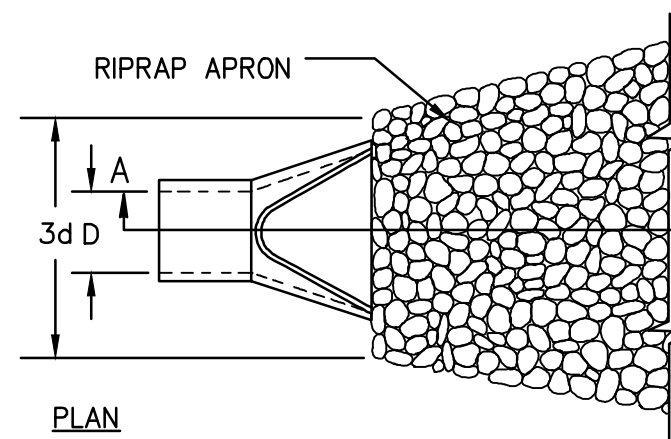
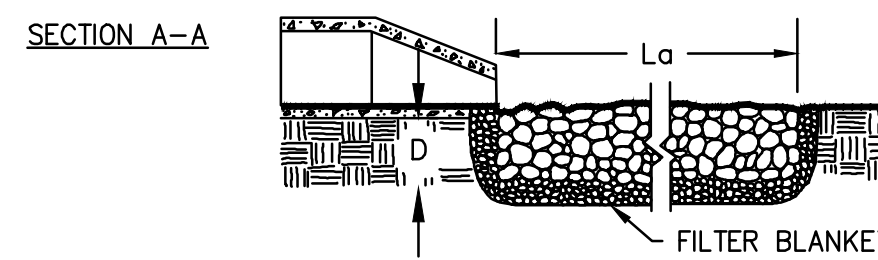


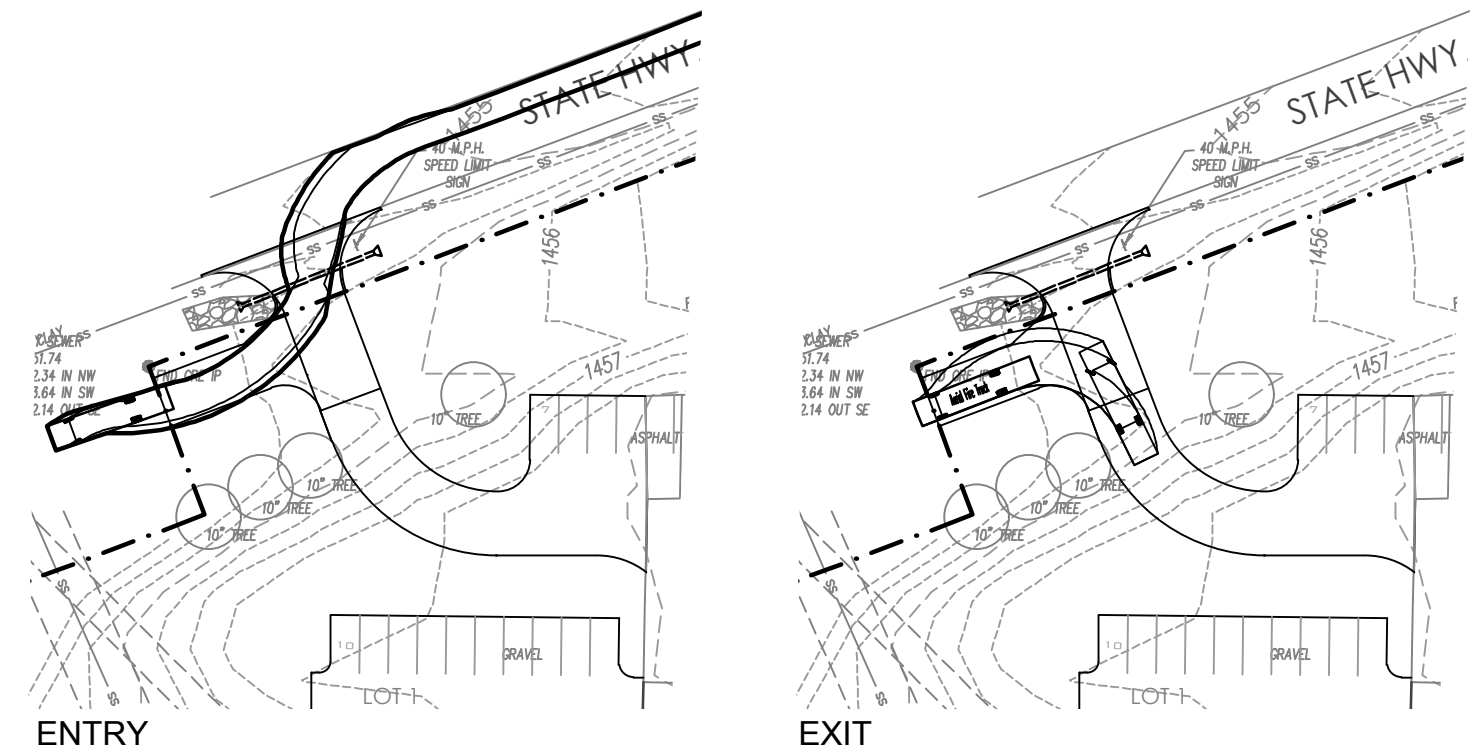
PIPE OUTLET TO FLAT AREA -- NO WELL DEFINED CHANNEL



- NOTES:
1. L_o IS THE LENGTH OF THE RIPRAP APRON.
 2. $D = 1.5$ TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6".
 3. IN A WELL-DEFINED CHANNEL, EXTEND THE APRON UP THE CHANNEL BANKS TO AN ELEVATION OF 6" ABOVE THE MAXIMUM TAILWATER DEPTH OR TO THE TOP OF THE BANK (WHICHEVER IS LESS).
 4. A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND THE SOIL FOUNDATION.



4 RIP RAP PROTECTION
C1.1 SCALE: NOT TO SCALE



5 TRUCK TURN EXHIBITS
C1.1 SCALE: NOT TO SCALE

KEY NOTES:

- ① INSTALL RIP-RAP DOWN FILL SLOPE PER DETAIL 4/C1.1.
- ② NOT USED.
- ③ NOT USED.
- ④ INSTALL 45LF OF 15" Ø PIPE W/F.E.S. AT BOTH ENDS. REFER TO PIPE NOTES.
- ⑤ MATCH NEW PAVEMENT FLUSH WITH EXISTING PAVEMENT.
- ⑥ SAWCUT EXISTING PAVEMENT.
- ⑦ ADA PARKING AREA PER DETAIL 3/C1.4
- ⑧ PROVIDE TRAFFIC CONTROL PER DETAIL 4/C1.4 AND MODOT REQUIREMENTS.
- ⑨ CONTRACTOR TO COORDINATE WITH THE CITY OF MARSHFIELD AND MODOT FOR REMOVAL OF THE EXISTING LIFT STATION ACCESS AND RE-GRADE OF ROADSIDE DITCH.
- ⑩ NEW LOCATION OF SPEED LIMIT SIGN.

SPECIAL NOTE:

CONTRACTOR TO PERFORM DETAILED SITE INSPECTION TO LOCATE ALL EXISTING UTILITIES AND VERIFY ANY POSSIBLE CONFLICTS WITH PROPOSED IMPROVEMENTS PRIOR TO BEGINNING ANY CONSTRUCTION. CONTACT ENGINEER WITH ANY CONFLICTS.

SPECIAL NOTE:

CONTRACTOR SHALL FIELD VERIFY PROPOSED GRADES MATCH EXISTING PAVEMENT AT DRIVEWAY ENTRANCES, SIDEWALK CONNECTIONS, AND ALL CONNECTION POINTS PRIOR TO BEGINNING CONSTRUCTION. CONTRACTOR SHALL NOTIFY ENGINEER IF DISCREPANCY OCCURS.

CAUTION:

EXISTING SURFACE FEATURES, STRUCTURES, ETC. AND UNDERGROUND INSTALLATIONS SUCH AS WATER MAINS, GAS MAINS, SEWERS, TELEPHONE LINES, FIBER OPTIC LINES AND BURIED STRUCTURES ARE INDICATED ON THE DRAWING ONLY TO THE EXTENT SUCH INFORMATION HAS BEEN MADE AVAILABLE TO OR DISCOVERED BY THE SURVEYOR IN PREPARING THIS DRAWING. THERE IS NO GUARANTEE AS TO THE ACCURACY OR COMPLETENESS OF SUCH INFORMATION. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UNDERGROUND AND OTHER UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERE TO.

STORM SEWER PIPE NOTES:

1. PER MODOT GENERAL CONDITIONS & TECHNICAL SPECIFICATIONS FOR PUBLIC IMPROVEMENTS, THE APPROVED PIPE MATERIALS ARE POLYPROPYLENE PIPE (HDP), CORRUGATED METAL PIPE (CMP), AND REINFORCED CONCRETE PIPE (RCP). ANY PIPE ALTERNATES WILL REQUIRE CITY APPROVAL.
2. ALL PIPE IS TO BE INSTALLED PER MODOT STANDARDS AND THE MANUFACTURER'S REQUIREMENTS.
3. ALL INSTALLED PIPE SHALL BE MIN. HS-20 LOADING AND MEET ALL APPLICABLE ASTM STANDARDS.
4. ALL INSTALLED PIPE SHALL HAVE A MANNING'S ROUGHNESS COEFFICIENT OF $n=0.013$.

GENERAL NOTES:

1. SITE CONDITIONS BASED UPON SURVEY SUBMITTED BY OWNER. THE CONTRACTOR SHALL FIELD VERIFY ALL HORIZONTAL AND VERTICAL LINES AND GRADES OF EXISTING UTILITIES PRIOR TO THE CONSTRUCTION OF IMPROVEMENTS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY UPON DISCOVERING A DISCREPANCY BETWEEN THE CONTRACT DRAWINGS AND ACTUAL FIELD CONDITIONS. CONTACT ONE CALL: 1-800-344-7483.
2. THE CONTRACTOR MUST COORDINATE CONSTRUCTION WITH THE NECESSARY AUTHORITIES.
3. APPLICABLE PERMITS MUST BE OBTAINED PRIOR TO EXCAVATION WITHIN ANY RIGHT-OF-WAY, AND PRIOR TO ANY CONSTRUCTION.
4. PROVIDE POSITIVE DRAINAGE AWAY FROM ALL BUILDINGS WITHOUT PONDING ON PARKING LOTS OR SIDEWALKS.
5. ALL IMPROVED RUNOFF TO DRAIN TO DRAINWAYS.
6. ALL CONTOURS AND SPOT ELEVATIONS SHOWN ARE FINISH GRADE.
7. THE REMOVAL OF ANY TREES SHALL BE APPROVED BY THE PROJECT MANAGER PRIOR TO REMOVAL.
8. COORDINATE WORK WITH OTHER SITE RELATED DEVELOPMENT DRAWINGS.
9. TESTING OF CONTROLLED STRUCTURAL FILL, OBSERVATION OF EXCAVATIONS AND COMPACTION OF SUBGRADE SHALL BE DONE BY A QUALIFIED GEOTECHNICAL ENGINEER. FOLLOW GEOTECHNICAL ENGINEER RECOMMENDATIONS FOR SITE EXCAVATION REQUIREMENTS.
10. REFER TO STRUCTURAL DRAWINGS FOR BUILDING EXCAVATION REQUIREMENTS.
11. GRADING AT HANDICAP ACCESSIBLE PARKING SPACES SHALL NOT EXCEED 2% IN ANY DIRECTION. GRADING AT HANDICAP ACCESSIBLE ROUTE SHALL NOT EXCEED 5% IN DIRECTION OF TRAVEL WITH 2% MAXIMUM CROSS SLOPE. GRADING AT BUILDING EGRESS DOORS SHALL NOT EXCEED 2% FOR A DISTANCE OF 5'-0" PERPENDICULAR FROM FACE OF DOOR.

SAFETY NOTES:

1. IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.
2. THE DUTY OF THE ENGINEER OR OWNER TO CONDUCT CONSTRUCTION REVIEW OF THE CONTRACTOR'S PERFORMANCE IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES IN, ON, OR NEAR THE CONSTRUCTION SITE.

STORMWATER CALCULATIONS:

SITE AREA = 1.65 AC
 PROPOSED DRAINAGE AREA = 1.65 AC
 EXISTING IMPERVIOUS = 0.48 AC
 PROPOSED IMPERVIOUS = 0.80 AC

OFFSITE DRAINAGE AREA
 AREA = 63.35 AC
 RUNOFF COEFFICIENT = 0.70
 TIME OF CONCENTRATION = 36 MIN

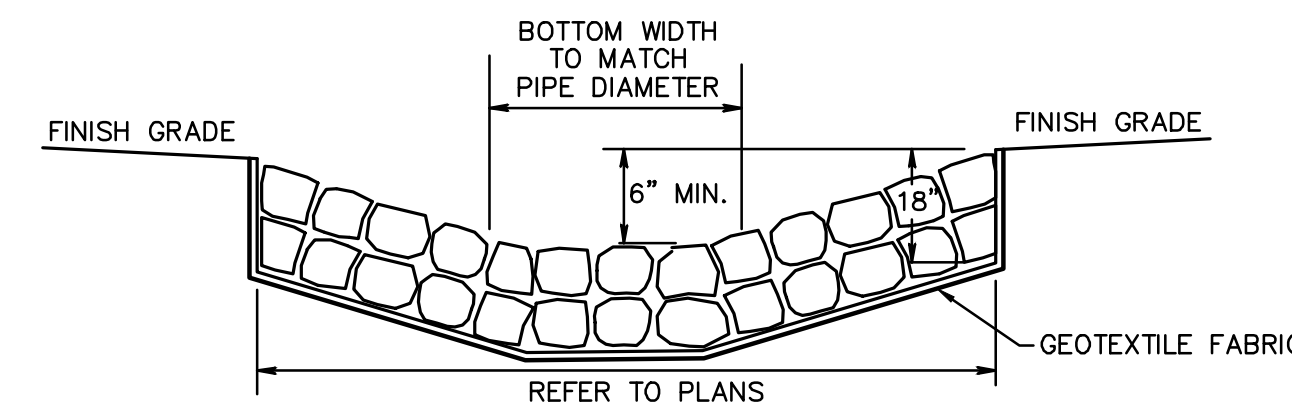
PRE-DEV ON-SITE DRAINAGE AREA
 AREA = 1.65 AC
 RUNOFF COEFFICIENT = 0.64
 TIME OF CONCENTRATION = 5 MIN

POST DEV ON-SITE DRAINAGE AREA
 AREA = 1.65 AC
 RUNOFF COEFFICIENT = 0.73
 TIME OF CONCENTRATION = 5 MIN

COMBINED PRE-DEV FLOWS
 2 YEAR: 110.57 CFS
 10 YEAR: 183.01 CFS
 100 YEAR: 240.83 CFS

COMBINED POST DEV FLOWS
 2 YEAR: 110.57 CFS
 10 YEAR: 183.01 CFS
 100 YEAR: 240.83 CFS

THE DEVELOPED SITE WILL NOT INCREASE PEAK FLOWS TO ANY NEIGHBORING PROPERTIES AS THE SITE IS LOCATED IN A LARGE WATERSHED. THE DEVELOPED FIRE STATION SITE FLOWS WILL LEAVE THE SITE MORE QUICKLY THAN THE PEAK FLOW REACHES THE SITE LOCATION FROM THE OFF-SITE DRAINAGE AREA. NO ON-SITE DETENTION OR WATER QUALITY IS PROVIDED FOR THIS DEVELOPMENT.



- NOTES:
1. HAND PLACE RIP-RAP IN ALL PLACES AS INDICATED ON THE PLAN.
 2. THE STONE FOR RIP-RAP SHALL CONSIST OF FIELD STONE OR ROUGH UNHEWN QUARRY STONE AS NEARLY AS UNIFORM, IN SECTION AS PRACTICAL.
 3. THE STONES SHALL BE DENSE, RESISTANT TO THE ACTION OF AIR AND WATER, AND SUITABLE IN ALL ASPECTS FOR THE PURPOSE INTENDED UNLESS OTHERWISE SPECIFIED.
 4. ALL STONES USED AS RIP-RAP SHALL WEIGH BETWEEN 50-150 POUNDS EACH, AND AT LEAST 60 PERCENT OF THE STONES SHALL WEIGH MORE THAN 100 POUNDS EACH.
 5. STONES SHALL BE A MINIMUM OF 12" IN DIAMETER AND PLACED A MINIMUM OF 18" BELOW FINISH GRADE.
 6. RIPRAP PAD SHALL HAVE NO SLOPE FOR THE LENGTH OF THE RIPRAP PAD.
 7. FINISHED GRADE ADJACENT TO THE RIPRAP PAD SHALL BE A MINIMUM OF 6" ABOVE THE RIPRAP PAD BOTTOM.

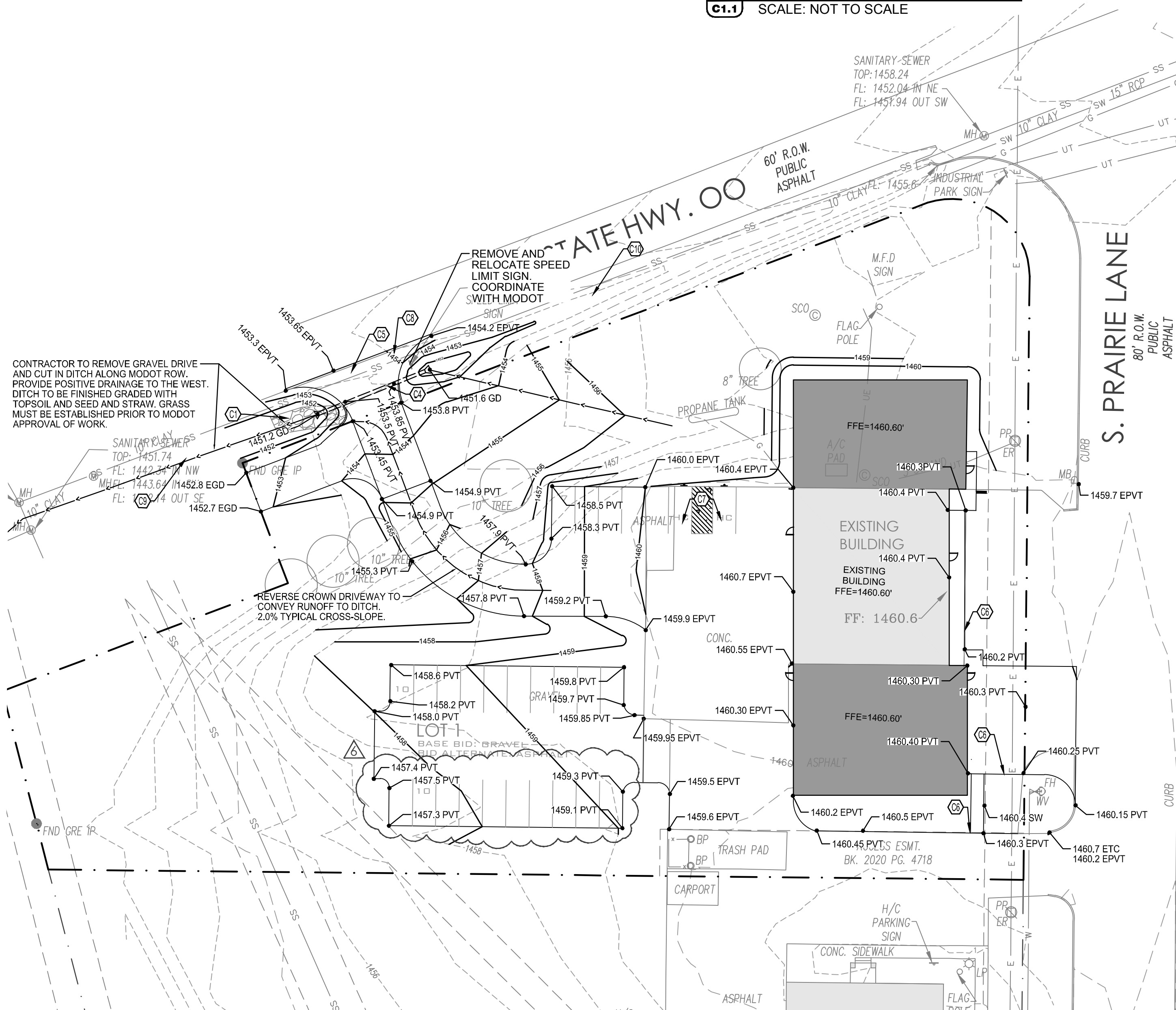
2 RIP RAP PAD DETAIL
C1.1 SCALE: NOT TO SCALE



SYMBOLS LEGEND

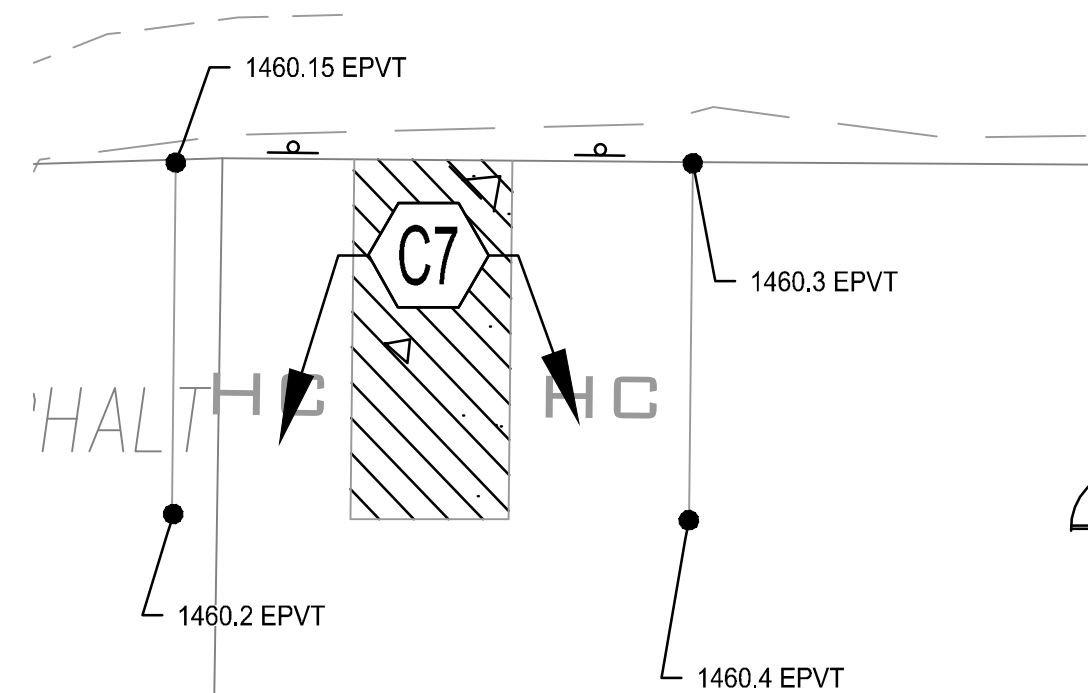
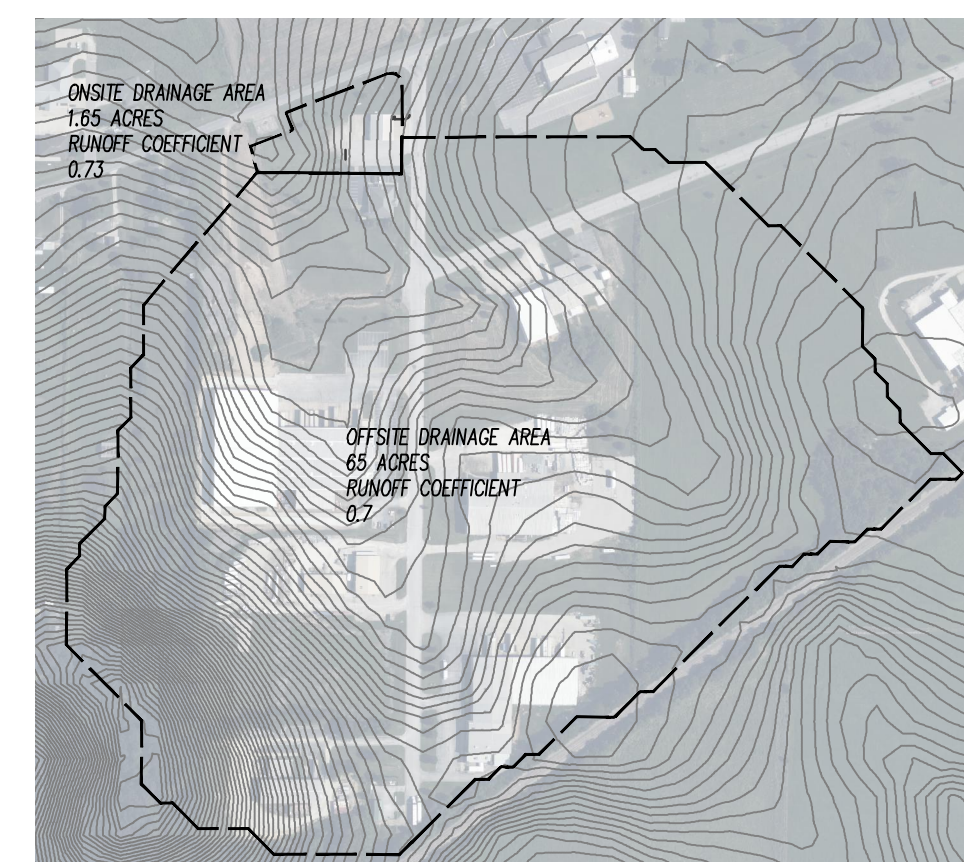
REFER TO SURVEY (SV1) FOR EXISTING CONDITION SYMBOLS LEGEND AND SITE CONTROL.

---1460---	EXISTING GRADE LINES	
- - -1460 - - -	PROPOSED GRADE FOR SUBDIVISION	
—1460—	PROPOSED NEW GRADE LINES	
[Hatched Box]	NEW BUILDING CONSTRUCTION	
[Arrow]	SURFACE FLOW ARROW	
[Symbol]	LIST	ABBREVIATION
	NONE	SW
	TOP OF WALL	TW
	TOP OF CURB	TC
	TOP OF PAVEMENT	PVT
	NEW GRADE	GD
	CONCRETE	CONC
	EXISTING TOP OF CURB	ETC
	EXISTING GRADE	EGD
	EXISTING PAVEMENT	EPVT
	EXISTING SIDEWALK	ESW
	FLOW LINE	FL
	TOP OF BERM	TOP

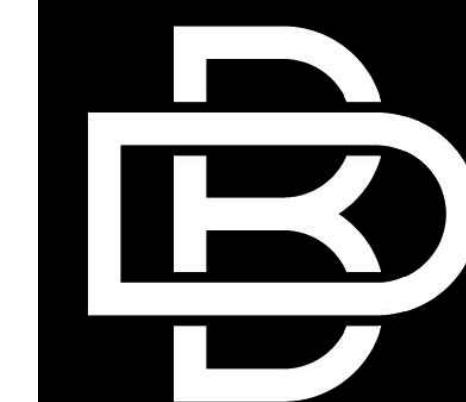


1 SITE GRADING PLAN
C1.1 SCALE: 1" = 30'

DRAINAGE AREA MAP
SCALE: 1" = 500'



3 HANDICAP PARKING AREA
C1.1 SCALE: 1" = 10'



BUXTON KUBIK DODD
DESIGN COLLECTIVE

3100 S. NATIONAL AVENUE, SUITE 300
 SPRINGFIELD, MO 65807
 PHONE: 417.890.5543 FAX: 417.890.5563
 MISSOURI CERTIFICATE OF AUTHORITY NO. A-200600784

PROJECT:
 FIRE STATION NO. 03
 ADDITION & RENOVATION FOR:



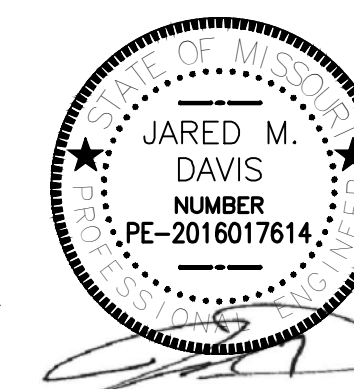
LOCATION:
 521 S. PRAIRIE LANE
 MARSHFIELD, WEBSTER COUNTY,
 MISSOURI 65706

CONSULTANTS:
 MECHANICAL/ELECTRICAL/PLUMBING ENGINEER:
 BUXTON KUBIK
 DODD
 DESIGN COLLECTIVE
 3100 S. NATIONAL AVE.
 SUITE 300 SPRINGFIELD,
 MO 65804
 STRUCTURAL ENGINEER:
 J&M ENGINEERING
 3045 S. KANSAS EXPRESSWAY
 SPRINGFIELD, MO 65807

CIVIL ENGINEER:
 ANDERSON ENGINEERING
 3213 S. WEST BYPASS
 SPRINGFIELD, MISSOURI 65807

MODIFICATIONS:
 AD #1 - 2022-02-26
 AD #2 - 2022-05-06
 SI 01 - 2022-06-16
 PR 01 - 2022-06-16
 SI 02 - 2022-06-30
 REV 1 - 2024-01-11

CONSTRUCTION DOCUMENTS



Project No: Drawn Date CAD File No.
 BKD-2592 ES 11.04.2021

C1.1