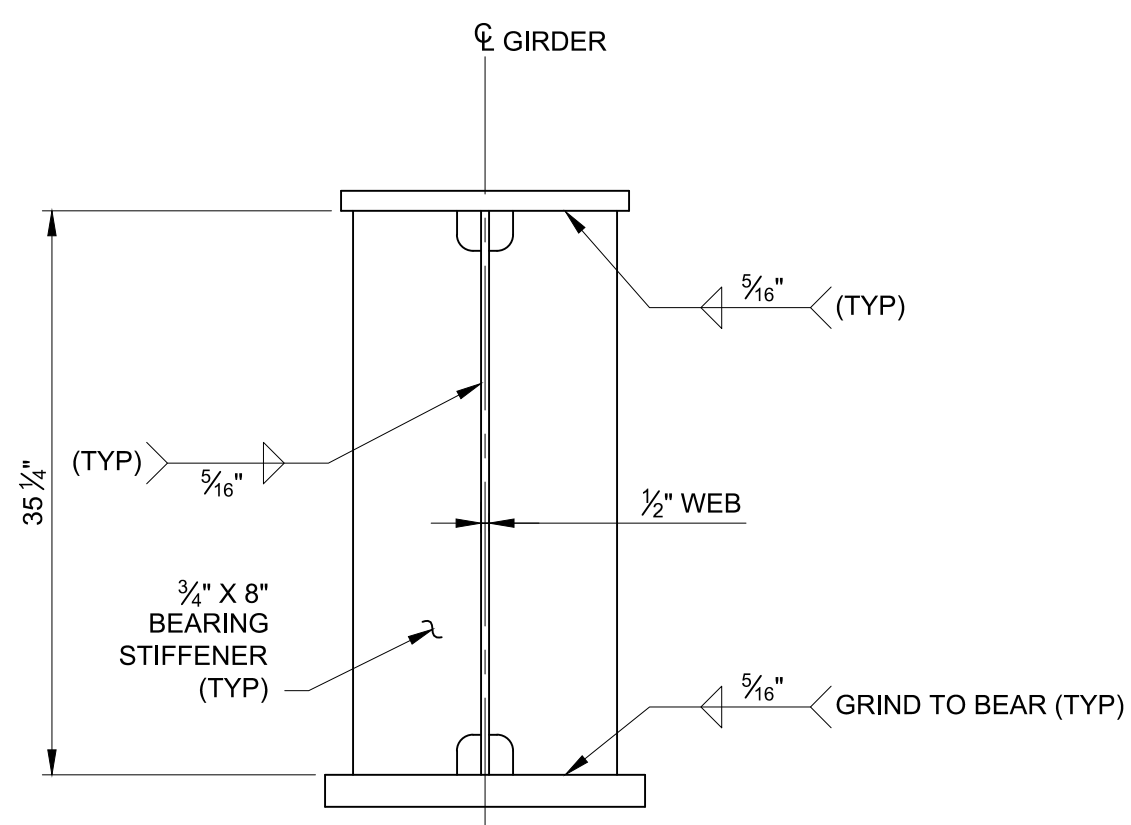
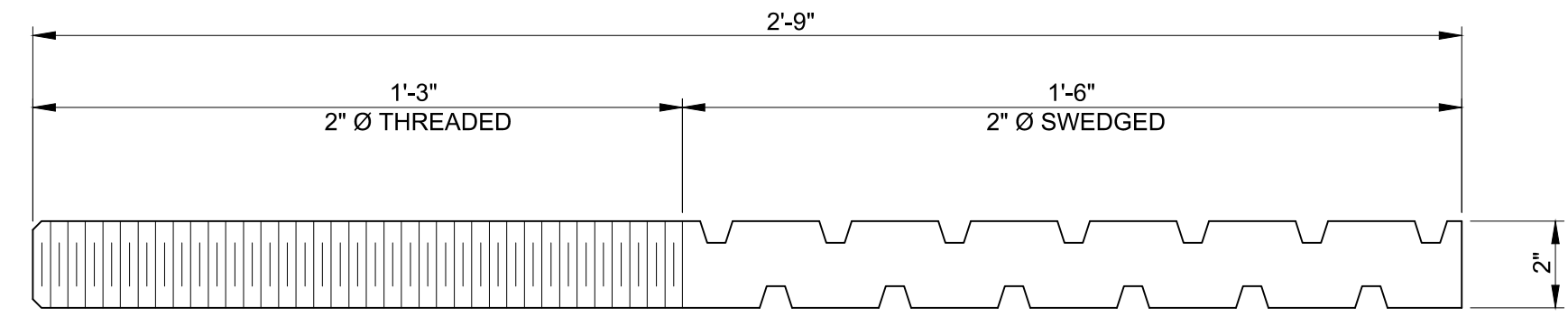
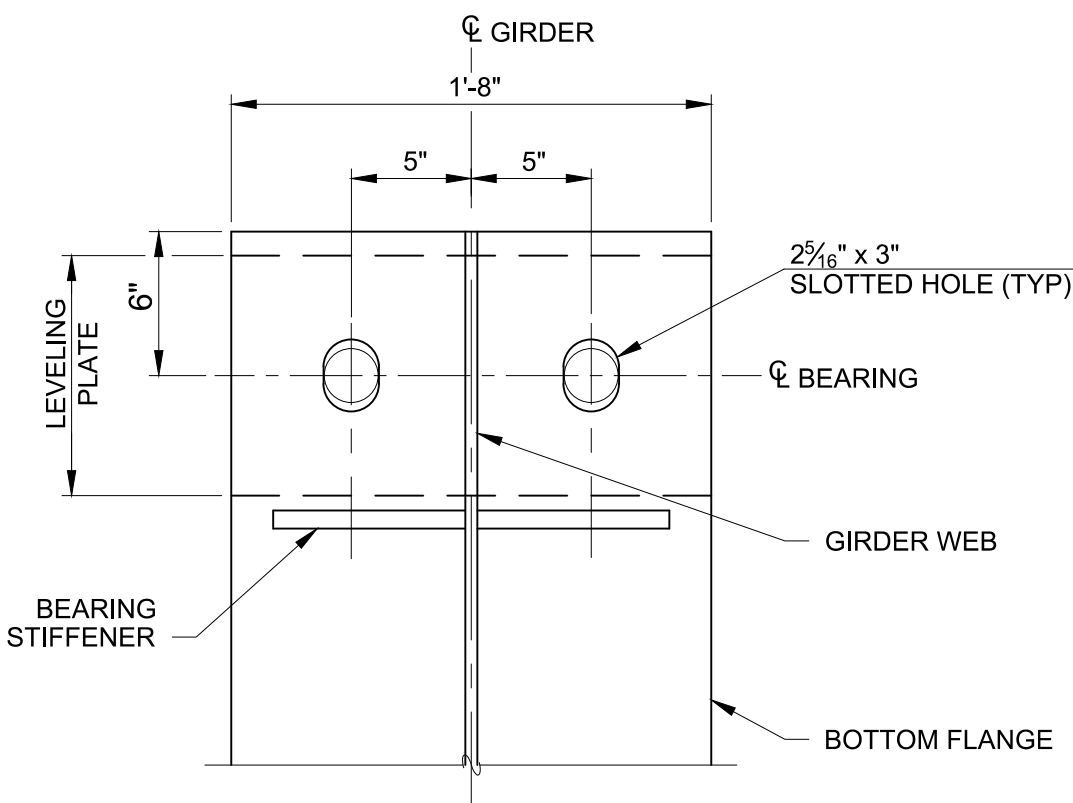
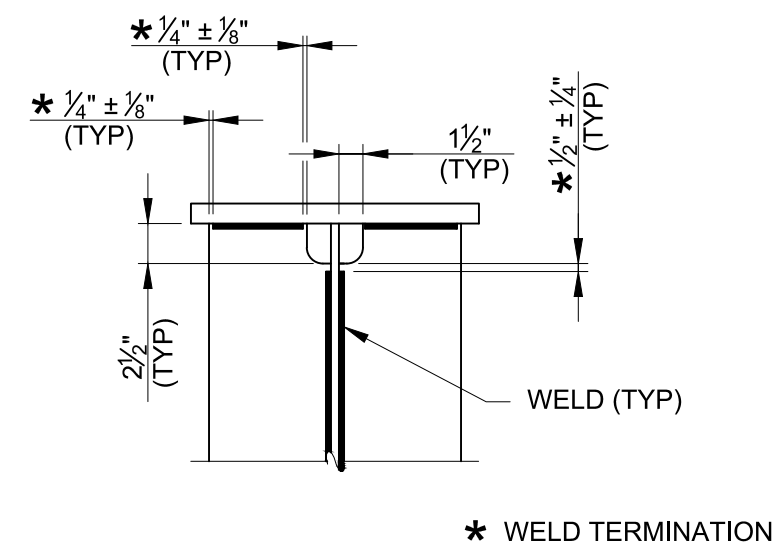
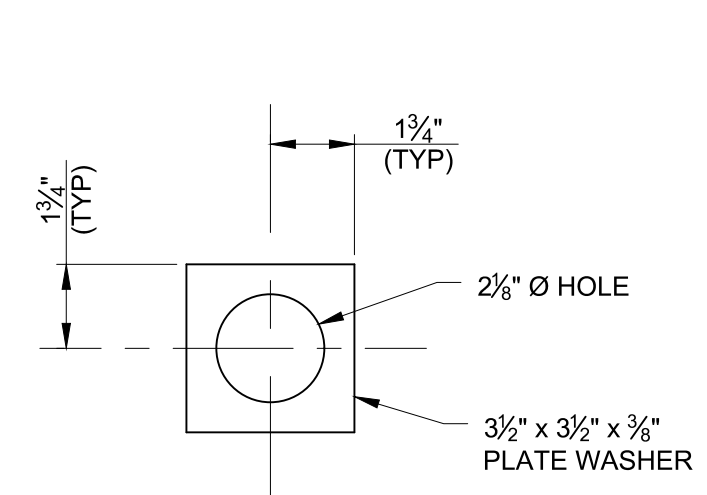
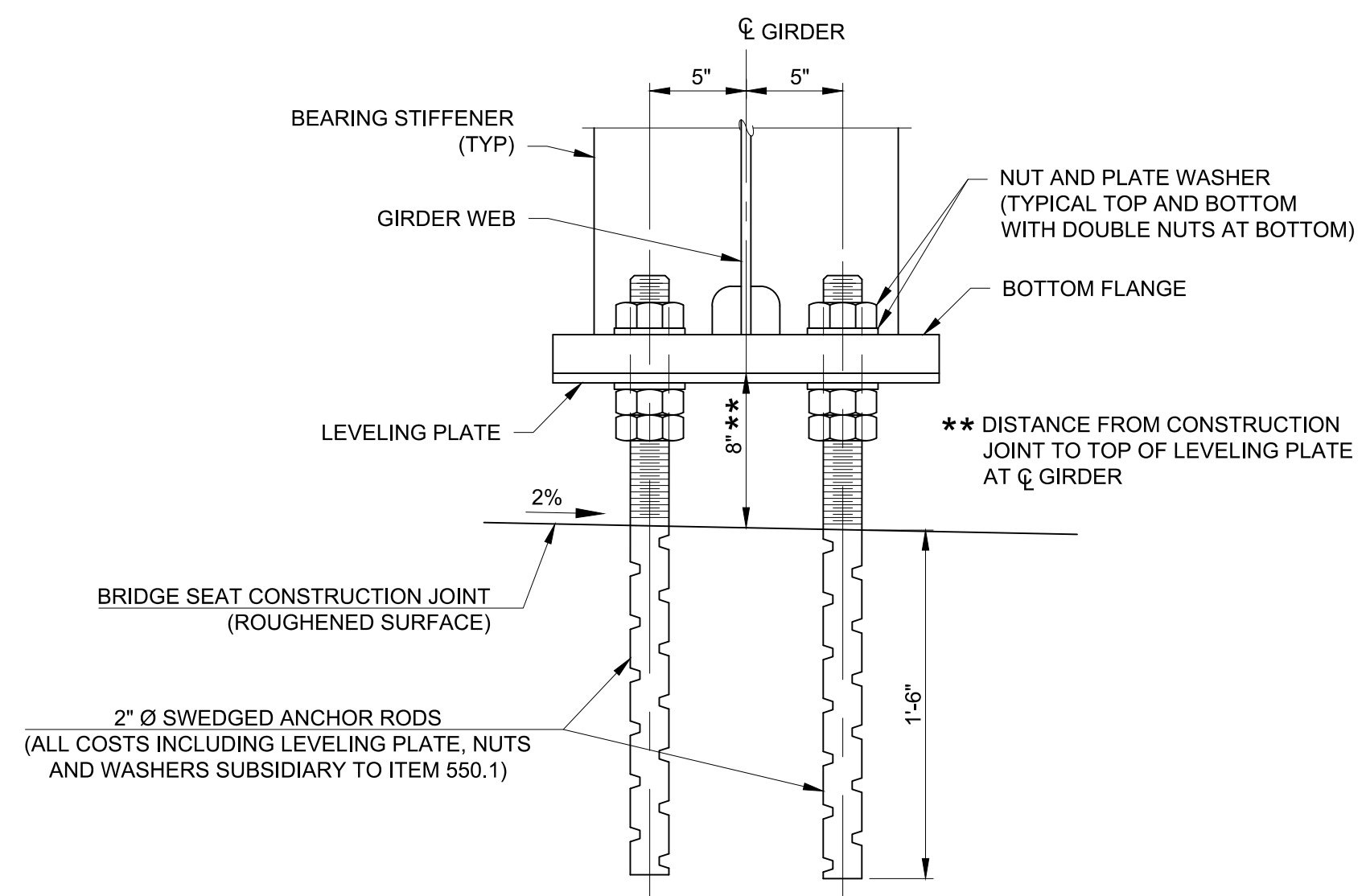
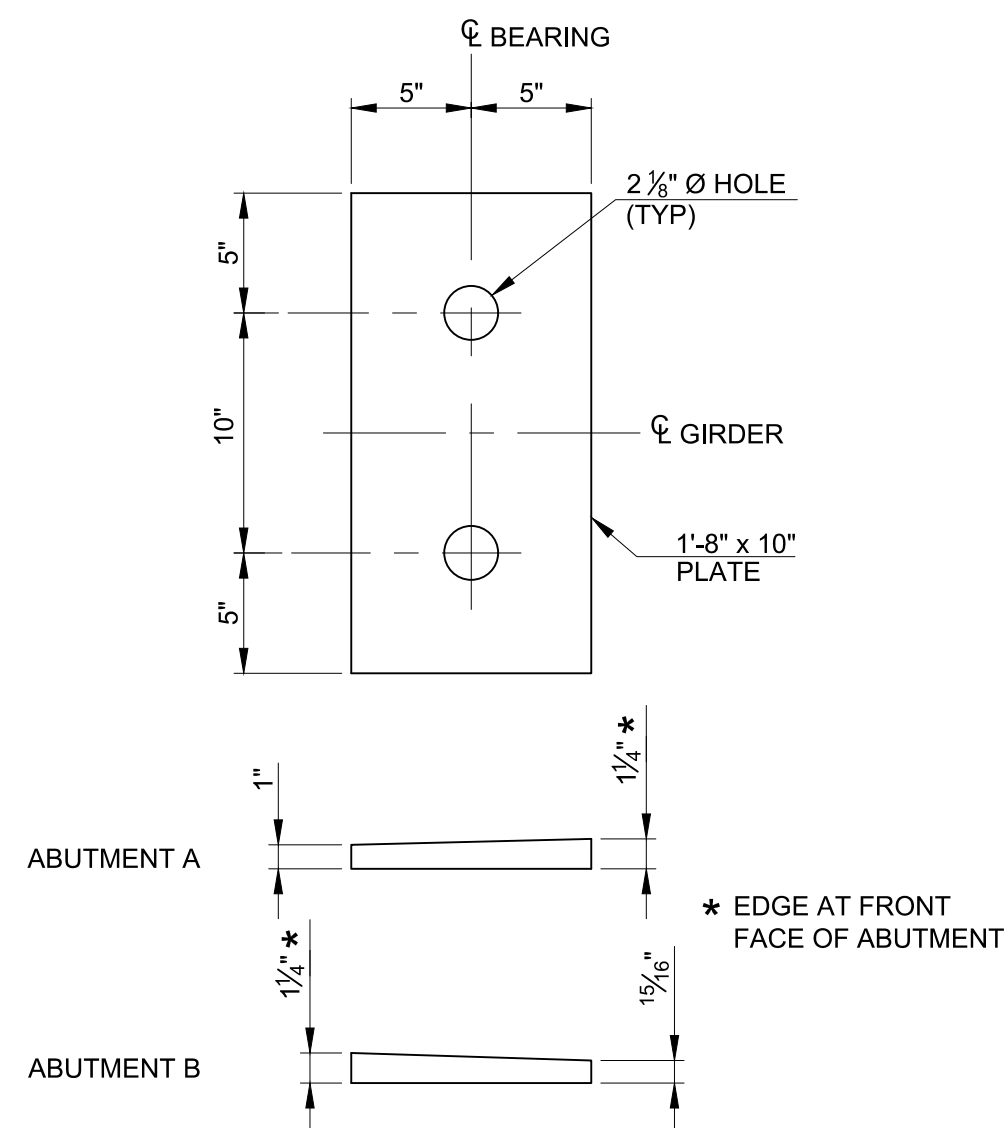
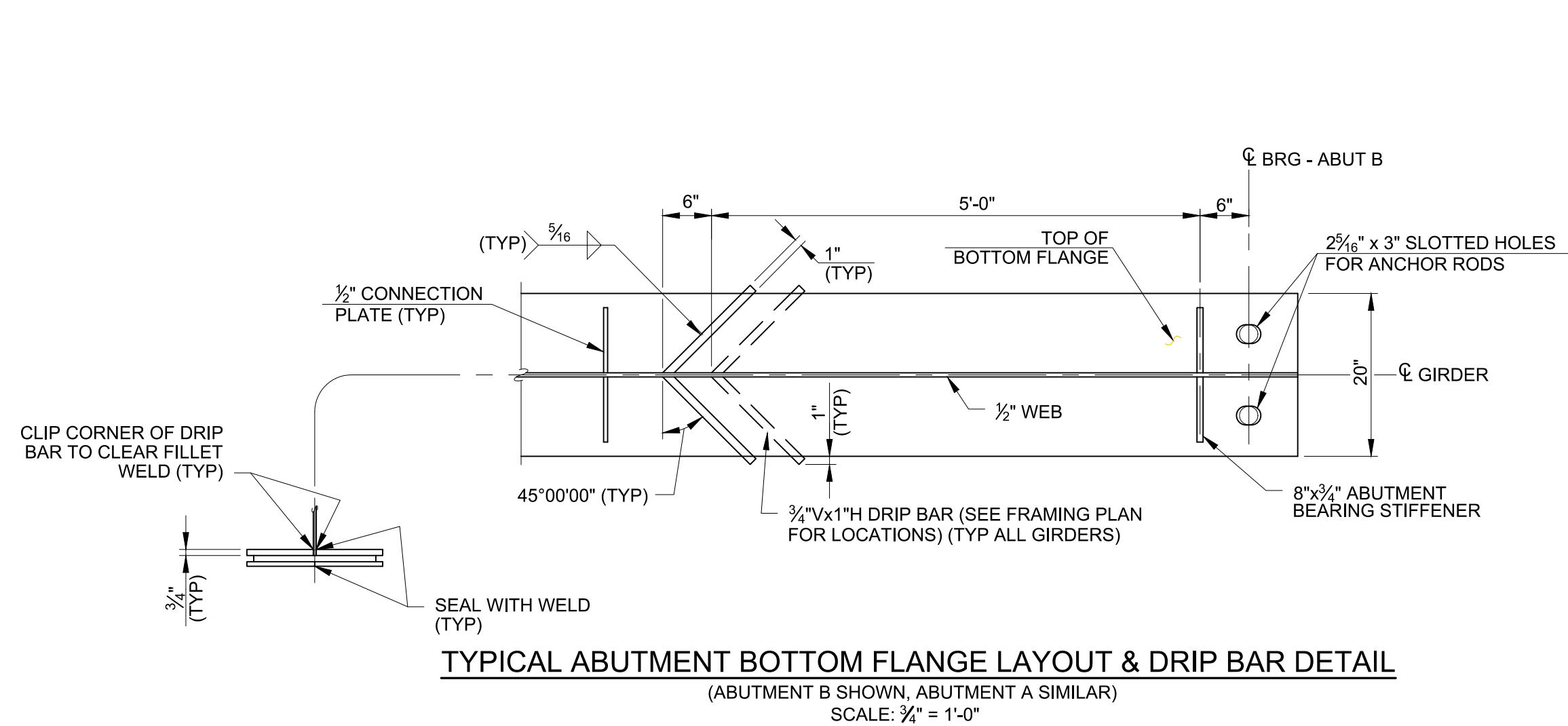


FRAMING PLAN
SCALE: 3/16" = 1'-0"

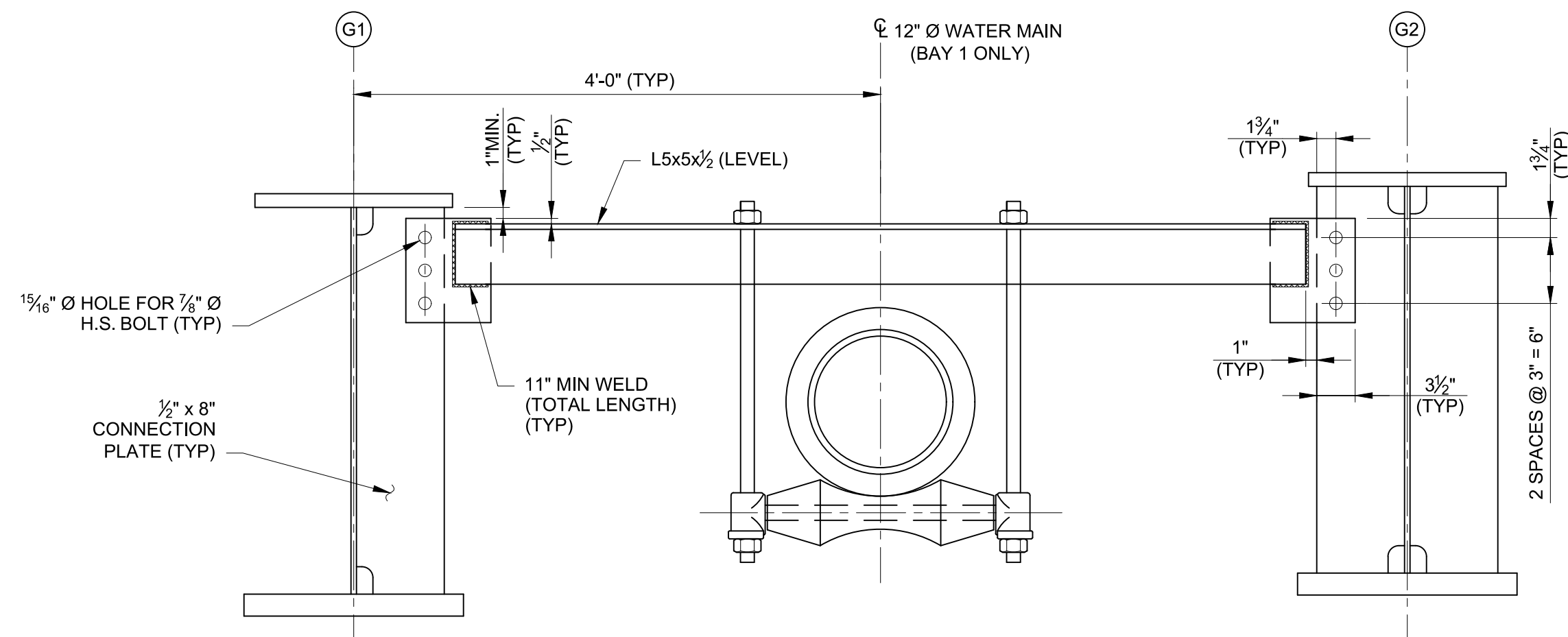


GIRDER ELEVATION
NOT TO SCALE

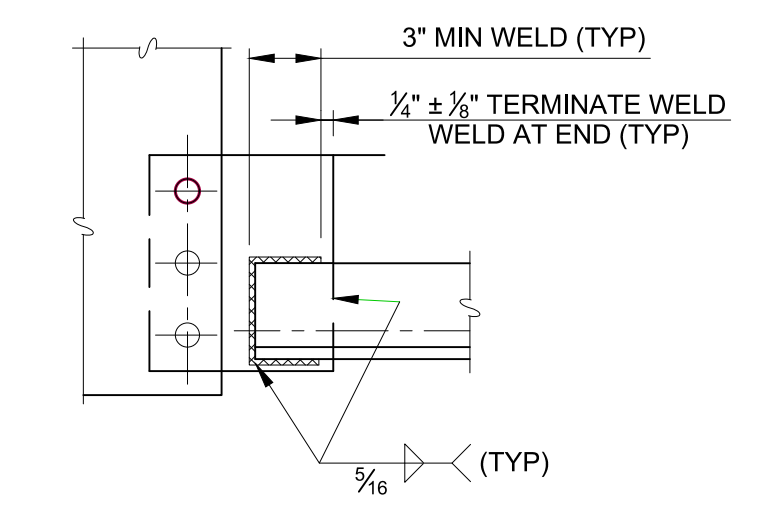
CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
FRAMING PLAN AND GIRDER ELEVATION			
REV	DATE	DESCRIPTION	BY
		McFarland Johnson	
53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301			
SCALE:	AS SHOWN	DESIGN:	SIW
DRAWN:	DJD	PROJECT:	18022.01
CHECKED:	RLJ	DATE:	SEPTEMBER 2020
			BR-16
			132 OF 142



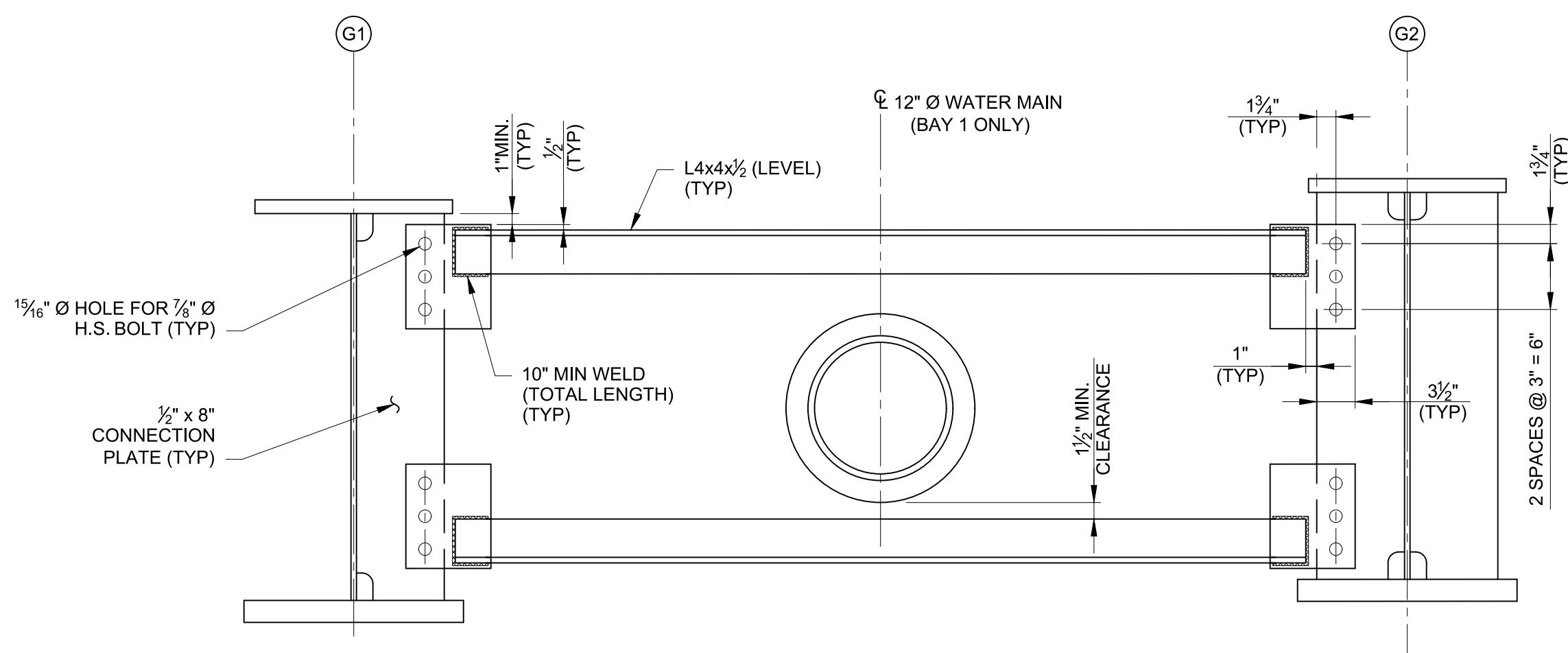
CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
STRUCTURAL STEEL DETAILS			
REV	DATE	DESCRIPTION	BY
McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301			
SCALE: AS SHOWN		DESIGN: SIW	BR-17 133 OF 142
DRAWN: DJD		PROJECT: 18022.01	
CHECKED: RLJ		DATE: SEPTEMBER 2020	



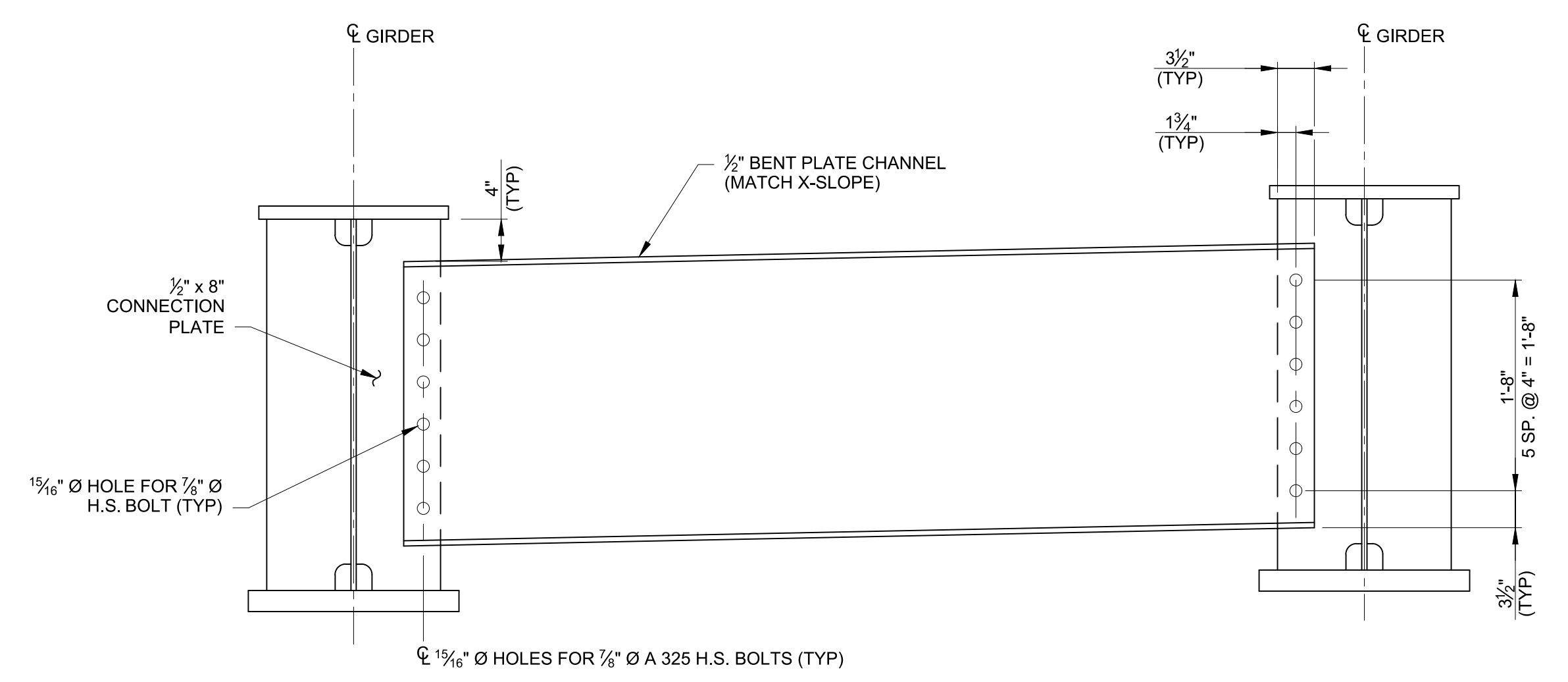
TYPICAL UTILITY SUPPORT (U1)
SCALE: 1" = 1'-0"



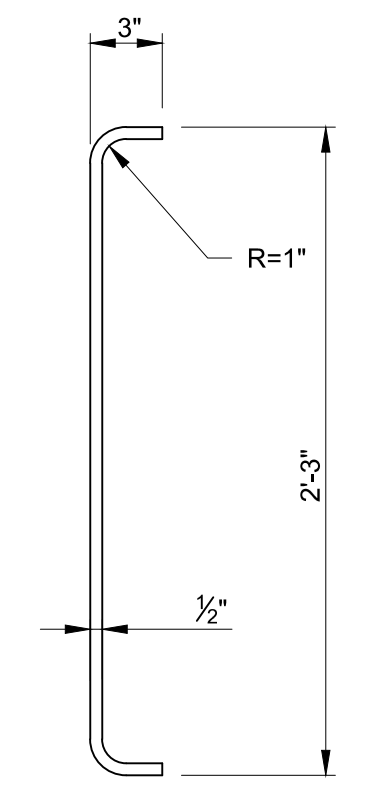
WELD TERMINATION DETAIL
SCALE: 1 1/2" = 1'-0"




TYPICAL UTILITY BAY DIAPHRAGM (D2)
SCALE: 1" = 1'-0"

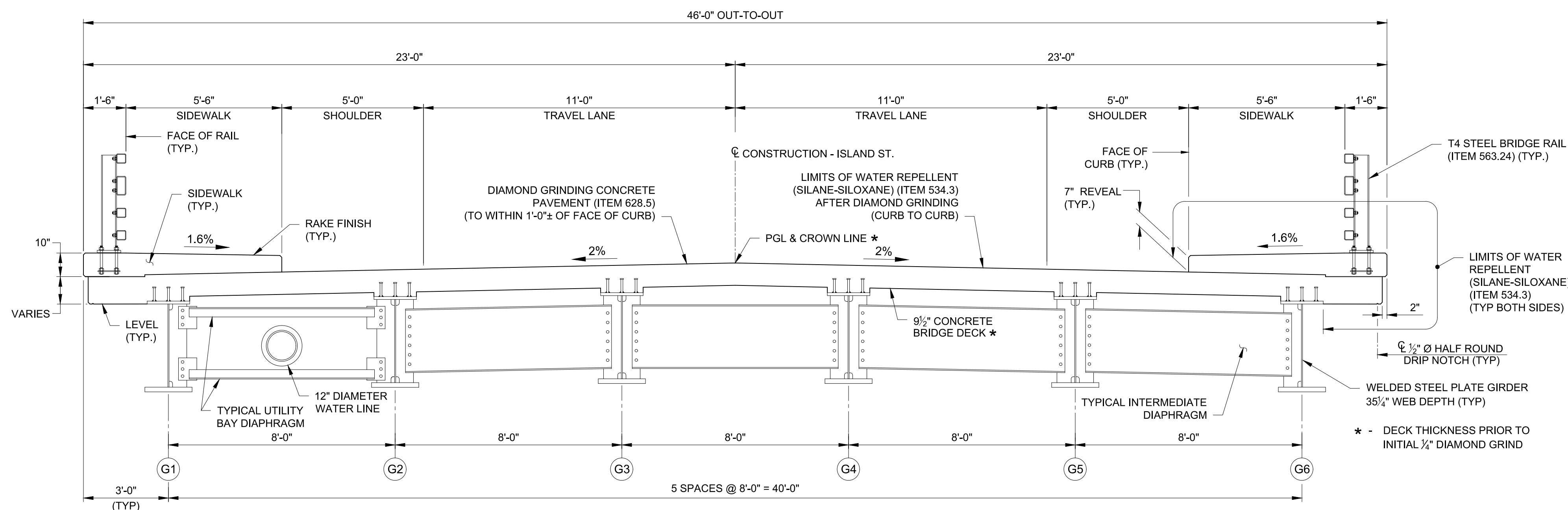


TYPICAL DIAPHRAGM (D1)
SCALE: 1" = 1'-0"

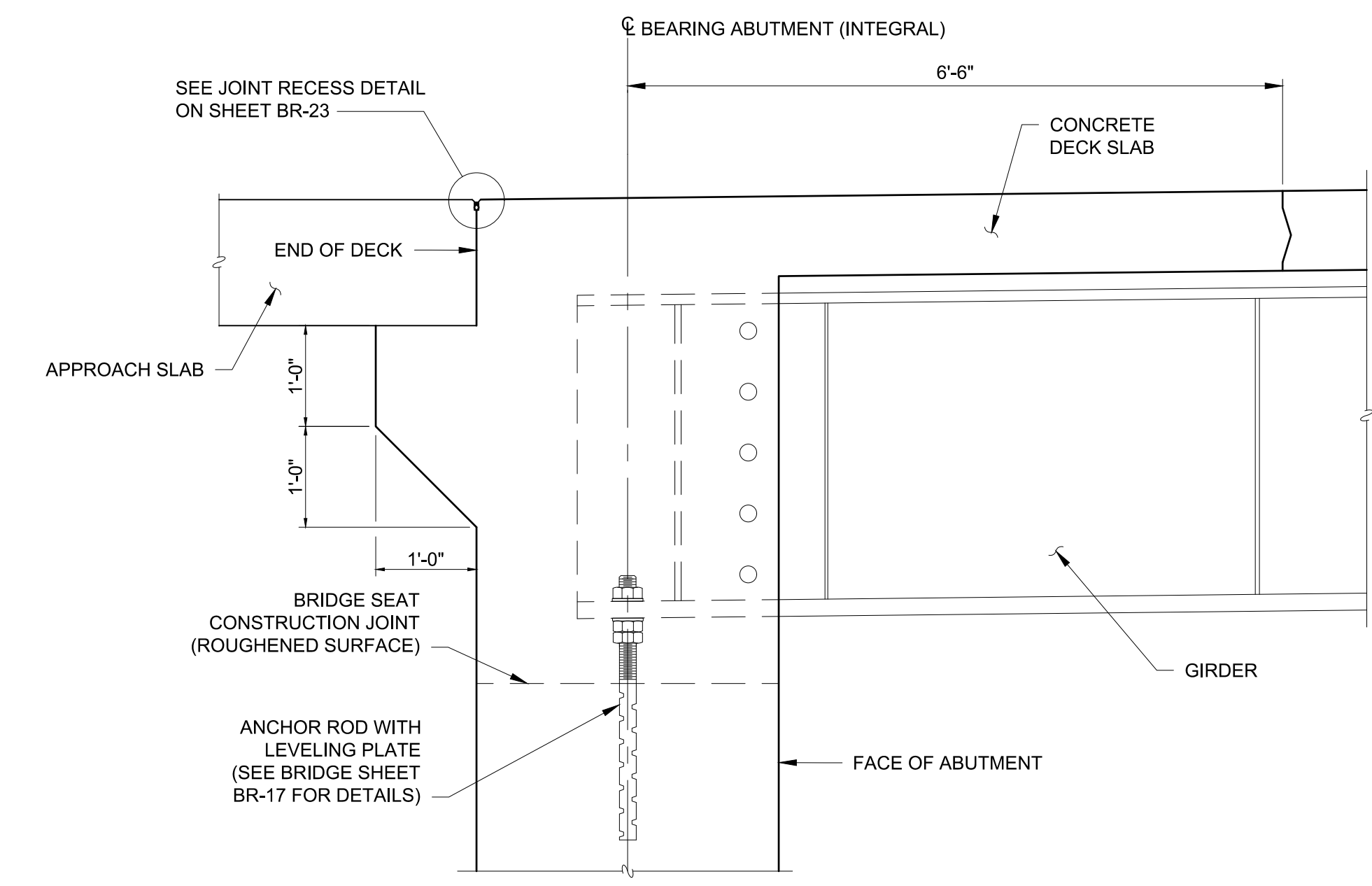


BENT PLATE CHANNEL SECTION
SCALE: 1 1/2" = 1'-0"

				CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION				
				DIAPHRAGM DETAILS				
REV	DATE	DESCRIPTION	BY	 McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301				
							SCALE: AS SHOWN	DESIGN: SIW
							DRAWN: DJD	PROJECT: 18022.01
							CHECKED: RLJ	DATE: SEPTEMBER 2020
				BR-19				
				135 OF 142				



TYPICAL BRIDGE SECTION
SCALE: 3/8" = 1'-0"



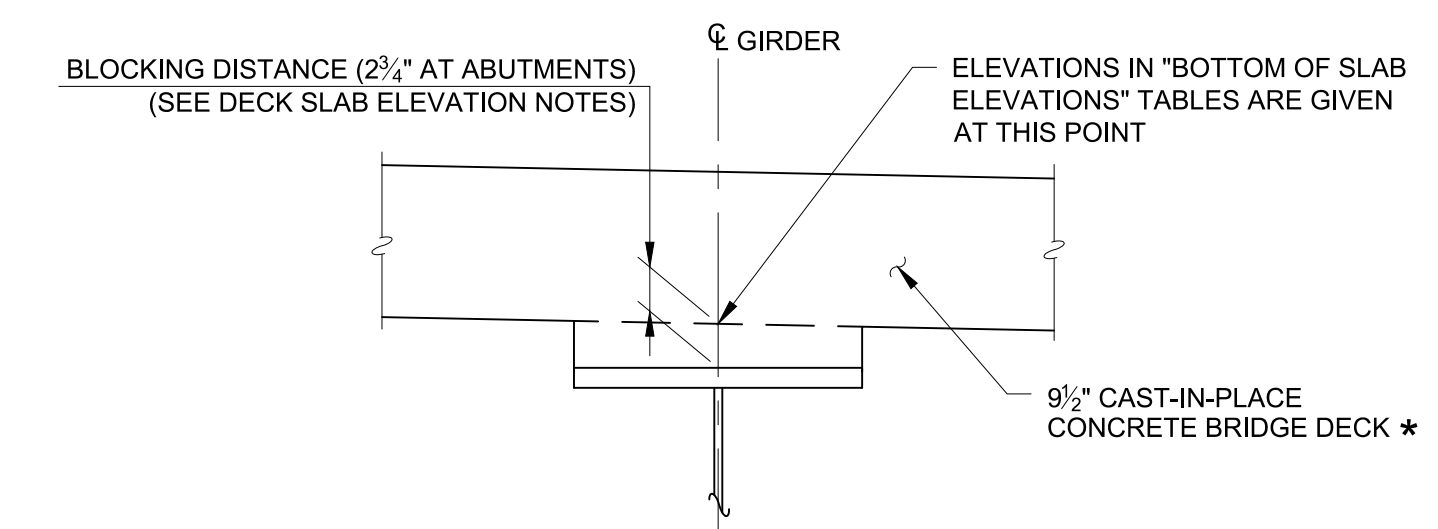
TYPICAL SECTION (END OF DECK)
SCALE: 3/4" = 1'-0"

DECK SLAB ELEVATION NOTES

1. AFTER THE STRUCTURAL STEEL IS ERECTED, BUT BEFORE THE DECK FORMS ARE BUILT, ELEVATIONS ON THE TOP FLANGE OF THE GIRDERS ARE TO BE OBTAINED AT THE POINTS INDICATED IN THE BOTTOM OF SLAB ELEVATION TABLES. THE DIFFERENCE BETWEEN THE ELEVATIONS OBTAINED AND THOSE SHOWN IN THE BOTTOM OF SLAB ELEVATION TABLE IS THE ACTUAL BLOCKING DISTANCE FROM THE TOP OF THE GIRDER TO THE BOTTOM OF THE DECK AT THE CENTERLINE OF THE GIRDER. SEE BOTTOM OF SLAB ELEVATIONS TABLES AND HAUNCH DETAIL (THIS SHEET).
2. ELEVATIONS SHOWN IN THE BOTTOM OF SLAB ELEVATIONS TABLES ARE FINISHED BOTTOM OF SLAB ELEVATIONS ADJUSTED FOR TOTAL DEAD LOAD, LESS THE DEFLECTION DUE TO GIRDER WEIGHT.

ELEVATIONS AT BOTTOM OF CONCRETE DECK SLAB-SPAN 1																					
GIRDER	CL BRG. ABUT. A	0.05 L	0.10 L	0.15 L	0.20 L	0.25 L	0.30 L	0.35 L	0.40 L	0.45 L	0.50 L	0.55 L	0.60 L	0.65 L	0.70 L	0.75 L	0.80 L	0.85 L	0.90 L	0.95 L	CL BRG. ABUT. B
1	474.10	474.34	474.55	474.75	474.92	475.06	475.18	475.27	475.33	475.35	475.35	475.32	475.26	475.16	475.04	474.89	474.71	474.50	474.27	474.02	473.75
2	474.26	474.50	474.72	474.92	475.10	475.24	475.36	475.46	475.52	475.55	475.54	475.51	475.45	475.35	475.22	475.07	474.89	474.68	474.44	474.19	473.91
3	474.42	474.66	474.88	475.08	475.26	475.40	475.52	475.62	475.68	475.71	475.70	475.67	475.61	475.51	475.38	475.23	475.05	474.84	474.60	474.35	474.07
4	474.42	474.66	474.88	475.08	475.26	475.40	475.52	475.62	475.68	475.71	475.70	475.67	475.61	475.51	475.38	475.23	475.05	474.84	474.60	474.35	474.07
5	474.26	474.50	474.72	474.92	475.10	475.24	475.36	475.46	475.52	475.55	475.54	475.51	475.45	475.35	475.22	475.07	474.89	474.68	474.44	474.19	473.91
6	474.10	474.34	474.55	474.75	474.92	475.06	475.18	475.27	475.33	475.35	475.35	475.32	475.26	475.16	475.04	474.89	474.71	474.50	474.27	474.02	473.75

NOTE: ELEVATIONS IN TABLE ARE BASED ON A 9/4" DECK (ACCOUNTING FOR 1/2" DIAMOND GRINDING).



HAUNCH DETAIL
SCALE: 1" = 1'-0"

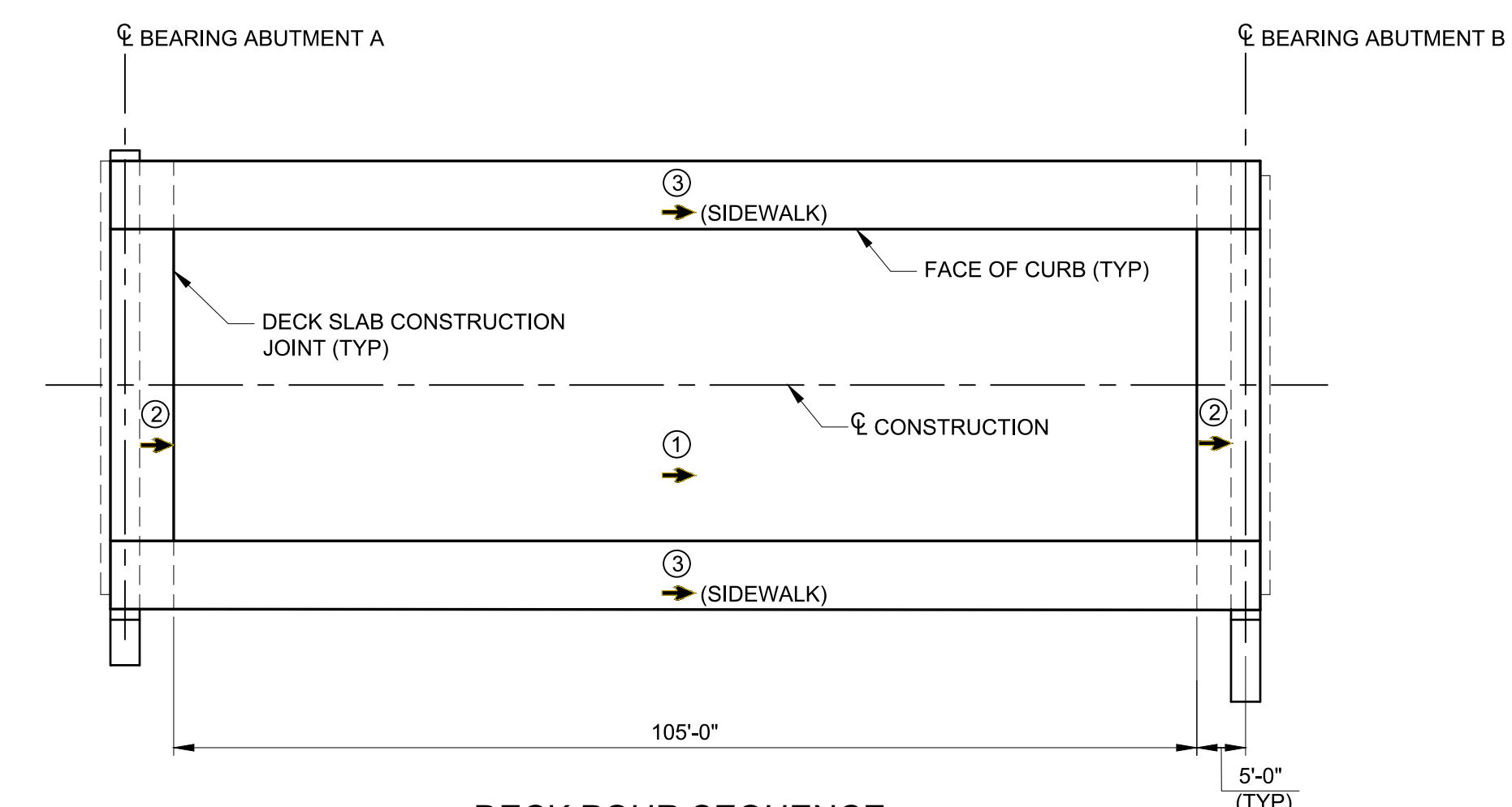
CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
TYPICAL BRIDGE SECTION			
REV	DATE	DESCRIPTION	BY
McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301			
SCALE: AS SHOWN	DESIGN: SIW	BR-20 <small>136 OF 142</small>	
DRAWN: DJD	PROJECT: 18022.01		
CHECKED: RLJ	DATE: SEPTEMBER 2020		



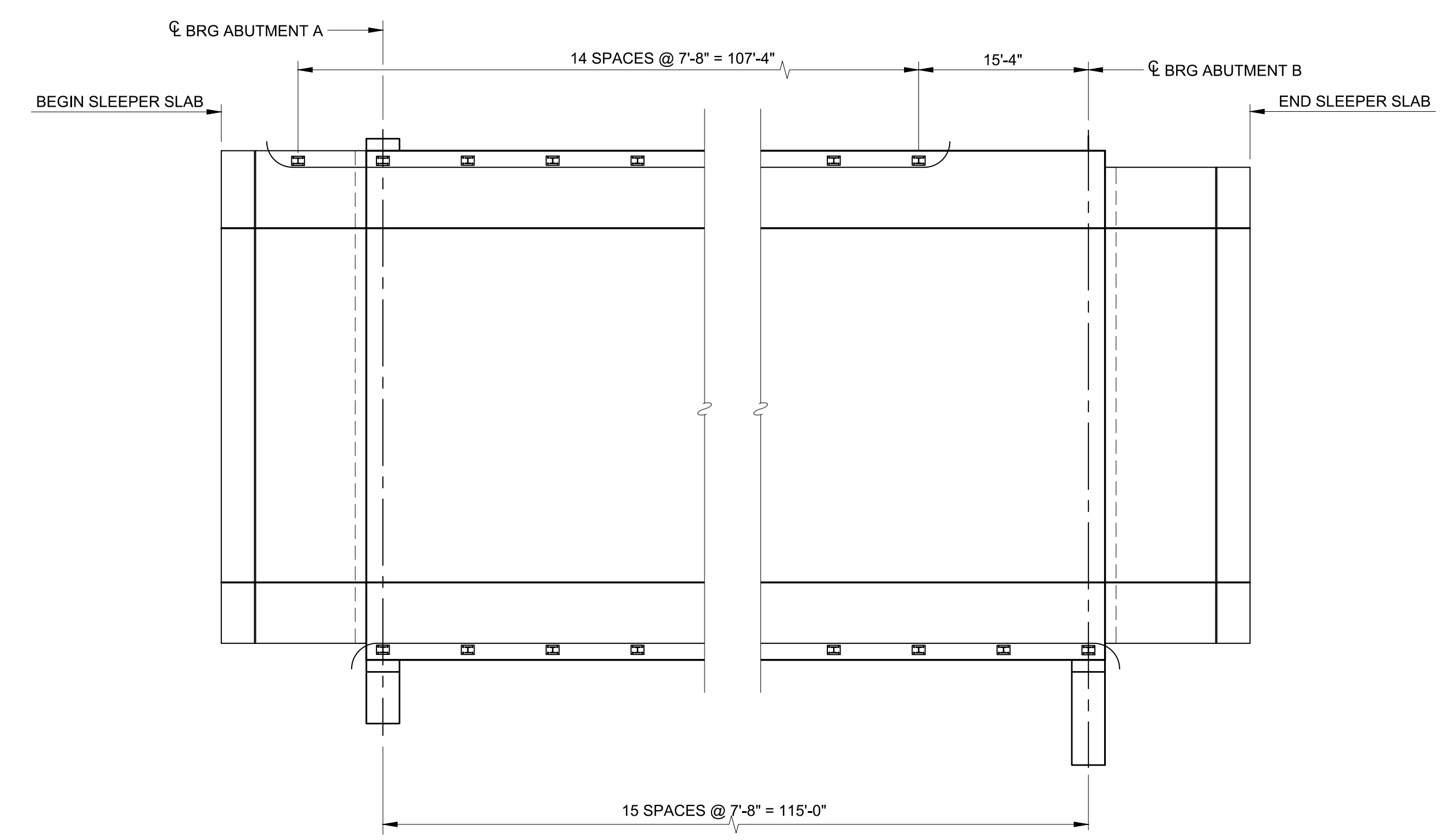
TYPICAL BRIDGE REINFORCEMENT SECTION
SCALE: 1/2" = 1'-0"

LEGEND
 ① POUR NUMBER
 → DIRECTION OF POUR

DECK PLACEMENT NOTES
 1. ALL DECK CONCRETE SHALL REMAIN PLASTIC THROUGH THE ENTIRE PLACEMENT OF EACH POUR PHASE.
 2. ONCE THE PLACING OF THE SLAB HAS BEEN STARTED IN EACH POUR PHASE, IT SHALL BE COMPLETED WITHOUT INTERRUPTION.
 3. SCREED RAIL SUPPORTS REQUIRED FOR THE PLACEMENT OF THE DECK SLAB CONCRETE SHALL BE LOCATED AT THE CENTERLINE OF THE GIRDERS.



DECK POUR SEQUENCE
NOT TO SCALE

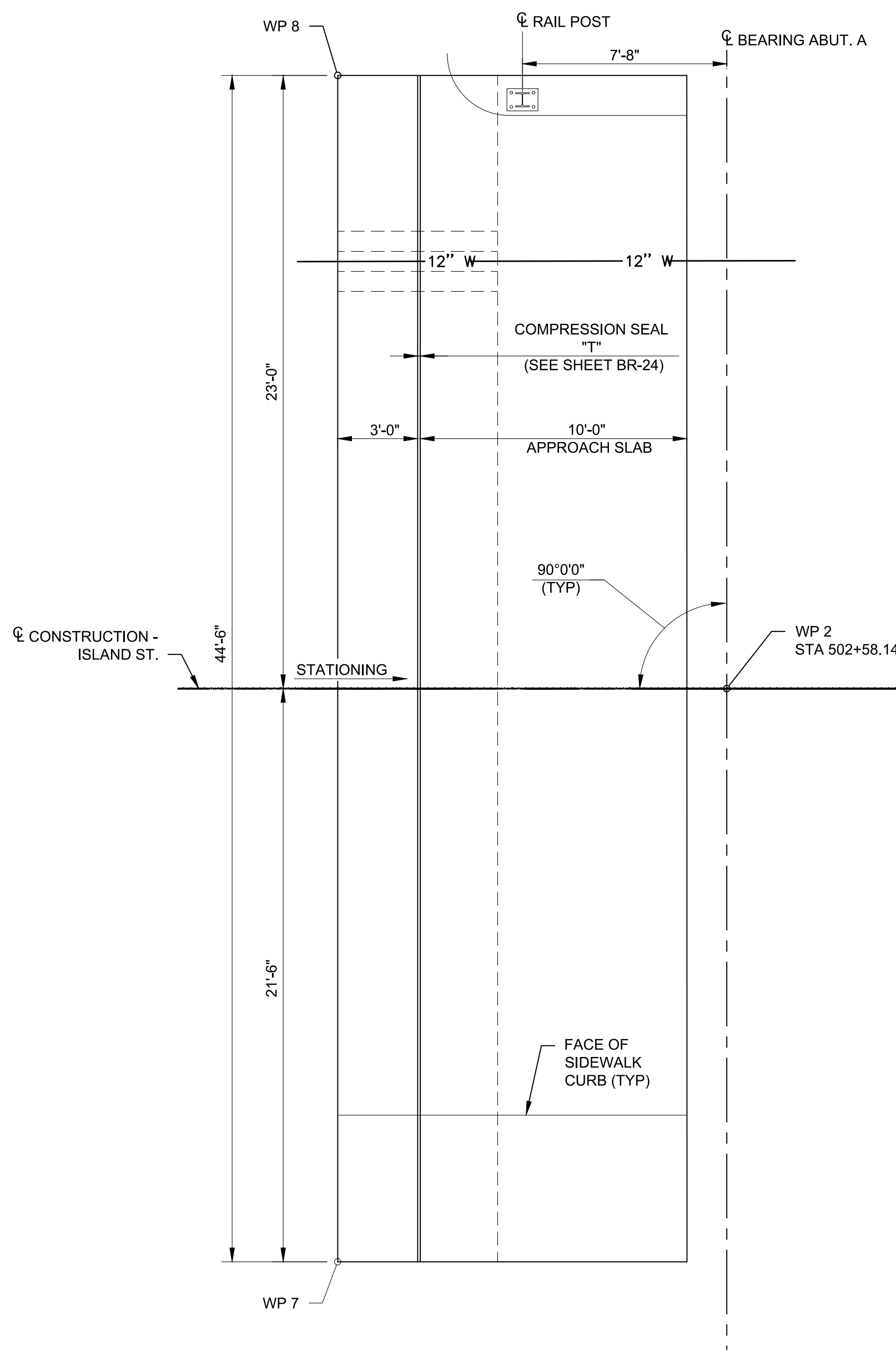
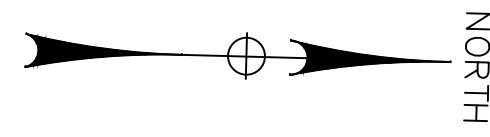


BRIDGE RAIL LAYOUT PLAN
SCALE: 1" = 10'

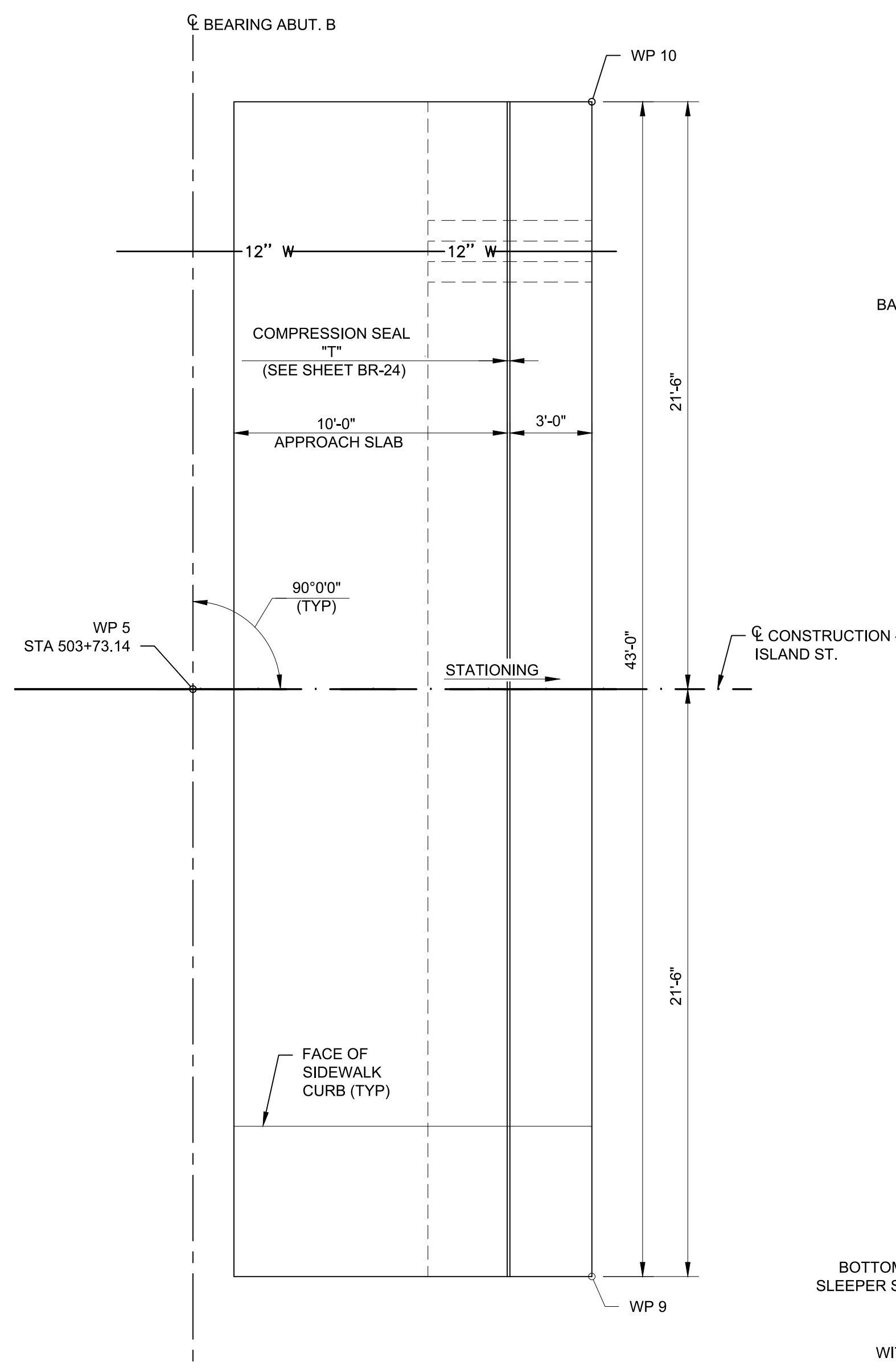
REINFORCEMENT LAP SPLICE LENGTH			
TOP BAR LAP SPLICES		BOTTOM BAR LAP SPLICES	
BAR SIZE	LENGTH (IN)	BAR SIZE	LENGTH (IN)
#3	17.0	#3	23.0
#4	24.0	#4	29.0
#5	29.0	#5	45.0
#6	34.0	#6	64.0
#7	41.0	#7	88.0
#8	46.0	#8	114.0
#9	51.0	#9	143.0

NOTE:
 1. FOR DECK END REINFORCEMENT SEE SHEET BR-13.

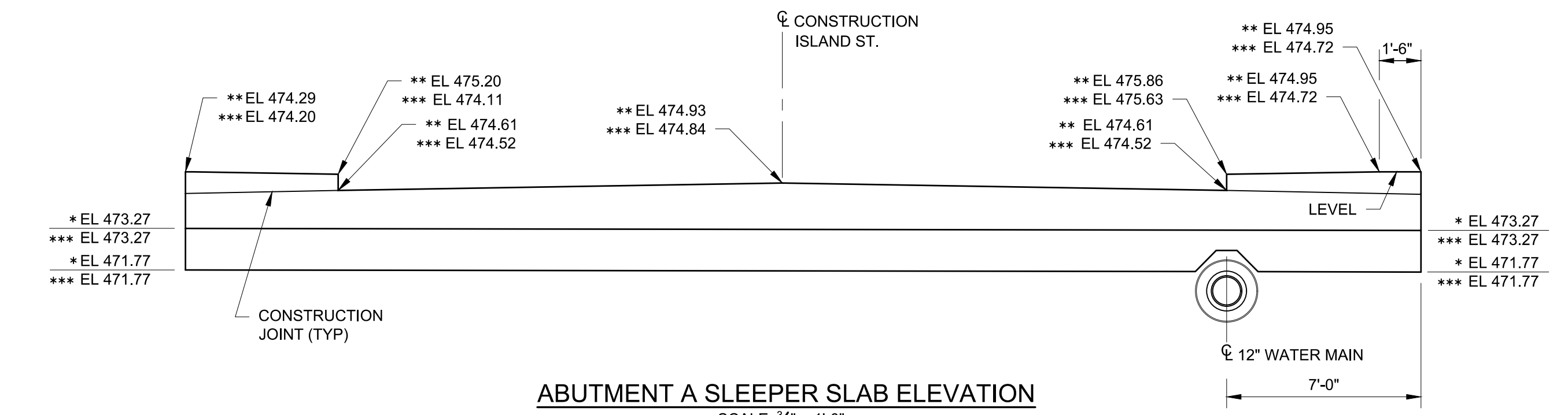
<p>McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301</p>				<p>CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION</p> <p>DECK REINFORCEMENT & BRIDGE RAIL LAYOUT</p>		
						SCALE: AS SHOWN
REV	DATE	DESCRIPTION	BY	DRAWN: DJD	PROJECT: 18022.01	
				CHECKED: RLJ	DATE: SEPTEMBER 2021	



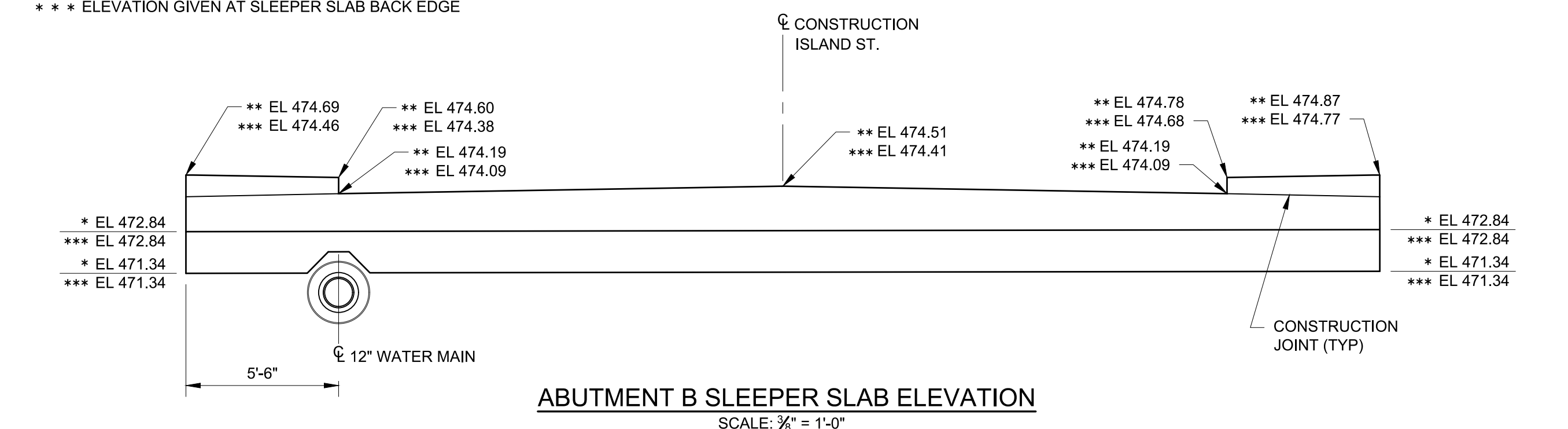
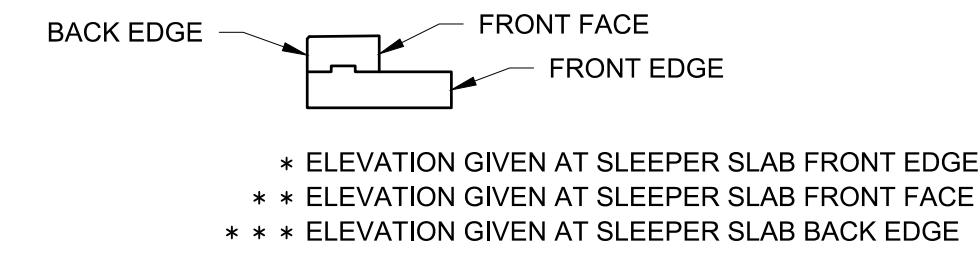
ABUTMENT A APPROACH & SLEEPER SLAB MASONRY PLAN
SCALE: 1/4" = 1'-0"



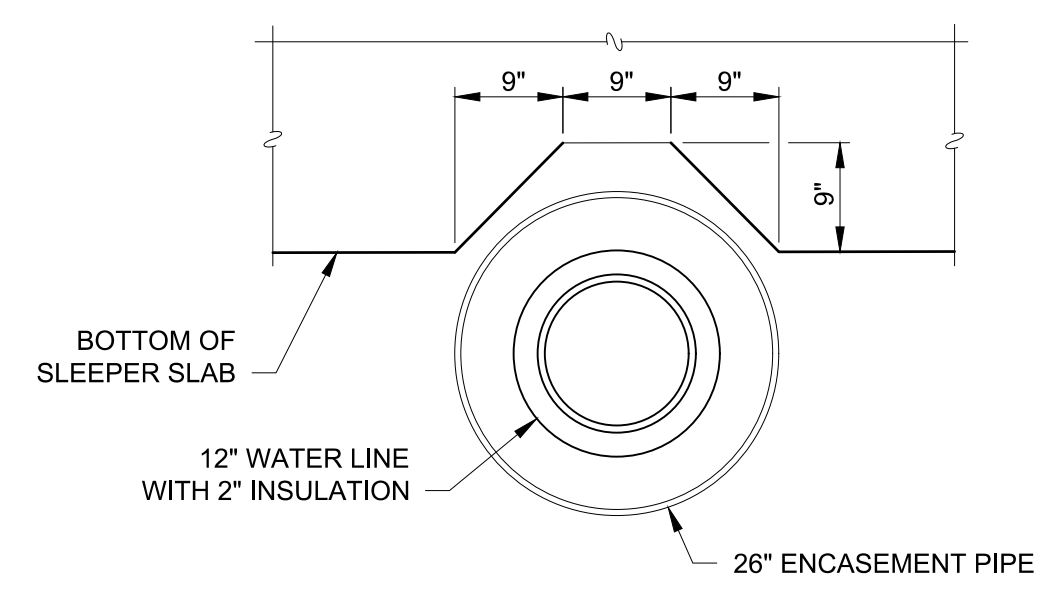
ABUTMENT B APPROACH & SLEEPER SLAB MASONRY PLAN
SCALE: 1/4" = 1'-0"



ABUTMENT A SLEEPER SLAB ELEVATION
SCALE: 3/8" = 1'-0"



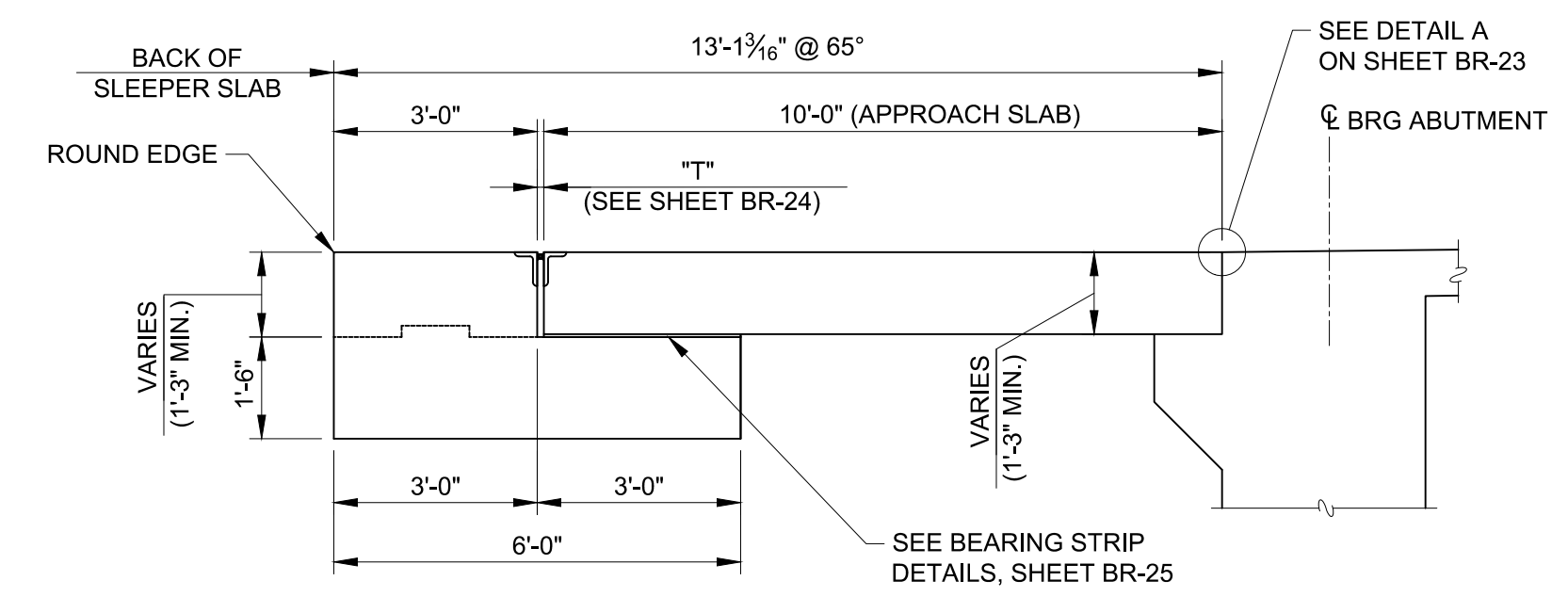
ABUTMENT B SLEEPER SLAB ELEVATION
SCALE: 3/8" = 1'-0"



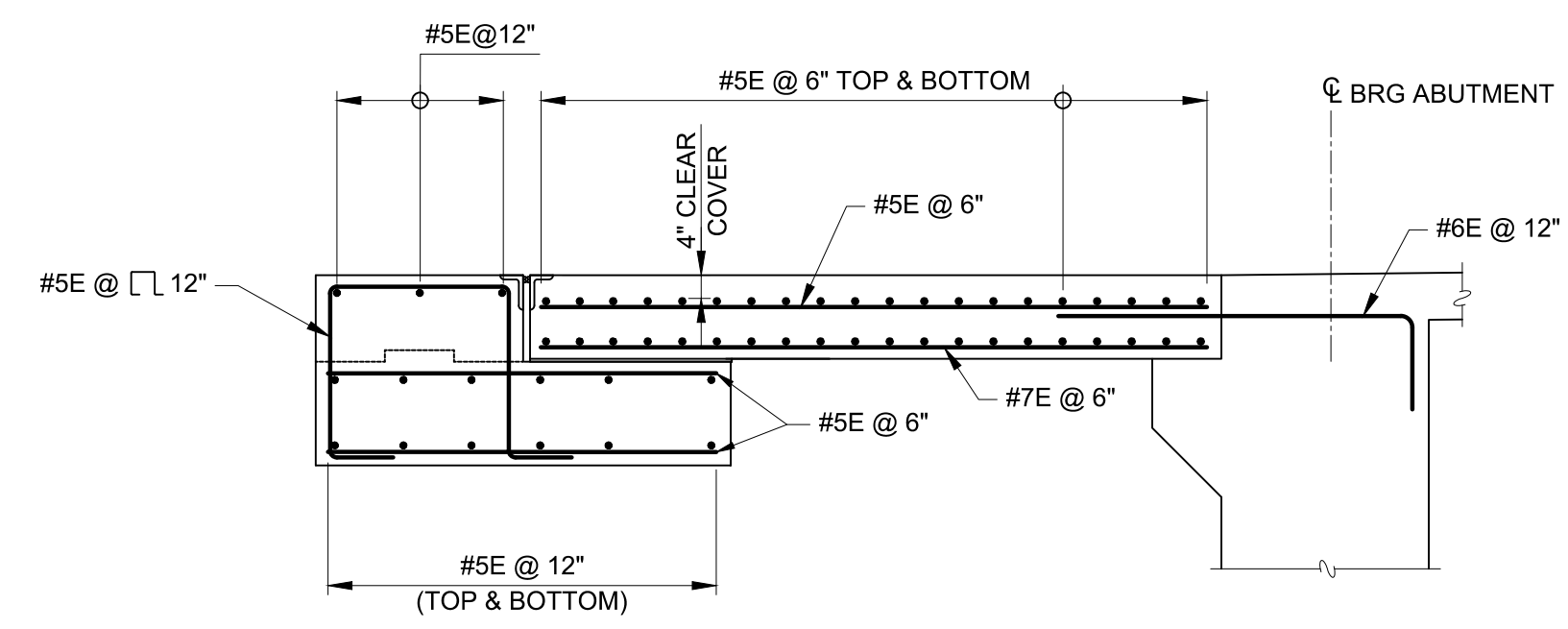
SLEEPER SLAB UTILITY BLOCKOUT
SCALE: 3/4" = 1'-0"

APPROACH AND SLEEPER SLAB NOTES:

1. APPROACH SLABS SHALL BE POURED FULL WIDTH AFTER THE CONCRETE DECK HAS BEEN CONSTRUCTED.
2. CONCRETE FOR APPROACH SLABS AND SLEEPER SLABS SHALL BE PAID FOR UNDER ITEM 520.0302, CONCRETE CLASS AA, APPROACH SLABS (QC/QA).
3. ITEM 534.3, WATER REPELLENT (SILANE-SILOXANE), SHALL BE APPLIED TO THE EXPOSED CONCRETE ON THE TOP OF THE SLEEPER SLAB AND THE APPROACH SLAB.
4. ALL REINFORCEMENT SHALL HAVE 3" MINIMUM CLEAR COVER, UNLESS OTHERWISE NOTED.
5. SEE SHEET BR-24 FOR CONCRETE SURFACE TREATMENT APPROACHING THE EXPANSION JOINT ON THE APPROACH SLAB SURFACE AND SLEEPER SLAB SURFACE.



TYPICAL APPROACH & SLEEPER SLAB (MASONRY)
SCALE: 3/8" = 1'-0"



TYPICAL APPROACH & SLEEPER SLAB (REINFORCEMENT)
SCALE: 3/8" = 1'-0"

REV	DATE	DESCRIPTION	BY

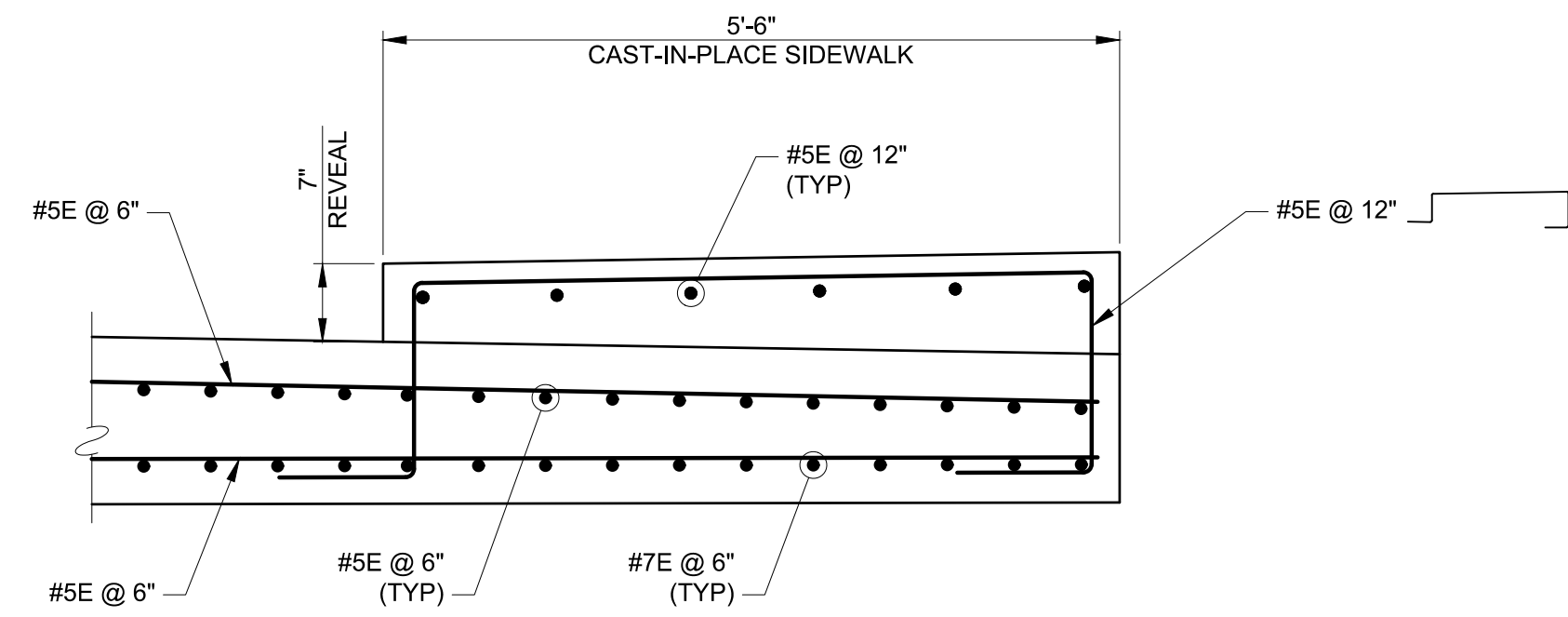
CITY OF KEENE
KEENE, NEW HAMPSHIRE
WINCHESTER STREET
RECONSTRUCTION

APPROACH SLAB DETAILS (1 OF 2)

McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

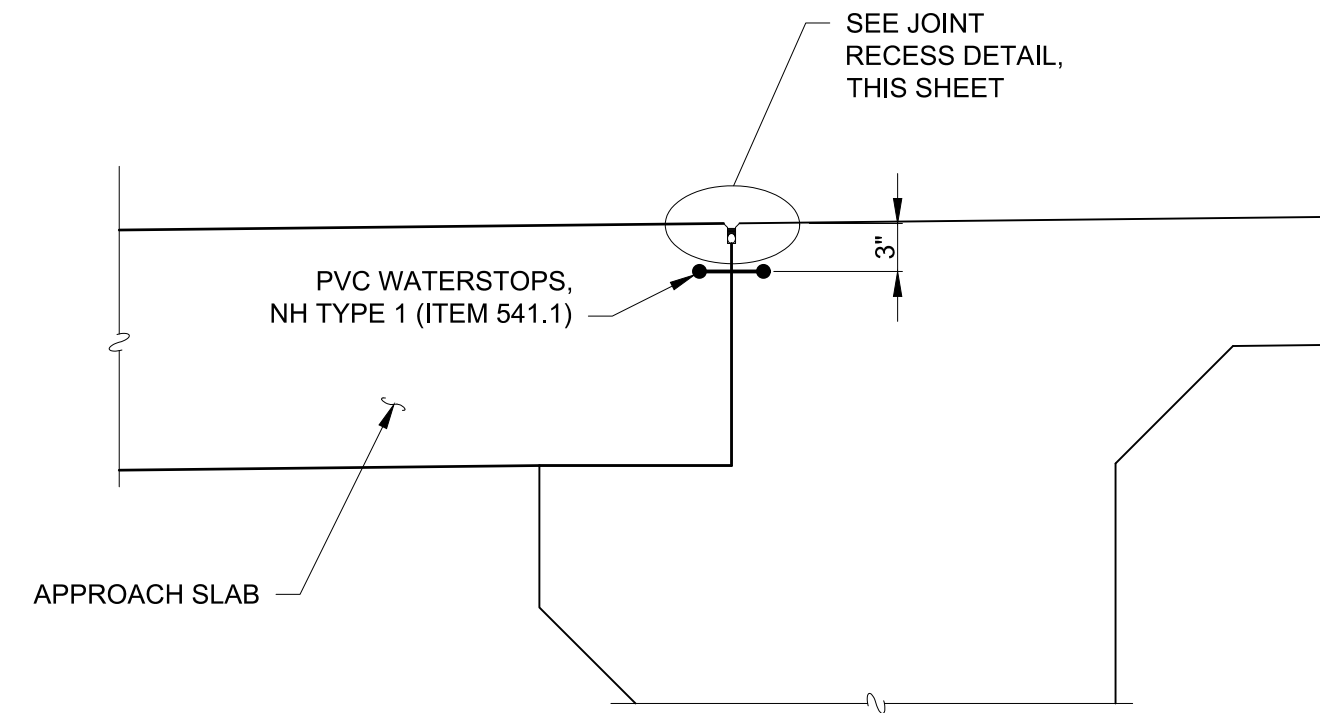
SCALE: AS SHOWN DESIGN: SIW
DRAWN: DJD PROJECT: 18022.01
CHECKED: RLJ DATE: SEPTEMBER 2021

BR-22
138 OF 143

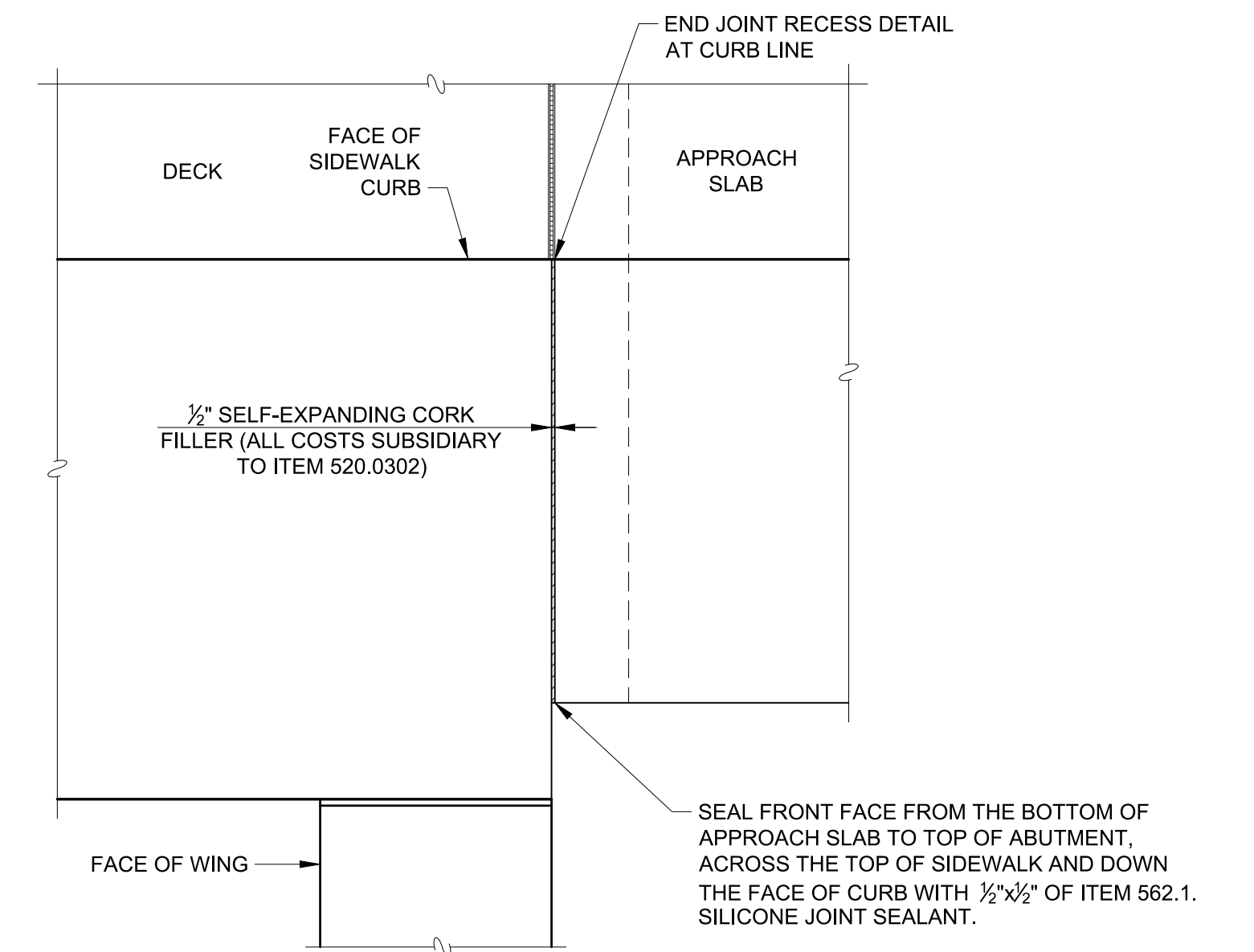


**TYPICAL APPROACH SLAB
SIDEWALK REINFORCEMENT**

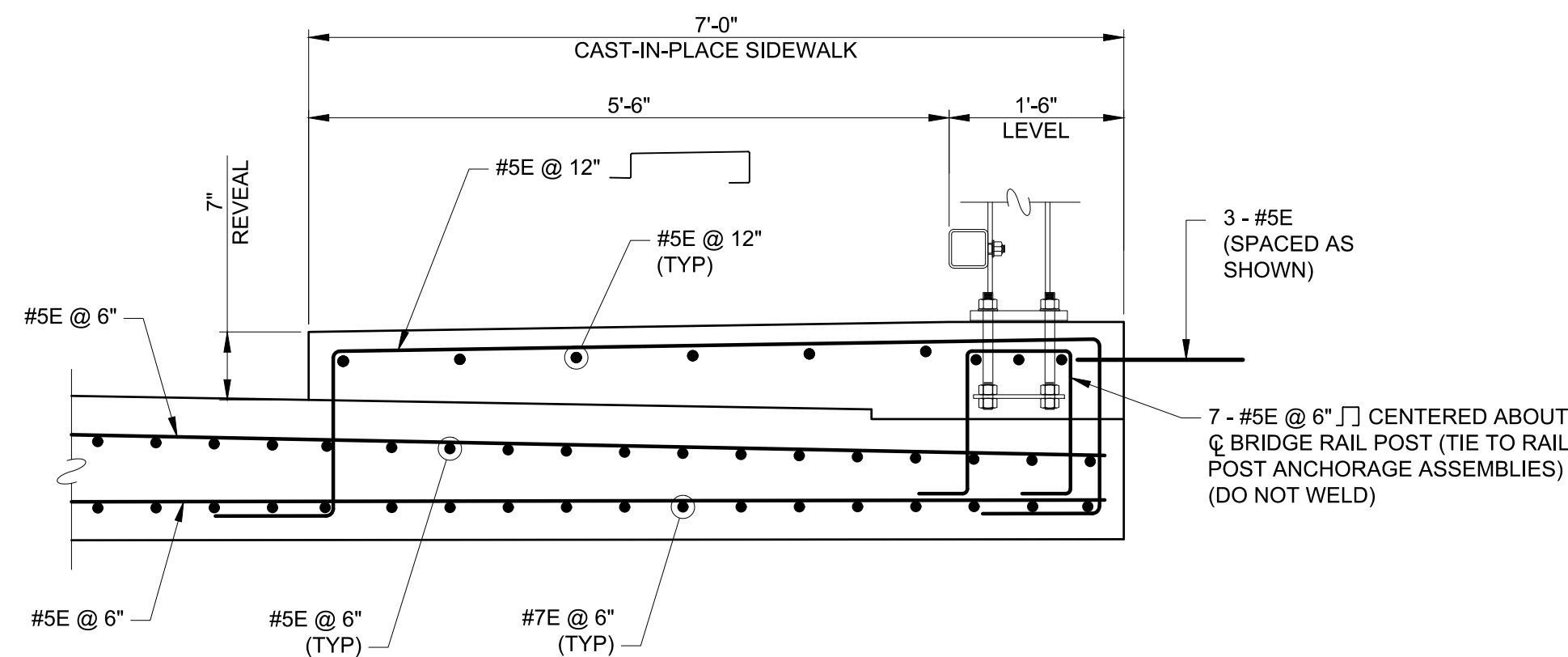
(NE, SE, AND NW CORNER)
SCALE: 3/4" = 1'-0"



DETAIL A
SCALE: 1" = 1'-0"

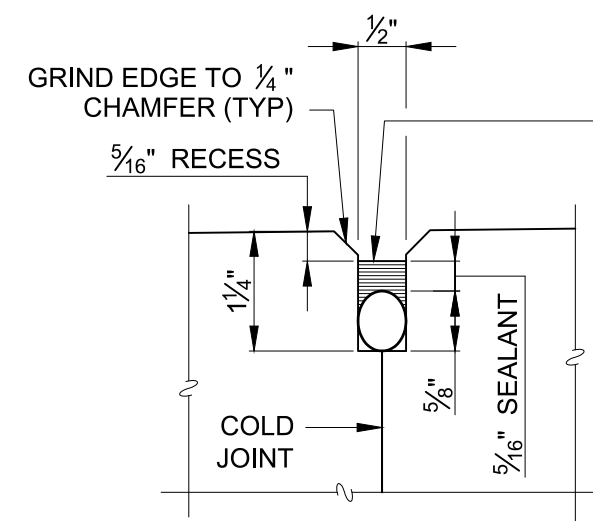


TYPICAL DECK TO APPROACH SLAB JOINT PLAN
SCALE: 1/2" = 1'-0"



**TYPICAL APPROACH SLAB
SIDEWALK REINFORCEMENT**

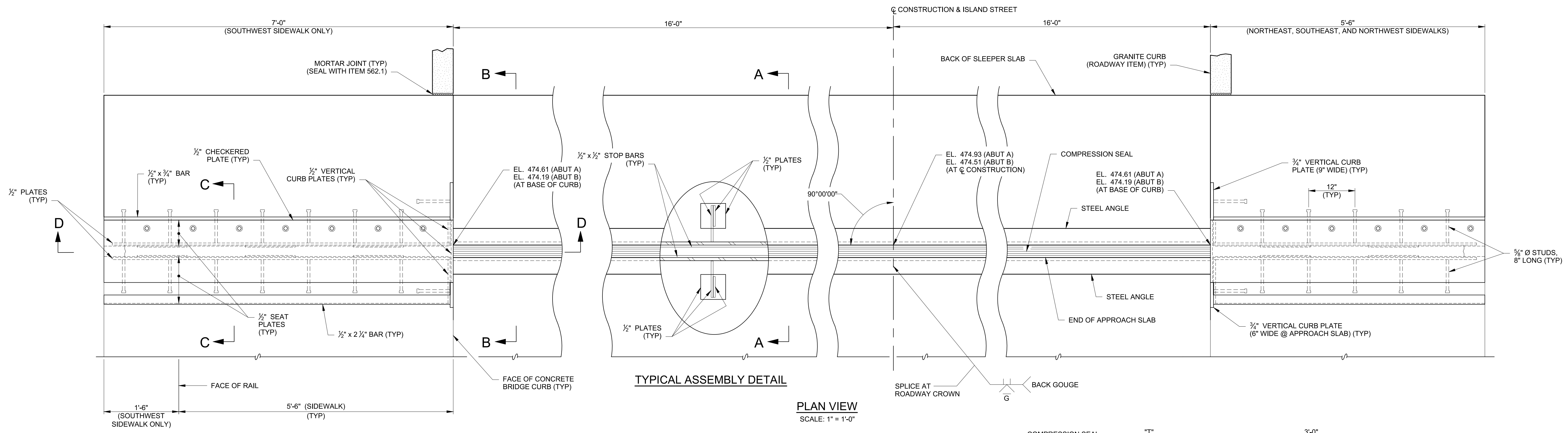
(SW CORNER)
SCALE: 3/4" = 1'-0"



JOINT RECESS DETAIL
SCALE: 6" = 1'-0"

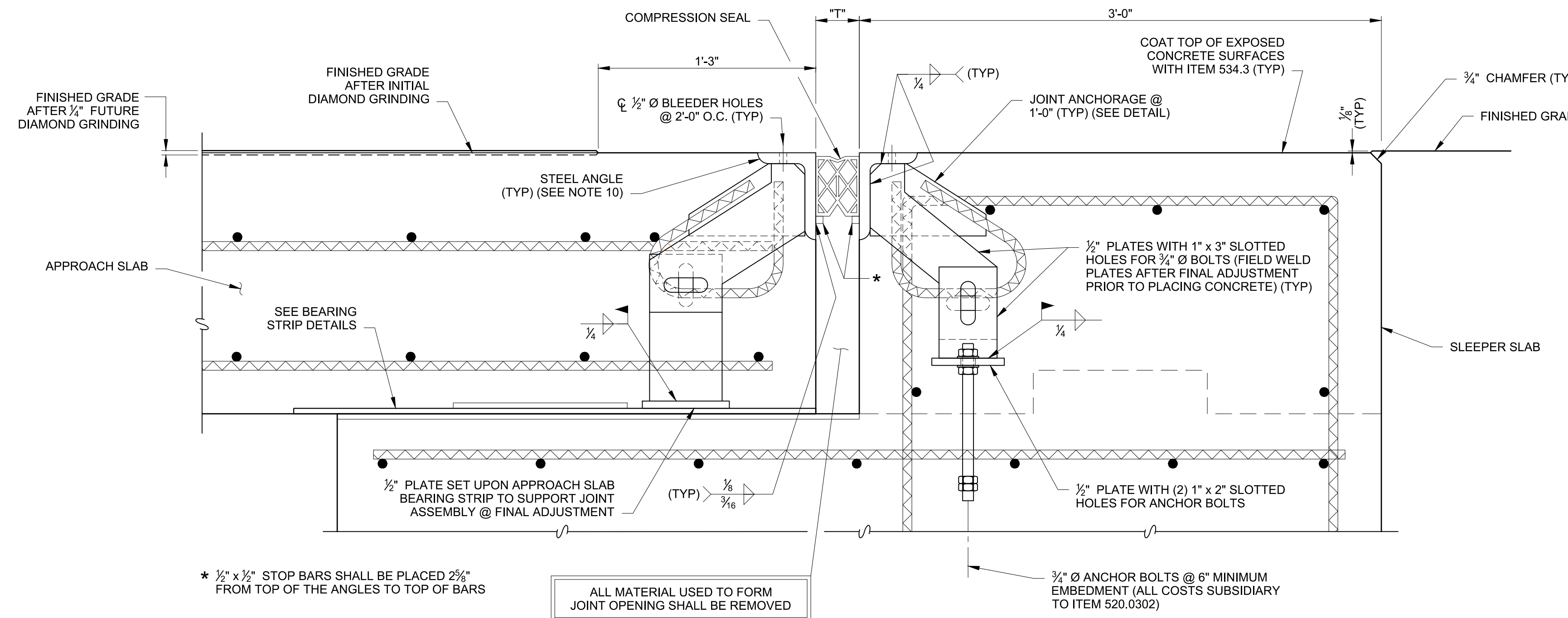
FILL THE RECESS WITH SILICONE JOINT SEALANT (ITEM 562.1). IF THE RECESS IS SAW CUT, WATER BLAST IMMEDIATELY FOLLOWING CUTTING TO REMOVE ANY RESIDUAL SLURRY BEFORE IT DRIES. CLEAN THE VERTICAL FACES OF THE RECESS BY ABRASIVE BLAST, AND AIR BLOW THE RESIDUE FROM THE RECESS. PRIME THE VERTICAL FACES WITH THE MANUFACTURER'S RECOMMENDED PRIMER, AND ALLOW TO DRY. PLACE A 3/8" Ø SOFT CLOSED CELL BACKER ROD IN THE BOTTOM OF THE RECESS. POUR THE SILICONE SEALANT TO A DEPTH OF APPROX. 5/16". ALL COSTS FOR FORMING OR CUTTING THE JOINT SHALL BE SUBSIDIARY TO ITEM 520.0302. THE CLOSED CELL BACKER ROD SHALL BE SUBSIDIARY TO ITEM 562.1

1	12/3/2021	ADJUST FOR PLANNED 2-YEAR CONSTRUCTION	
REV	DATE	DESCRIPTION	BY
McFarland Johnson 53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301		CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION APPROACH SLAB DETAILS (2 OF 2)	
SCALE: AS SHOWN		DESIGN: SIW	BR-23
DRAWN: DJD		PROJECT: 18022.01	
CHECKED: RLJ		DATE: SEPTEMBER 2021	



TYPICAL ASSEMBLY DETAIL

PLAN VIEW
SCALE: 1" = 1'-0"



SECTION A-A
SCALE: 2" = 1'-0"

EXPANSION JOINT NOTES

- ALL EXPANSION JOINT STEEL, INCLUDING ANCHORS, SHALL BE GALVANIZED. STEEL ANGLES SHALL BE ASTM A572 GRADE 50. MINOR STEEL PLATES MAY CONFORM TO ASTM A36. THE ENTIRE ASSEMBLY, INCLUDING COMPRESSION SEAL, SHALL BE PAID FOR AS ITEM 560.1001, PREFABRICATED COMPRESSION SEAL EXPANSION JOINT.
- SPLICES FOR STEEL ANGLES SHALL DEVELOP FULL STRENGTH.
- EXPANSION JOINT OPENING SHALL BE ADJUSTED TO TEMPERATURE ANTICIPATED JUST PRIOR TO POURING CONCRETE. FINAL SETTING IN THE FIELD SHALL BE DETERMINED BY THE CONTRACT ADMINISTRATOR. SEE TEMPERATURE ADJUSTMENT TABLE & NOTES.
- THE COMPRESSION SEAL SHALL BE FURNISHED IN ONE CONTINUOUS LENGTH. NO SPLICES WILL BE ALLOWED. SEAL SHALL BE INSTALLED IN THE FIELD BY THE CONTRACTOR, IN ACCORDANCE WITH THE MANUFACTURER OF THE SEAL, USING AN APPROVED TOOL THAT WILL NOT DAMAGE THE SEAL.
- JOINT SUPPORT PLATES AND CURB PLATES SHALL BE SHOP WELDED TO EXPANSION JOINT STEEL AND SHALL BE NORMAL TO GRADE AFTER JOINT ASSEMBLY HAS BEEN ADJUSTED FOR ROADWAY CROSS-SLOPE AND GRADE. STEEL ANGLES SHALL BE ASSEMBLED WITH A CONSTANT JOINT OPENING TO ENSURE PROPER PERFORMANCE AND WATER TIGHTNESS.
- IMMEDIATELY AFTER THE JOINT HAS BEEN SECURED, REMOVE SHIPPING DEVICES AND GRIND SMOOTH ANY WELDS ON EXPOSED SURFACES. REPAIR ANY DAMAGE TO GALVANIZED SURFACES IN ACCORDANCE WITH SECTION 550.
- PROTECT TOP OF EXPANSION JOINT DURING PLACEMENT OF CONCRETE AND BITUMINOUS PAVEMENT.
- THE COMPRESSION SEAL HAS BEEN DESIGNED FOR A TOTAL FACTORED MOVEMENT OF 0.67 INCHES. DESIGN INCLUDES MOVEMENT DUE TO TEMPERATURE, SKEW, SHRINKAGE AND MINIMUM INSTALLATION WIDTH. THE CONTRACTOR SHALL USE A WA-200 SEAL BY WATSON BOWMAN OR CV-2000 BY D.S. BROWN, AS NOTED IN THE QPL.
- ELEVATIONS SHOWN AT TOP OF ANGLES ARE 1/8" LOWER THAN PROPOSED FINISHED ROADWAY GRADE.
- ANGLES 6" x 4" x 3/4" SHALL BE UTILIZED FOR SEALS LESS THAN 5" (HEIGHT). FOR SEALS GREATER THAN OR EQUAL TO 5" (HEIGHT) STEEL ANGLES SHALL BE 8" x 4" x 3/4".
- PRIOR TO INSTALLING THE SEAL, ALL TEMPORARY FORM WORK SHALL BE REMOVED. STEEL ANGLES AND STOP BARS SHALL BE MAINTAINED FREE FROM DIRT, WATER AND ANY OTHER LOOSE DEBRIS, WITH THE USE OF COMPRESSED AIR, TO ENSURE PROPER FIT OF THE SEAL. CARE SHALL BE TAKEN NOT TO DAMAGE GALVANIZED SURFACES.
- A TEMPORARY SEAL(S) SHALL BE INSTALLED PRIOR TO THE START OF THE WINTER MAINTENANCE PERIOD FOR ALL JOINT ASSEMBLIES OR PORTIONS THEREOF THAT WILL BE IN PLACE THROUGHOUT THE WINTER. ALL TEMPORARY SEALS SHALL BE REMOVED AND JOINT OPENINGS AND SUBSTRUCTURE SHALL BE CLEANED PRIOR TO INSTALLING THE FINAL SEAL. ALL COSTS SHALL BE SUBSIDIARY TO ITEM 560.1001.

TEMPERATURE ADJUSTMENT TABLE	
TEMPERATURE	"T"
20° F	1 3/8"
35° F	1 3/16"
50° F	1 1/4"
65° F	1 1/16"
80° F	1 1/8"
95° F	1 1/16"

TEMPERATURE ADJUSTMENT NOTES

- "T" DIMENSIONS ARE PERPENDICULAR TO FACE SLEEPER SLAB.
- MINIMUM "T" WIDTH FOR SEAL INSTALLATION = 1.20" (APPROXIMATELY 65° F OR LESS).
- VALUES IN THE TEMPERATURE ADJUSTMENT TABLE ARE FOR SETTING THE EXPANSION JOINT ASSEMBLY IMMEDIATELY PRIOR TO POURING THE DECK BLOCKOUT.

* 1/2" x 1/2" STOP BARS SHALL BE PLACED 2 3/8" FROM TOP OF THE ANGLES TO TOP OF BARS

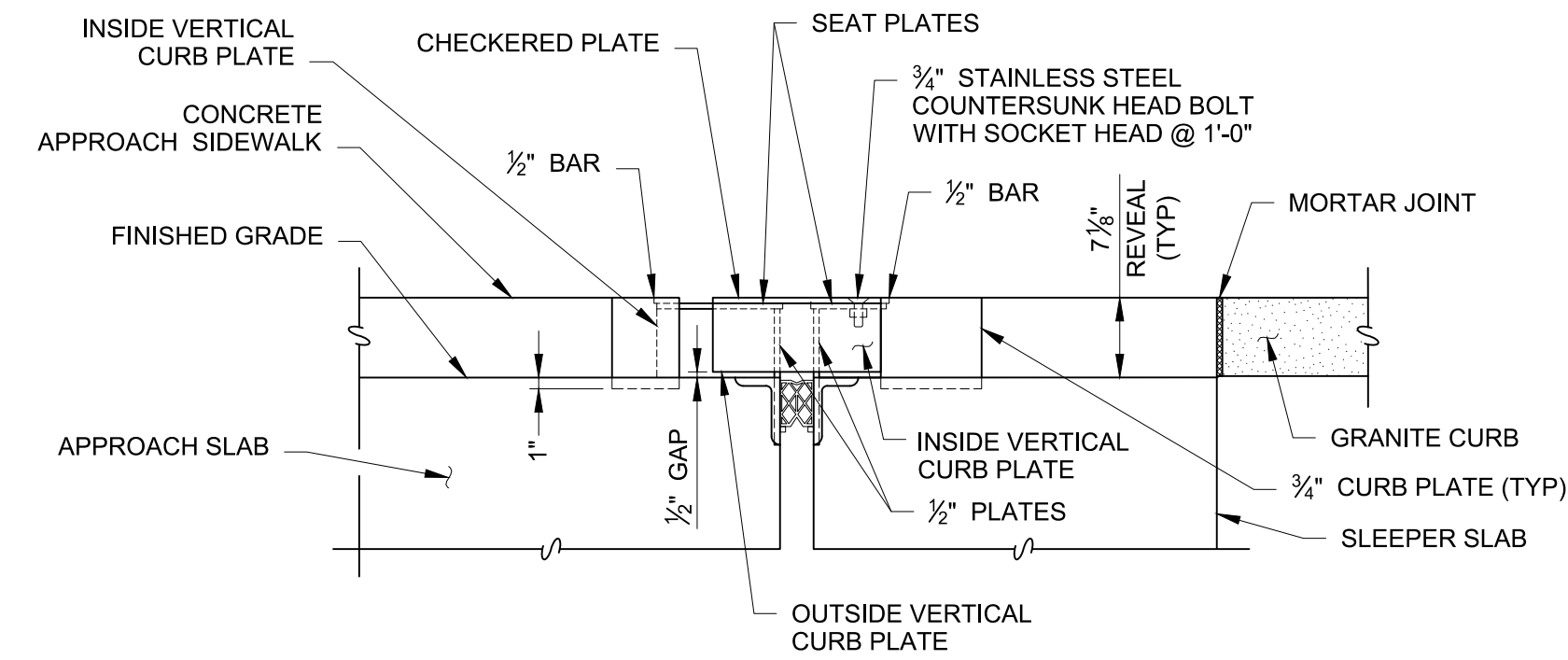
ALL MATERIAL USED TO FORM JOINT OPENING SHALL BE REMOVED

3/4" Ø ANCHOR BOLTS @ 6" MINIMUM EMBEDMENT (ALL COSTS SUBSIDIARY TO ITEM 520.0302)

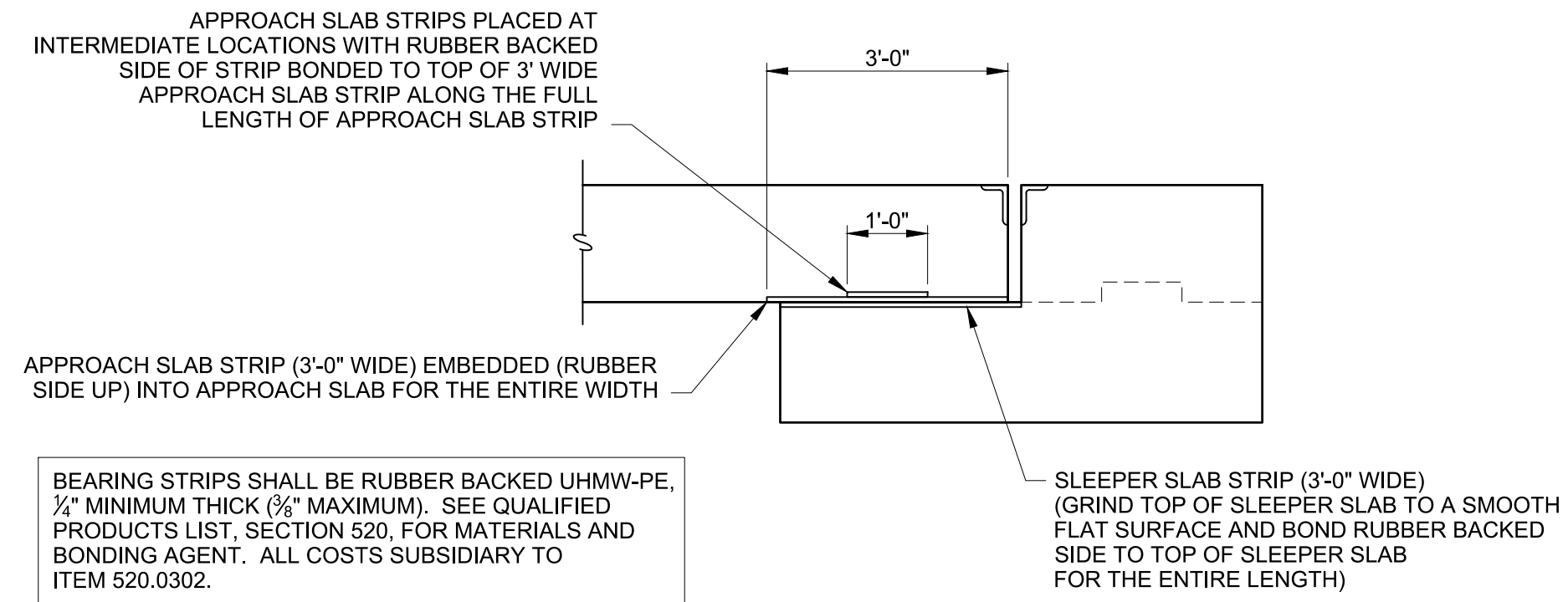
CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
COMPRESSION SEAL JOINT DETAILS (1 OF 2)			
SCALE: AS SHOWN	DESIGN: SIW	BR-24 140 OF 142	
DRAWN: DJD	PROJECT: 18022.01		
CHECKED: RLJ	DATE: SEPTEMBER 2020		

McFarland Johnson

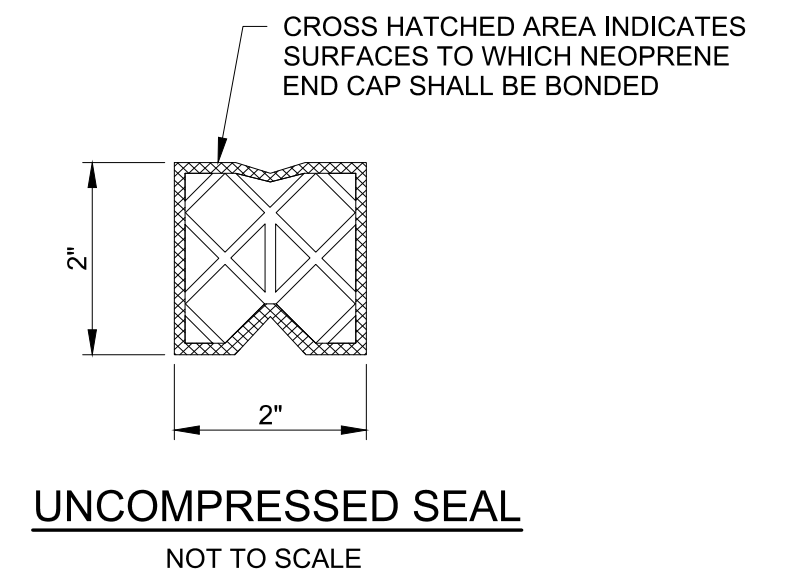
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301



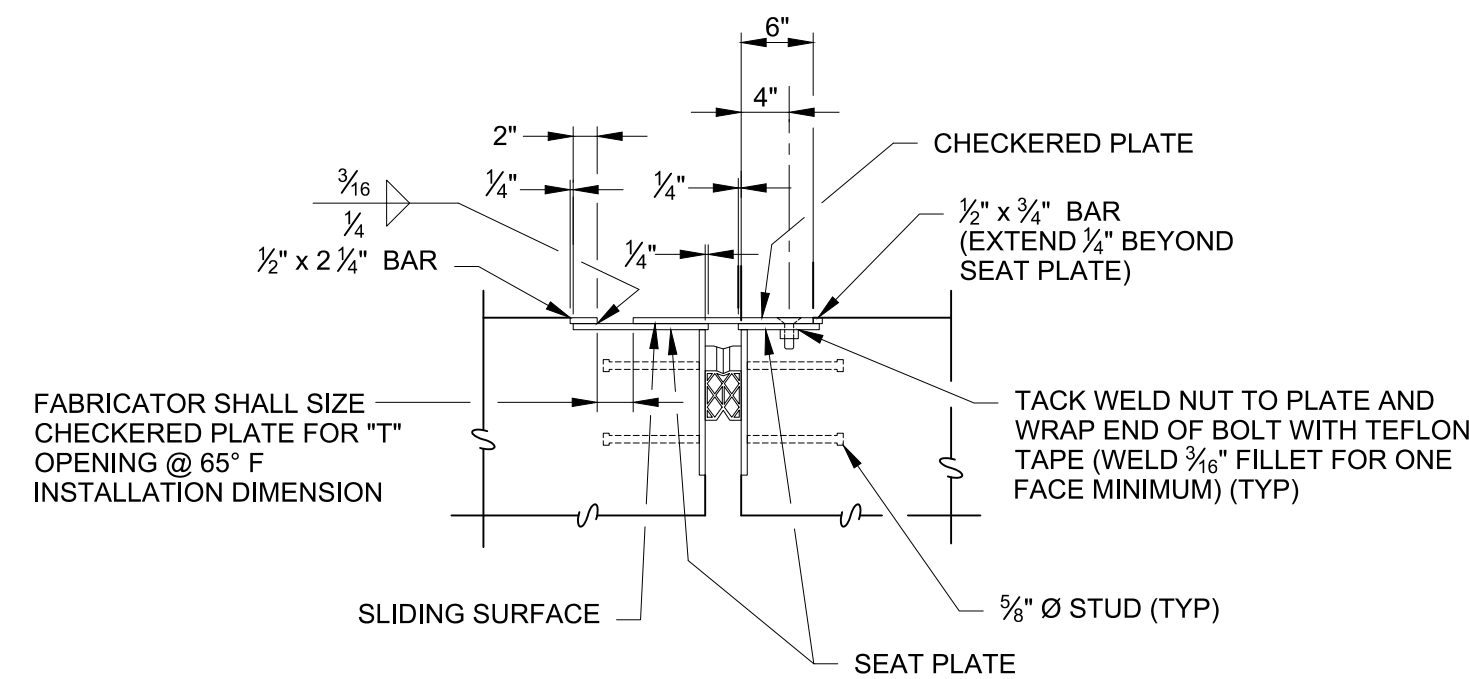
SECTION B-B
SCALE: 3/4" = 1'-0"



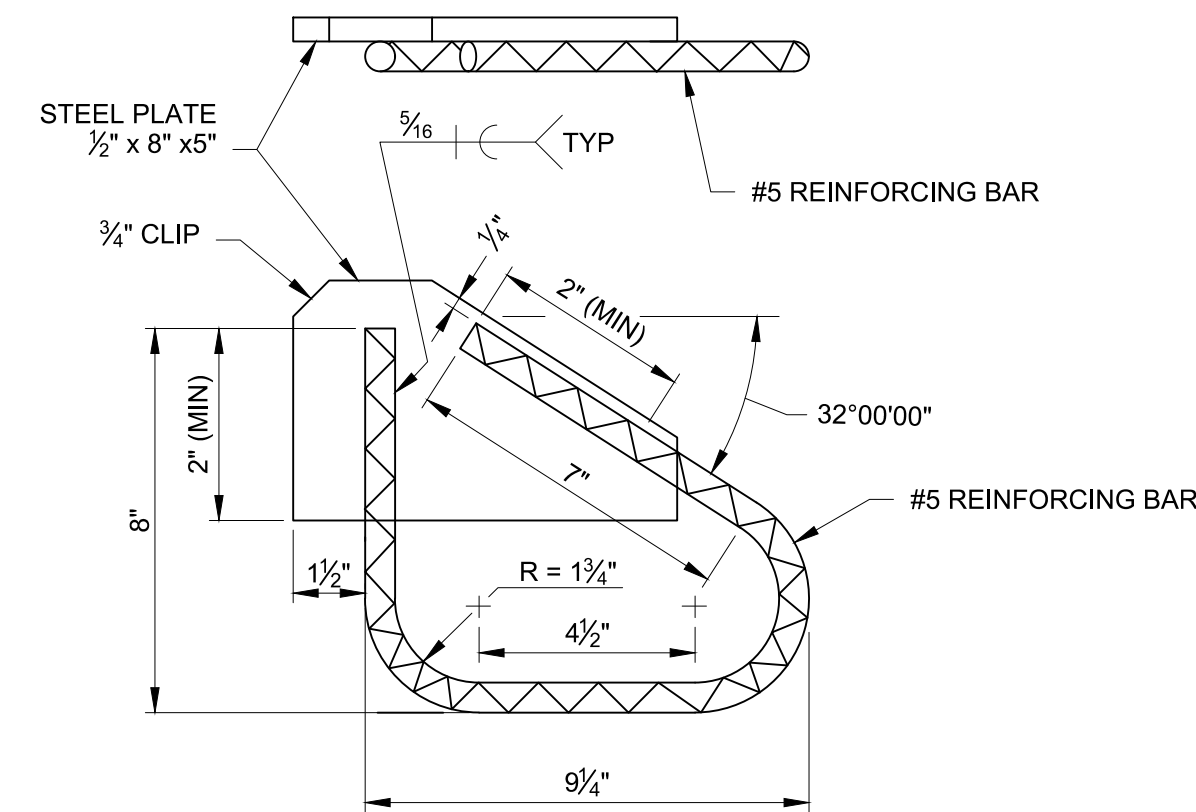
BEARING STRIP DETAILS
NOT TO SCALE



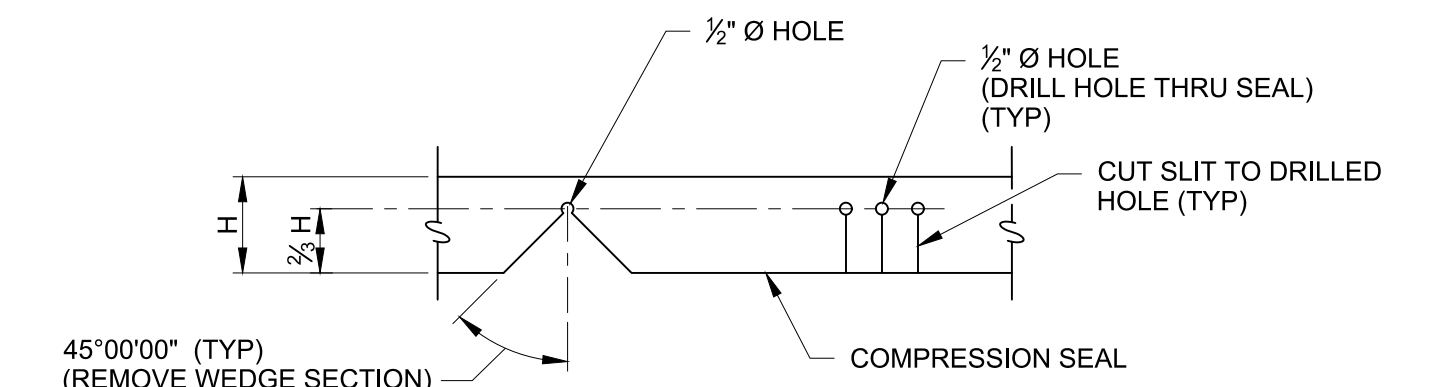
UNCOMPRESSED SEAL
NOT TO SCALE



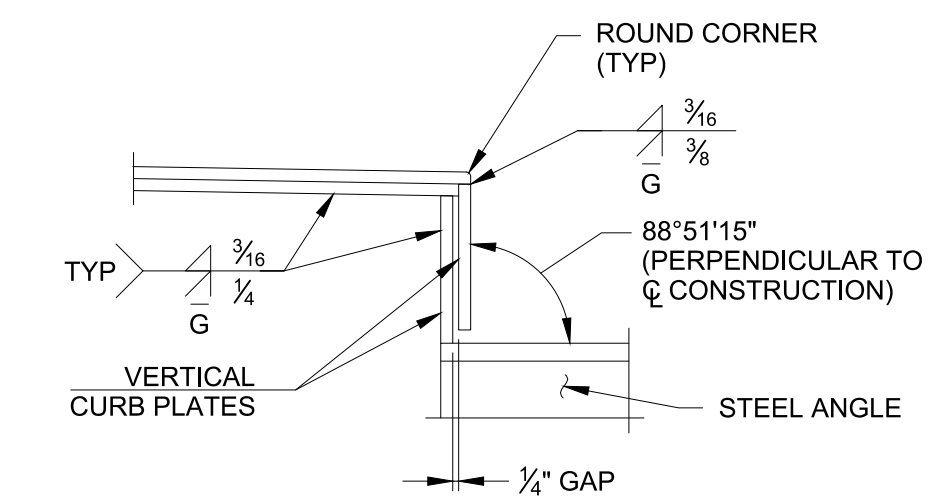
SECTION C-C
SCALE: 3/4" = 1'-0"



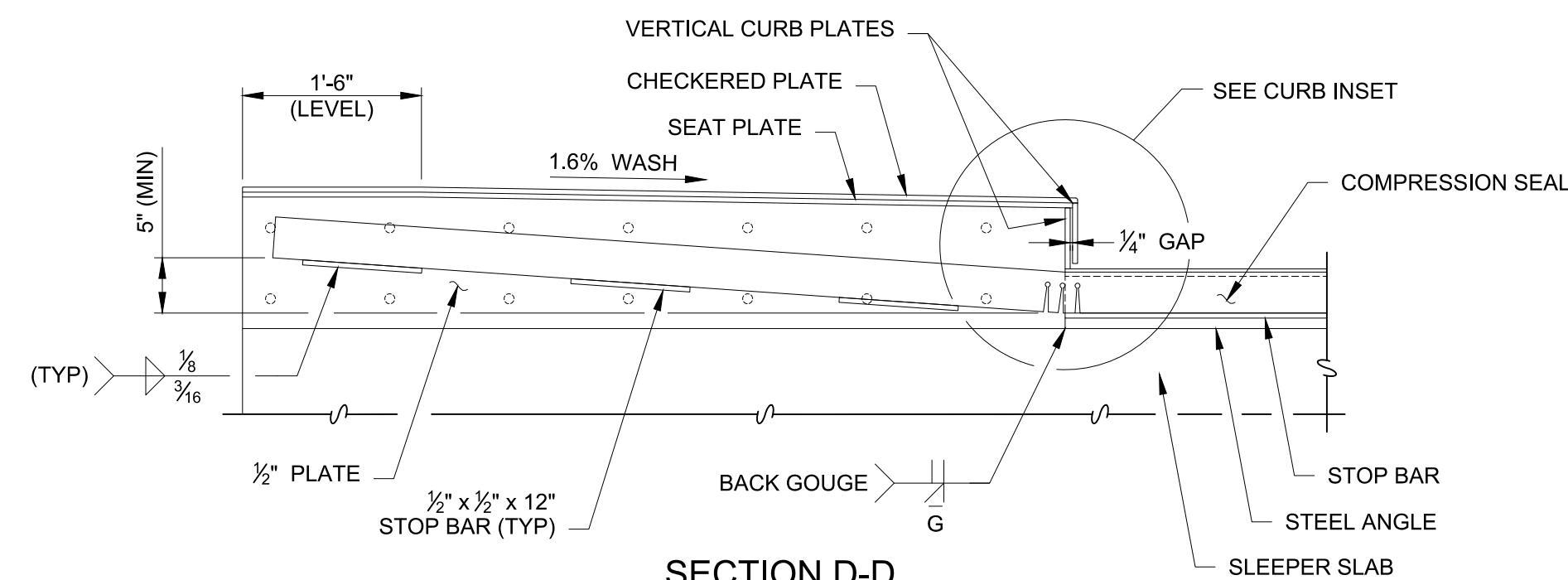
ANCHOR DETAIL (90° CROSSING)
SCALE: 3" = 1'-0"



RELIEF CUT DETAILS
NOT TO SCALE

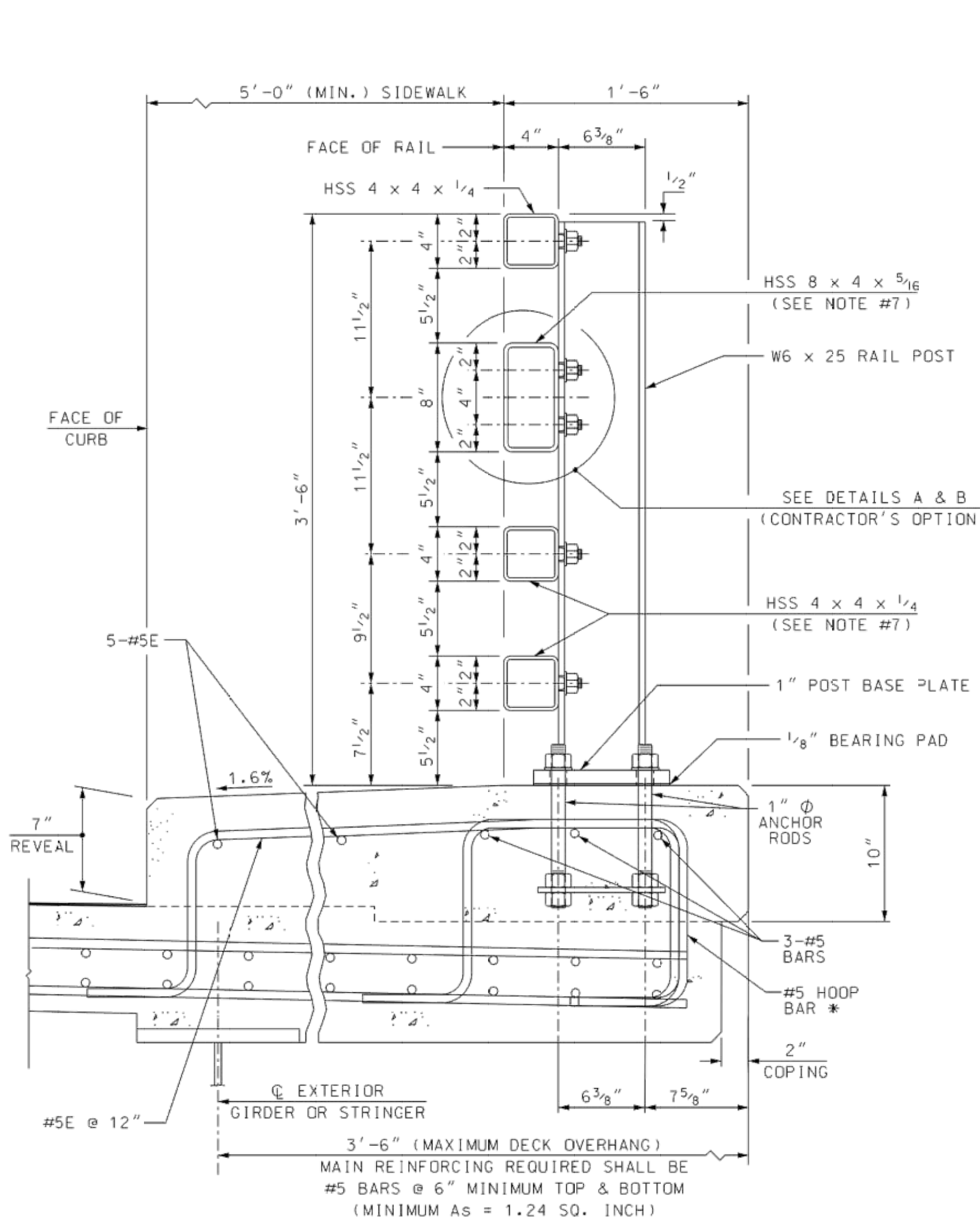


CURB INSET
NOT TO SCALE



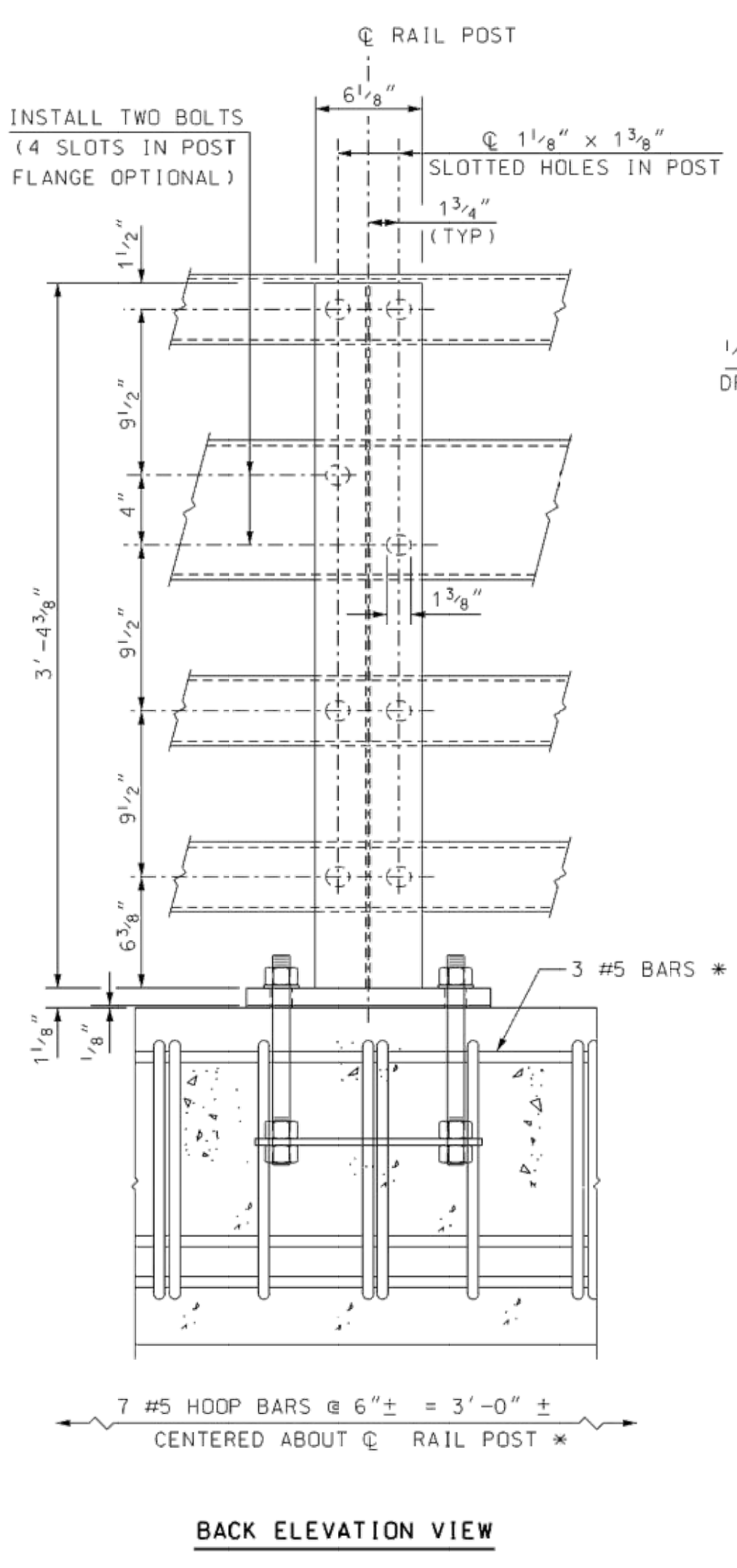
SECTION D-D
SCALE: 3/4" = 1'-0"

CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION			
COMPRESSION SEAL JOINT DETAILS (2 OF 2)			
REV	DATE	DESCRIPTION	BY
		McFarland Johnson	
53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301			
SCALE:	AS SHOWN	DESIGN:	SIW
DRAWN:	DJD	PROJECT:	18022.01
CHECKED:	RLJ	DATE:	SEPTEMBER 2020
			BR-25 141 OF 142

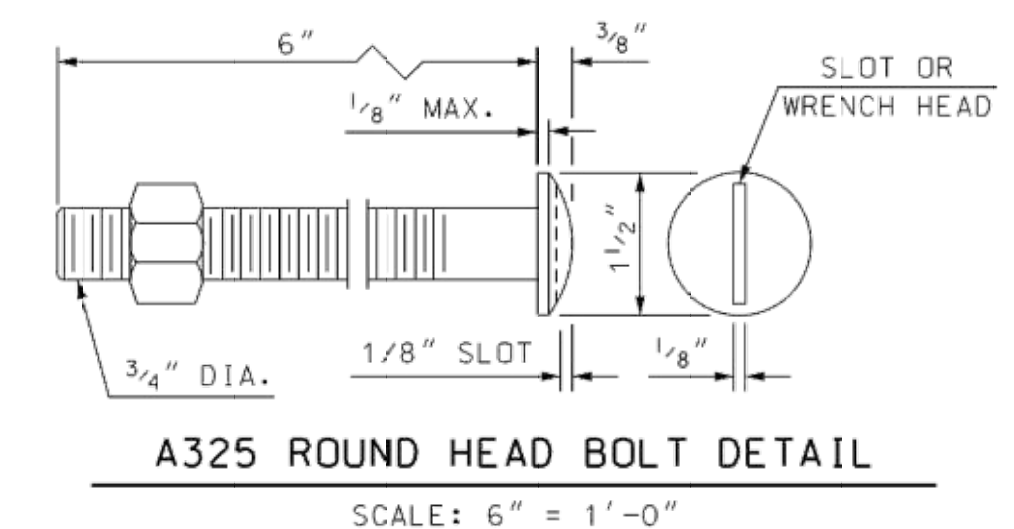
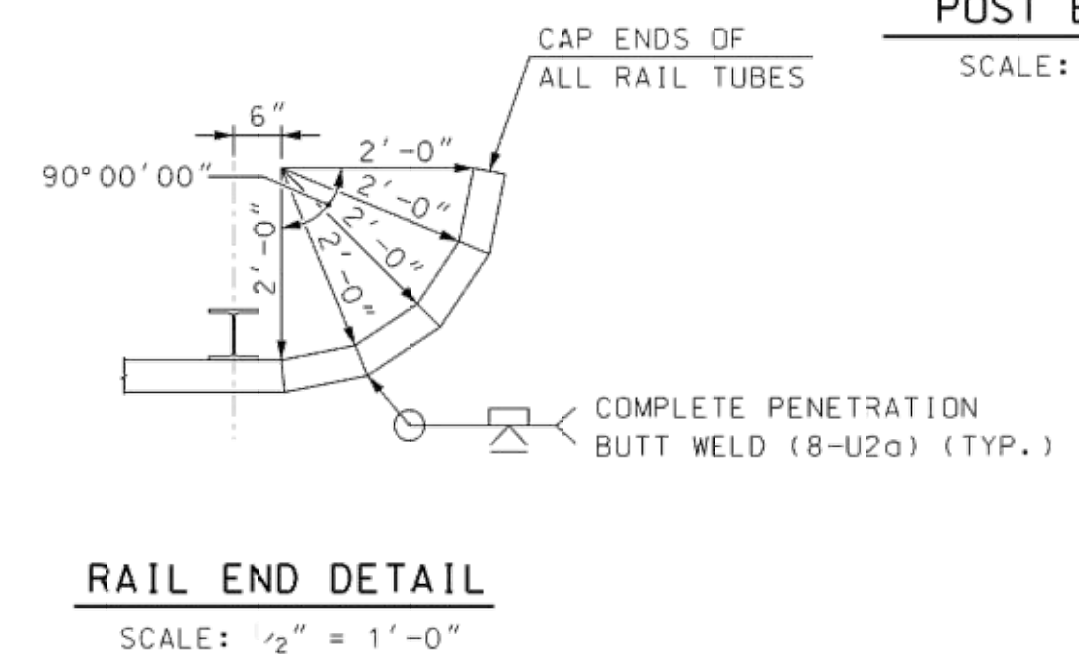
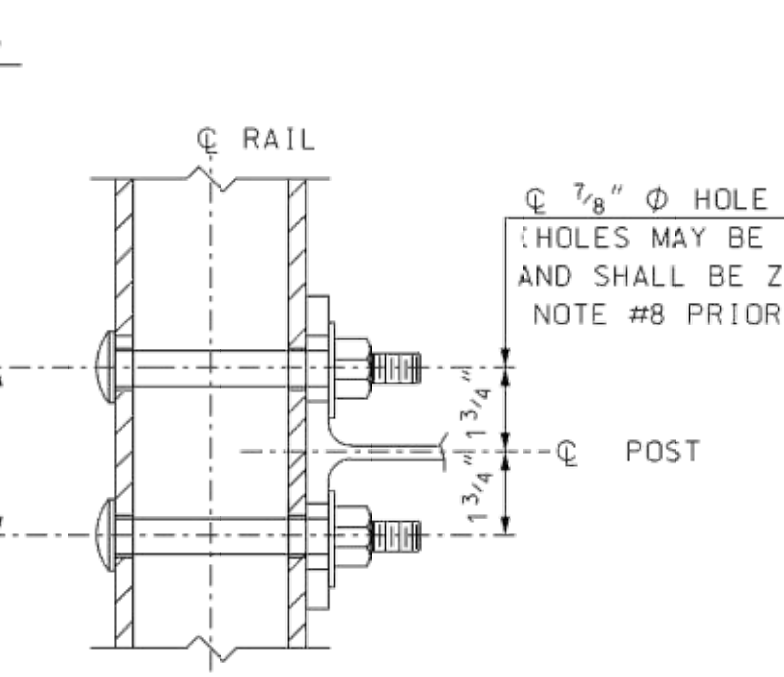
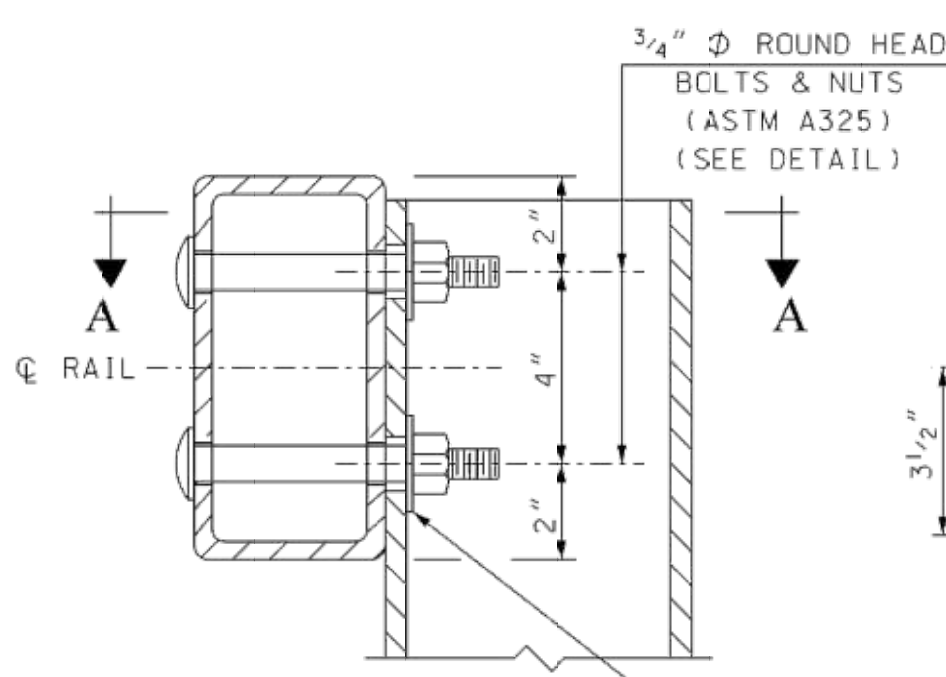
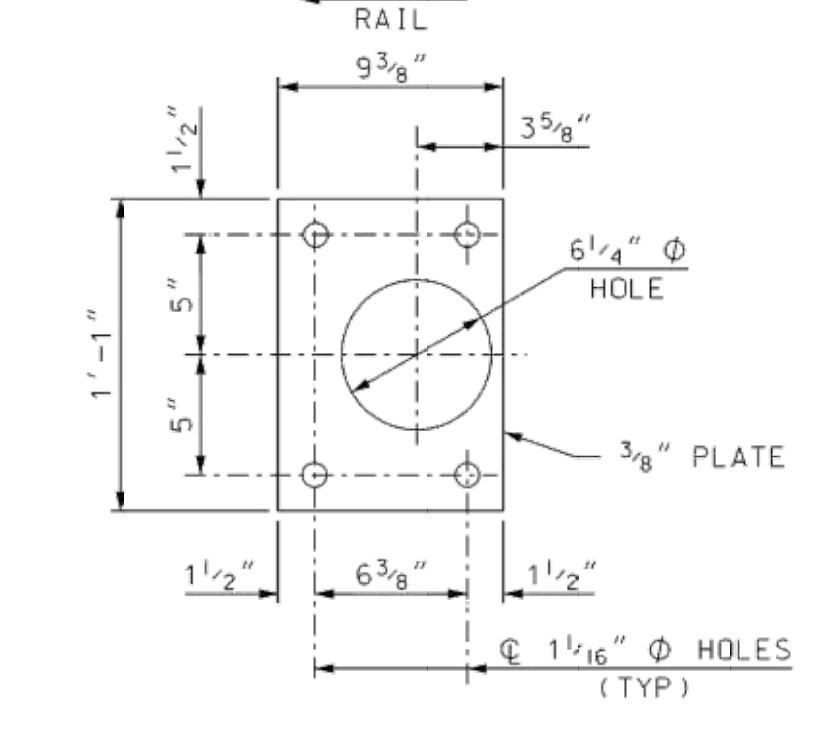
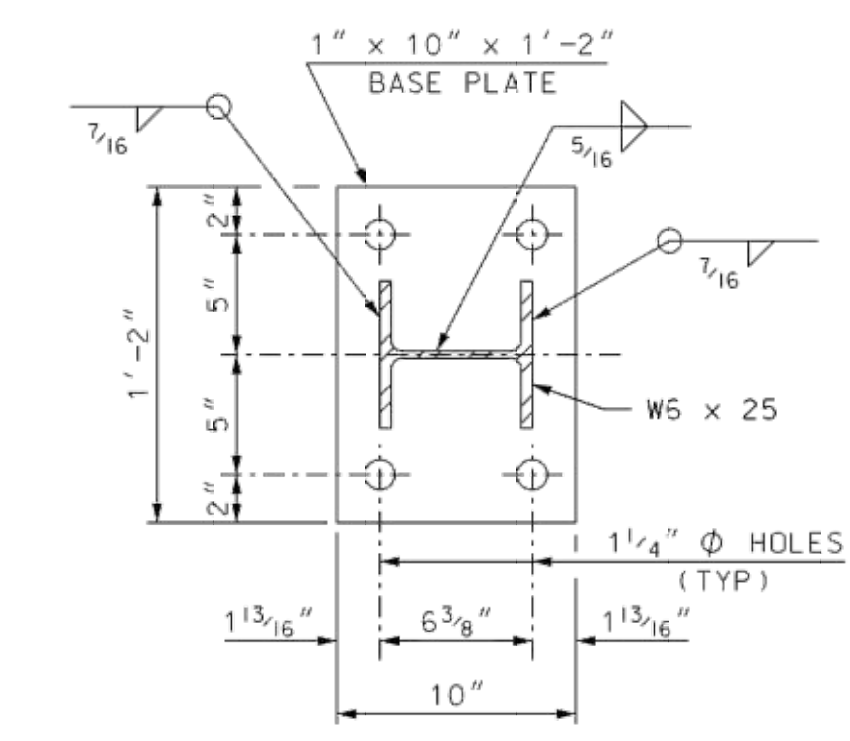
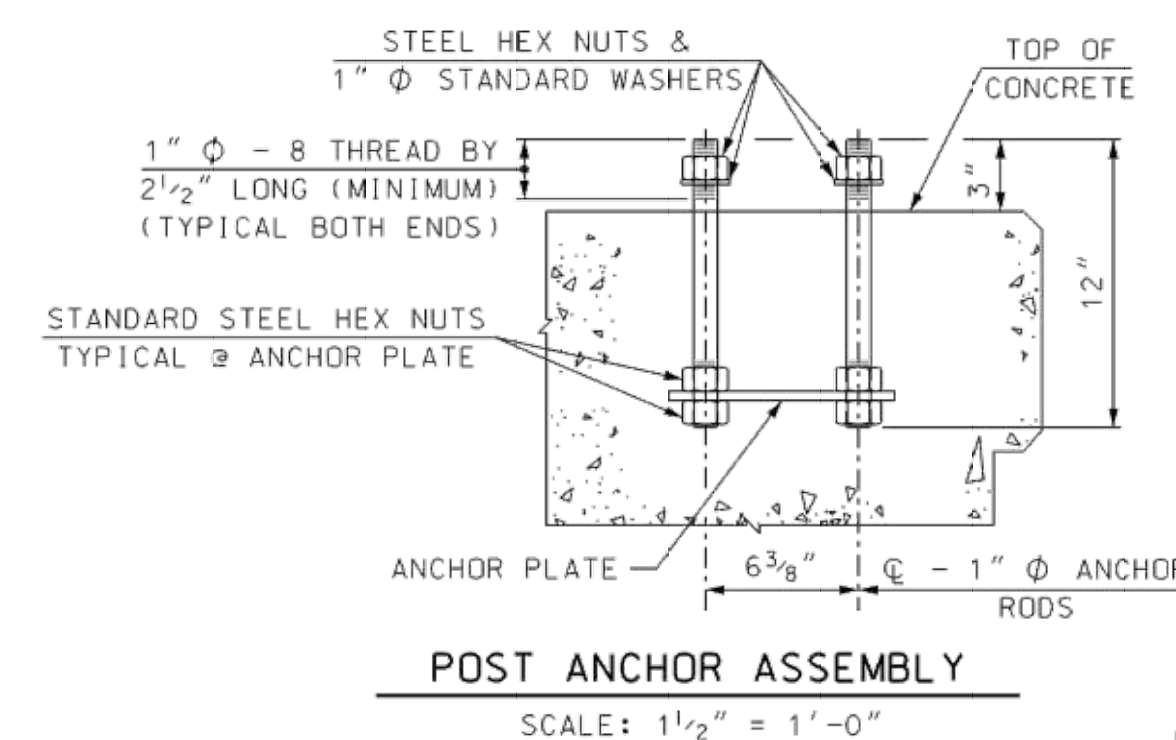
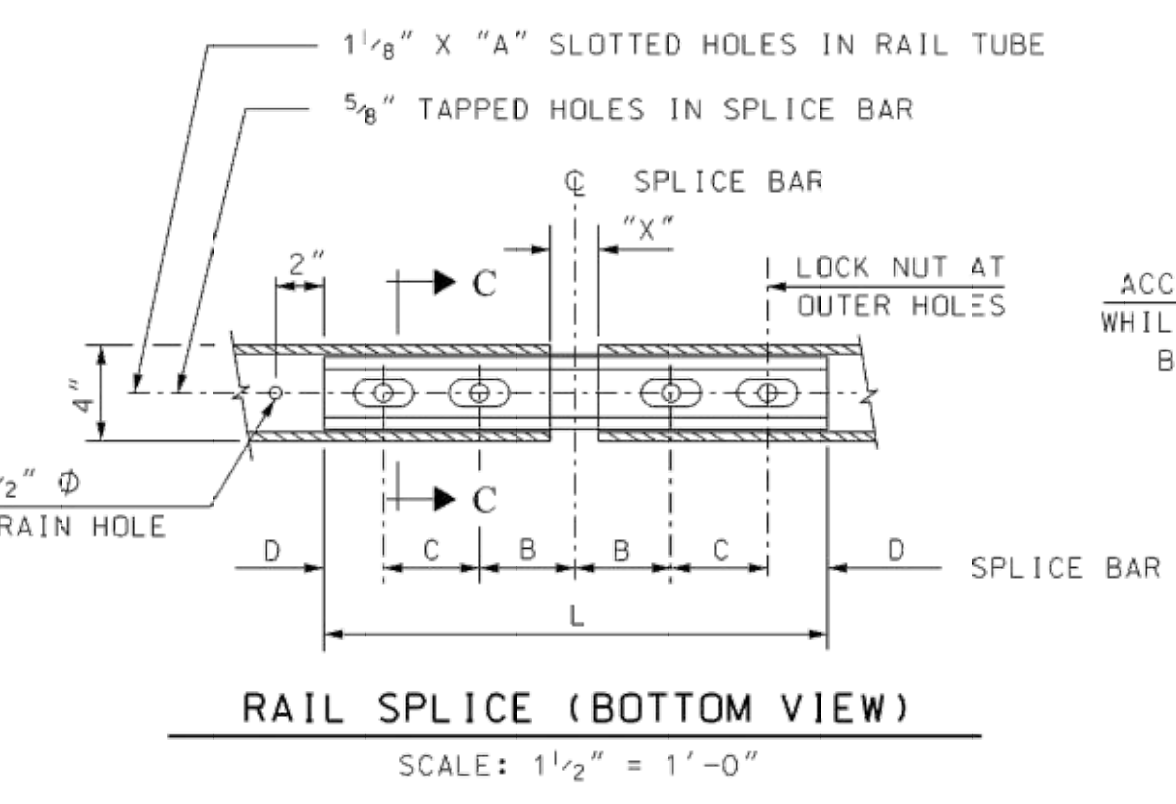


SECTION VIEW

POST ASSEMBLY
SCALE: 1 1/2" = 1'-0"

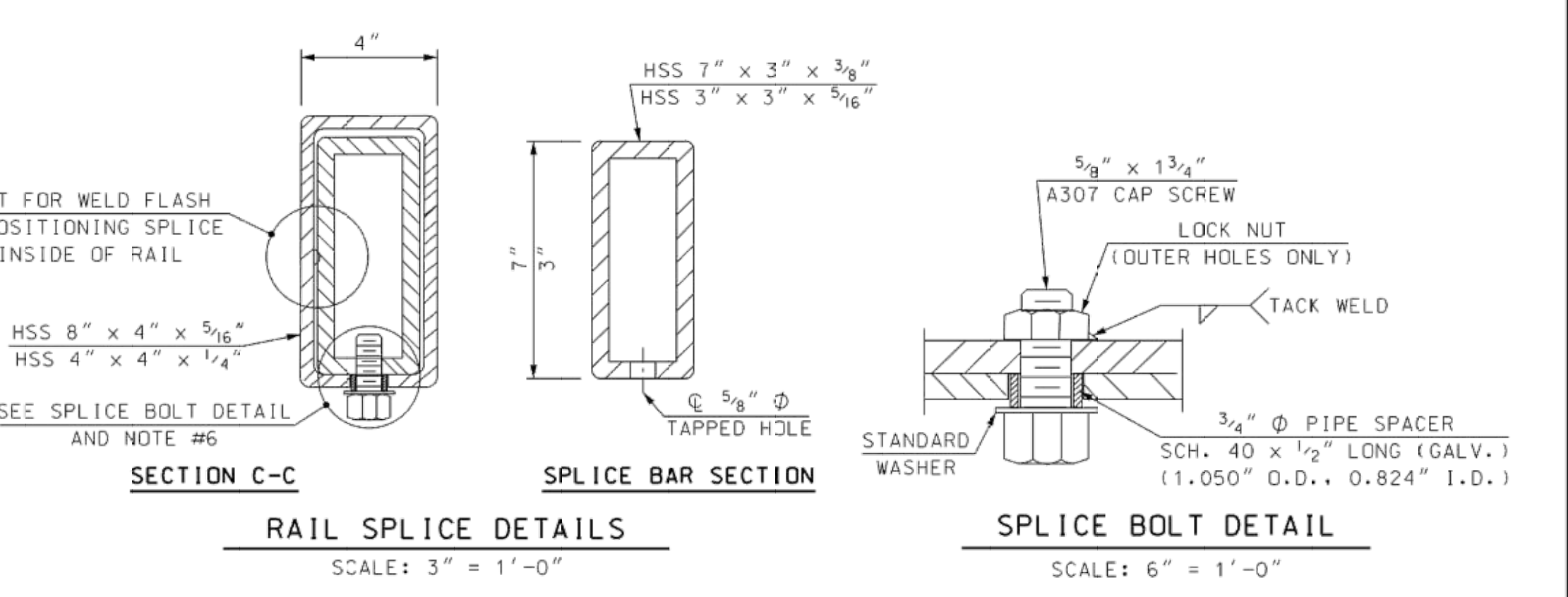
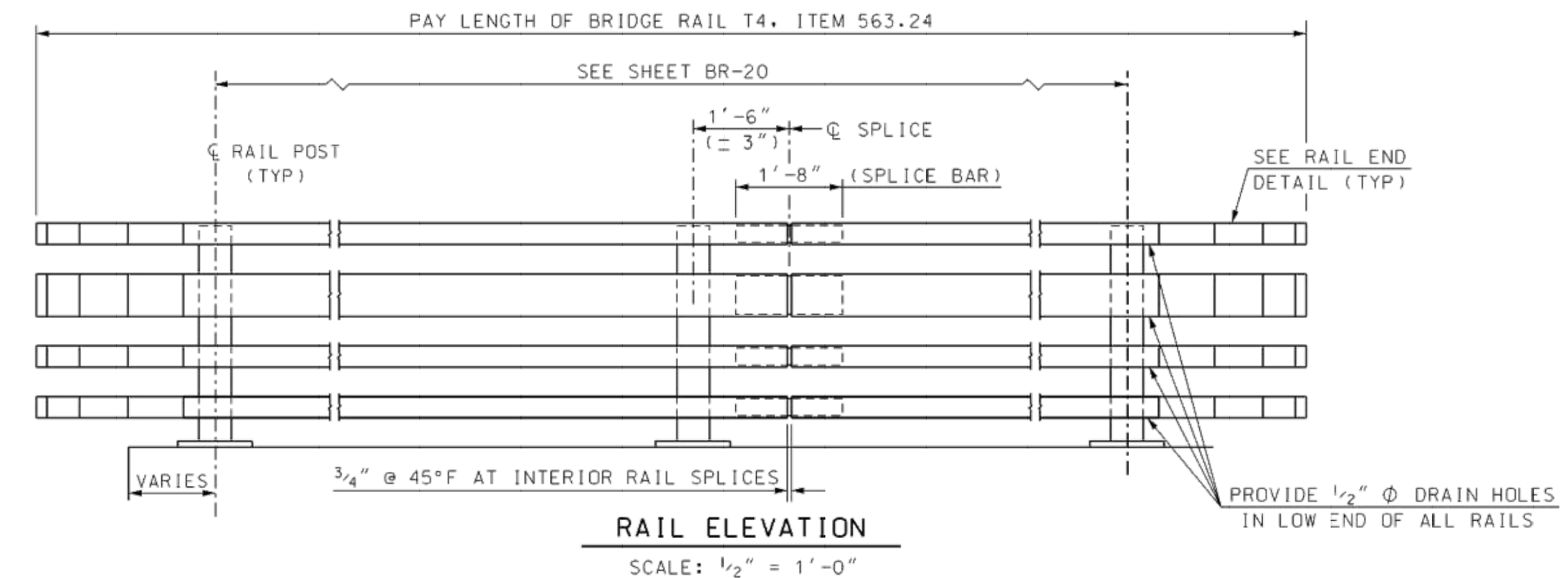


BACK ELEVATION VIEW



SPLICE BAR DIMENSION TABLE						
T	A	B	C	D	X	L
INTERIOR	2 1/2"	4"	4"	2"	3/4"	1'-8"
** ≤ 3 1/4"	2 1/2"	4"	4"	2"	2"	1'-8"
** 3 1/4" < T ≤ 5 1/4"	3 1/2"	5"	5"	2 1/2"	3"	2'-1"

T = TOTAL MOVEMENT OF BRIDGE
** = END SPLICE BAR

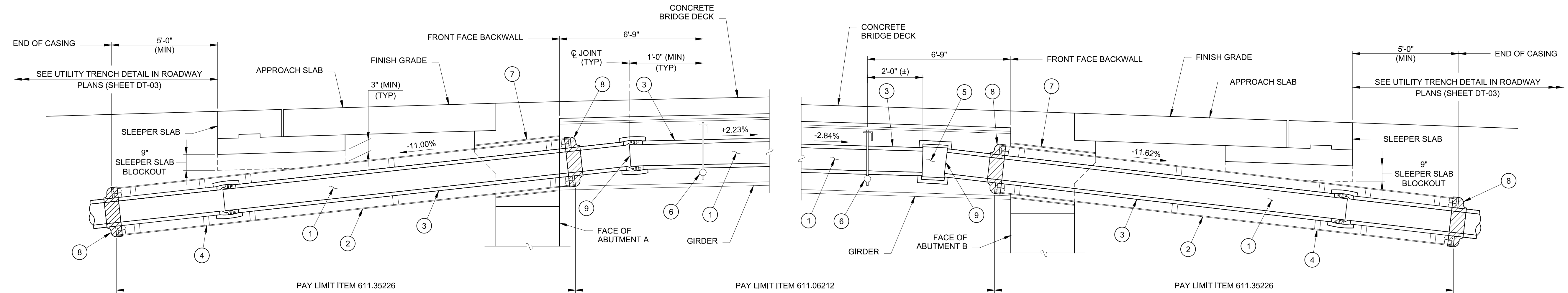


- RAIL NOTES**
- ITEM 563.24, BRIDGE RAIL T4, SHALL INCLUDE POSTS, BASE PLATES, ANCHOR PLATES, ANCHOR RODS, PREFORMED PADS, RAIL ASSEMBLY BOLTS, NUTS, WASHERS, STUDS, STRUCTURAL TUBING, SPLICE BARS, PIPE SPACERS, ALL APPURTENANCES, AND GALVANIZING.
 - BRIDGE RAIL POSTS SHALL BE SET NORMAL (9C DEGREES) TO THE PROFILE GRADE, EXCEPT ON GRADES OVER 5% WHERE POSTS SHALL BE SET VERTICAL.
 - ENDS OF RAIL TUBE SECTIONS SHALL BE SAWED OR MILLED AND SHALL BE TRUE AND SMOOTH. ALL CUT EDGES OF ALL MATERIAL SHALL BE GROUND SMOOTH.
 - EACH PIECE OF RAIL TUBING SHALL BE ATTACHED TO A MINIMUM OF THREE (3) POSTS.
 - BOLT HOLES SHALL BE DRILLED OR PUNCHED. FLAME CUTTING MAY BE USED TO FINISH SLOTTED HOLES IF MECHANICALLY GUIDED.
 - AT INTERIOR SPLICES, PIPE SPACERS SHALL BE USED ON ONLY ONE SIDE OF THE SPLICE TO ALLOW MOVEMENT ON THAT SIDE. ALL RAILS IN A SPLICE SHALL RECEIVE THE SAME TREATMENT. AT END SPLICES PIPE SPACERS SHALL BE USED ON BOTH SIDES OF THE SPLICE TO ALLOW MOVEMENT ON EACH SIDE.
 - MILL OR SHOP TRANSVERSE WELDS SHALL NOT BE PERMITTED ON ANY RAIL ELEMENT. RAIL ELEMENTS USED ON CURVES SHALL USE 3/8" WALL TUBES AND SHALL BE SHOP FORMED TO THE REQUIRED CURVATURE (SEE SECTION 563.2.2.1).
 - NO PUNCHING, DRILLING, CUTTING OR WELDING SHALL BE PERMITTED AFTER GALVANIZING, EXCEPT AS ALLOWED IN DETAILS A. DAMAGED AREAS OF GALVANIZING SHALL BE THOROUGHLY CLEANED, PRETREATED, AND PAINTED WITH TWO COATS OF ORGANIC ZINC-RICH GALVANIZING REPAIR PAINT, HAVING A MINIMUM 92% ZINC BY WEIGHT, TO A THICKNESS EQUAL TO THE ORIGINAL COATING, ACCORDING TO SECTION 550.2.9.1 AND ASTM A780.
 - NUTS FOR 1" φ THREADED ANCHOR RODS CONNECTING THE BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8 TURN.
 - THREADS FOR ANCHOR RODS MAY BE ROLLED OR CUT. IF CUT THREADS ARE USED, BOLT DIAMETER SHALL NOT BE LESS THAN NOMINAL DIAMETER. IF ROLLED THREADS ARE USED, ROD DIAMETER SHALL NOT BE LESS THAN ROOT DIAMETER OF THREADS.
 - THIS BRIDGE RAIL SYSTEM WAS SUCCESSFULLY CRASH TESTED FOR AASHTO PL2 IN 1994 BY THE NEW ENGLAND TRANSPORTATION CONSORTIUM AND ACCEPTED AS NCHRP 350 TL-4 PER FHWA LETTER HMHS-850, MARCH 11, 1999.

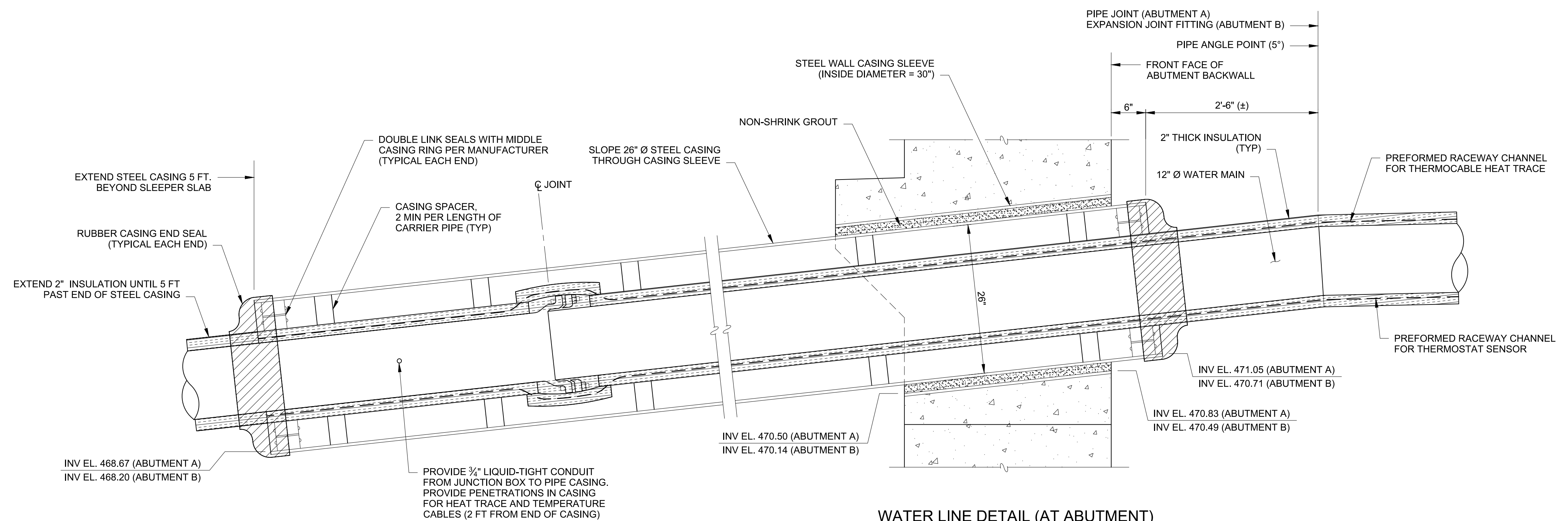
- MATERIAL NOTES**
- STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500, GRADE B. STRUCTURAL STEEL TUBING. RAIL TUBING SHALL MEET THE LONGITUDINAL CHARTY V-NOTCH REQUIREMENTS OF 15 FT. LBS. AT 0°F. FOR ASTM A500, GRADE B, THE TEST SAMPLES SHALL BE TAKEN AFTER FORMING THE TUBES. CHARTY V-NOTCH IS NOT REQUIRED FOR SPLICE TUBES.
 - RAIL POSTS AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A572 GR 50, EXCEPT ANCHOR PLATES MAY BE ASTM A36.
 - DETAIL A BOLTS SHALL BE ASTM A325 OR A449. ALL OTHER BOLTS AND NUTS SHALL CONFORM TO ASTM A307 AND ASTM 563 GRADE A RESPECTIVELY OR BETTER, EXCEPT THAT ASTM A307 NUTS MAY BE USED ON THE BOTTOM OF ANCHOR ASSEMBLY. WASHERS SHALL BE HARDENED STEEL COMMERCIAL TYPE A PLAIN WIDE WASHERS AND SHALL MEET THE DIMENSIONAL REQUIREMENTS OF A.N.S.I. B18.22. ANCHOR RODS SHALL CONFORM TO ASTM A449.
 - ALL STEEL COMPONENTS (EXCEPT STAINLESS) SHALL BE GALVANIZED AFTER FABRICATION IN COMPLIANCE WITH AASHTO M232 (ASTM A153) AND AASHTO M111 (ASTM A123). THE GALVANIZING KETTLE SHALL HAVE 0.05 TO 0.09 PERCENT NICKEL. GALVANIZED SURFACES SHALL HAVE A UNIFORM APPEARANCE AND GALVANIZED MATERIAL SHALL BE PROPERLY STORED. IF PAINTING IS REQUIRED SEE SPECIAL PROVISIONS FOR 708.
 - PREFORMED BEARING PADS (1/8" THICK) SHALL CONFORM TO AASHTO M251.

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECT DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

CITY OF KEENE KEENE NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION T4 STEEL BRIDGE RAIL (MOD)			
REV	DATE	DESCRIPTION	BY
53 REGIONAL DRIVE CONCORD, NEW HAMPSHIRE 03301			
SCALE: AS SHOWN	DESIGN: SIW	BR-26 142 OF 142	
DRAWN: DJD	PROJECT: 18022.01		
CHECKED: RLJ	DATE: SEPTEMBER 2020		



WATER LINE LONGITUDINAL SECTION
SCALE: 3/8" = 1'-0"



WATER LINE DETAIL (AT ABUTMENT)
(ABUTMENT A SHOWN, ABUTMENT B SIMILAR)
SCALE: 1" = 1'-0"

NOTES:

1. MATERIALS: HANGER RODS – STAINLESS STEEL WITH MATCHING NUTS.
2. FOR SUPPORT FRAMING DETAILS, SEE SHEETS BR-15 AND BR-18.
3. ABUTMENT: CASING SLEEVE, AS DETAILED, TO BE USED AT EACH ABUTMENT.
4. EXPANSION JOINT FITTING: EBAA IRON EXTEND-200 WITH 4" AXIAL MOVEMENT CAPABILITY OR APPROVED EQUAL.
5. PROVIDE 2" RIGID URETHANE WATERLINE INSULATION WITH 18 GAGE ALUMINUM JACKET FOR BRIDGE AND CASING INSTALLATION.
6. EACH SECTION OF PIPE SHALL BE SUPPORTED BY AT LEAST 2 UTILITY SUPPORTS.
7. PAYMENT: BRIDGE AND CASING WATERLINE (ITEM 611.06212 (BRIDGE) AND ITEM 611.35226 (CASING)) SHALL INCLUDE FURNISHING AND INSTALLING DUCTILE IRON WATER MAIN, EXPANSION JOINT, TESTING, DISINFECTING (WHEN REQUIRED), INSULATION AND COVER, HANGERS, ROLLERS, RODS, PIPE BEARING PLATE, LINK SEALS, CASING UNDER APPROACH SLABS AND SLEEPER SLABS, CASING SPACERS, ABUTMENT SLEEVES WITH NON-SHRINK GROUT, COMPLETE HEAT TRACING SYSTEM, EXCAVATION AND BACKFILL CONSISTENT WITH THE UTILITY TRENCH DETAIL IN THE ROADWAY PLANS (WHEN EXCAVATION AND BACKFILL IS BEYOND THE LIMITS DEFINED FOR BRIDGE CONSTRUCTION), AND MISCELLANEOUS HARDWARE.
8. IF REQUIRED, PROVIDE 2 INCHES RIGID TRENCH INSULATION OVER WATER MAIN PAST END OF CASING INSULATION UNTIL COVER OVER MAIN IS 5'-0" OR GREATER.

KEYED NOTES:

- ① CARRIER PIPE, PRE-INSULATED (2") 12" D.I. CLASS 52, MECHANICAL JOINT (MJ) CONNECTIONS
- ② 26" DIA. STEEL CASING, SEE WATER LINE DETAIL (AT ABUTMENT)
- ③ 2" RIGID URETHANE INSULATION WITH ALUMINUM JACKET, EXTEND UNTIL 5' PAST END OF CASING
- ④ SLEEVE SPACER, TYPICAL
- ⑤ EXPANSION JOINT FITTING, MECHANICAL JOINT BY MECHANICAL JOINT
- ⑥ PIPE SUPPORT, TYPICAL, SEE DETAILS, SHEET BR-18) (FOR SUPPORT SPACING, SEE FRAMING PLAN, SHEET BR-15)
- ⑦ STEEL WALL CASING SLEEVE WITH NON-SHRINK GROUT
STEEL WALL CASING SLEEVE INSIDE DIAMETER = 30"
- ⑧ RUBBER CASING END SEAL
- ⑨ ANGLE POINT IN PIPE (5' MAX)

CITY OF KEENE KEENE, NEW HAMPSHIRE WINCHESTER STREET RECONSTRUCTION WATER LINE DETAILS			
SCALE: AS SHOWN	DESIGN: SIW	BR-27 143 OF 142	
DRAWN: SLM	PROJECT: 18022.01		
CHECKED: RLJ	DATE: SEPTEMBER 2020		

McFarland Johnson

53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301